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Evaluation of the Multi-Payer Advanced Primary Care Practice (MAPCP) Demonstration

First Annual Report

Prepared for

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**Evaluation of the Multi-Payer Advanced Primary Care Practice (MAPCP) Demonstration
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CHAPTER 1
MULTI-PAYER ADVANCED PRIMARY CARE PRACTICE (MAPCP)
DEMONSTRATION EVALUATION FIRST ANNUAL REPORT: INTRODUCTION,
ORGANIZATION, AND DATA AND METHODS

1.1 Overview of the MAPCP Demonstration and Evaluation

1.1.1 Overview of the MAPCP Demonstration

Under the Multi-Payer Advanced Primary Care Practice (MAPCP) Demonstration, the Centers for Medicare & Medicaid Services (CMS) joined state-sponsored initiatives to promote the principles that characterize patient-centered medical home (PCMH) practices. After a competitive solicitation, eight states were selected for the MAPCP Demonstration: Maine, Michigan, Minnesota, New York, North Carolina, Pennsylvania, Rhode Island, and Vermont. While all eight states were slated to start July 1, 2011, only New York, Rhode Island, and Vermont became operational on that date. Minnesota and North Carolina became operational October 1, 2011, and Maine, Michigan, and Pennsylvania became operational January 1, 2012.

Each state PCMH initiative participating in the MAPCP Demonstration was required to be conducted by a state agency as part of a state-sponsored reform initiative. Medicare joined state reform initiatives that were already in progress. In all eight initiatives, Medicaid and major private health plan(s) are participating. Several programs, such as Rhode Island, also feature substantial participation among self-insured groups. Many state programs are exceeding the MAPCP Demonstration requirement for at least 50% private payer participation.

In the request for applications, states were instructed that the average Medicare per member per month (PMPM) payment should not exceed \$10 and that payment methods should be applied consistently by all participating payers—but not necessarily at the same dollar level—unless a compelling case was made. Each state has its own payment levels and established its own methodologies. For example, the State of Vermont pays practices differentially based upon the National Committee for Quality Assurance’s (NCQA’s) Patient-Centered Medical Home™ (PPC®-PCMH™) recognition level. In contrast, the State of Minnesota pays practices differentially based upon the number of patient co-morbidities.

The state initiatives were also required to promote the principles of “advanced primary care practice,” but each state has been given broad flexibility to adopt its own definition of what constitutes such practice. All of the MAPCP Demonstration states (except for Michigan and Minnesota) have elected to define “advanced primary care” in alignment with the NCQA’s Physician Practice Connections®— PPC®-PCMH™ recognition standards. Many of the states are using NCQA standards, however, the states have added additional expectations for practices to reflect local priorities. For the remainder of this report, we use the term, PCMH, to refer to all practices participating in each of the state’s MAPCP Demonstration initiatives with the exception of Minnesota, where we use the term, Health Care Homes, consistent with their naming convention.

Each state initiative was also required to make provisions for the integration of community-based resources to support advanced primary care practices. Several states (Maine,

New York, North Carolina, Michigan, Rhode Island, and Vermont) are funding community health teams (CHTs), community-based practice support networks, or physician organizations to perform this function.

Further, each state initiative was required to include provisions for the ongoing measurement of quality and performance, and evaluation of the initiative's impact. Several states are partnering with state universities to conduct these evaluations.

To provide the "prospective assurance" of budget neutrality, states were required to identify and present persuasive evidence supporting their projections that CMS's participation in the state initiative would result in savings to Medicare at least equal to the amount of CMS's payment to participating practices. Thus, CMS has been provided with measurable outcomes for purposes of evaluation.

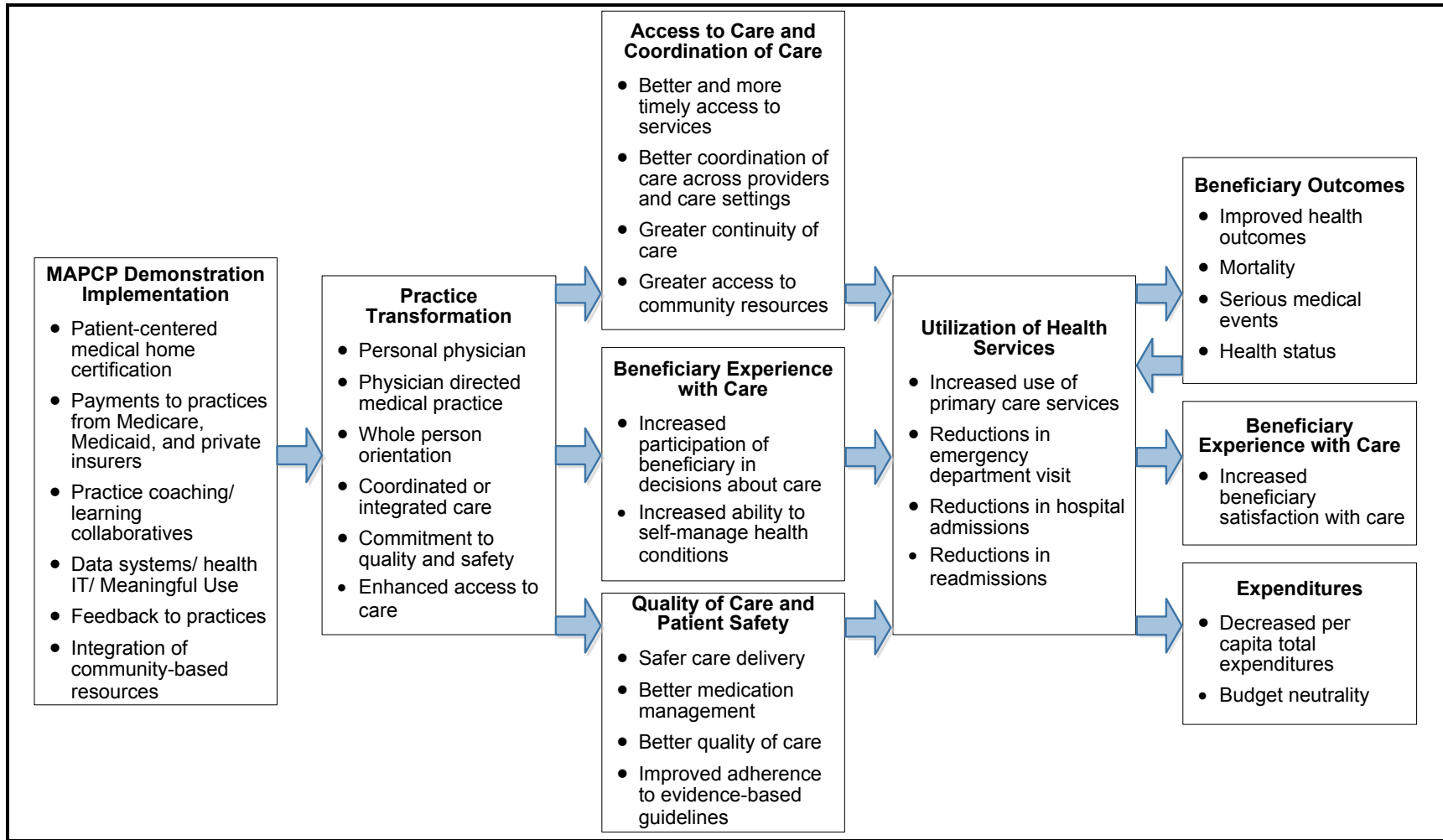
1.1.2 Overview of the MAPCP Demonstration Evaluation

In 2011, CMS selected RTI International (RTI) and its subcontractors, The Urban Institute and the National Academy for State Health Policy, to evaluate the MAPCP Demonstration. The goal of the evaluation is to identify features of the state initiatives or the participating PCMH practices that are positively associated with improved outcomes. The evaluation uses a mix of qualitative and quantitative methods to capture each of the states' unique features and to develop an in-depth understanding of the transformative processes that occur within and across the states' health care systems and participating PCMH practices, thereby allowing us to directly link structural and process changes to outcomes.

Figure1-1 presents the conceptual framework for the evaluation of the MAPCP Demonstration, organized around seven main domains: State Initiative Implementation, Practice Transformation, Access to Care and Coordination of Care, Beneficiary Experience with Care, Quality of Care and Patient Safety, Effectiveness (utilization and expenditures), and Special Populations. Although there are aspects unique to each state's initiative, the framework reflects the common features of the interventions and the broad areas of outcomes within our evaluation design. The framework abstracts from other factors that also influence the evaluation outcomes, such as individual beneficiary characteristics and the broader health care, social, political, economic, and physical environment in which the PCMH initiatives operate.

As shown in Figure1-1, the state-sponsored initiatives are undertaking a range of strategies to promote the transformation of participating practices to PCMH practices. In addition to payments from the major payers in the state to participating practices, other strategies to support practices include practice coaching and learning collaboratives; development of data systems and health information technology (IT) infrastructure to support decision support tools and information exchange among providers; feedback to practices on quality, utilization, and cost outcomes; and integration of community-based resources. These strategies are intended to support the transformation of participating practices to embody the principles that are the basis of the PCMH model (American Academy of Family Physicians et al., 2007). The PCMH model expands on the chronic care model developed by Wagner (1998), which identified six elements of a delivery system that lead to improved care: the community, the health system, self-management support, delivery system design, decision support, and clinical information systems

Figure 1-1
Conceptual framework for the Multi-payer Advanced Primary Care Practice (MAPCP) Demonstration evaluation



(Glasgow, Orleans, & Wagner, 2001; Wagner, 2002; Wagner et al., 2001). Beneficiaries in these transformed practices are expected to have better access to care and more coordinated care; to receive safer, higher quality care; and to be more engaged in decision-making about their care and management of their health conditions. As in the chronic care model, patients and providers in PCMHs interact more productively, leading to improved functional and clinical outcomes. As a result, patients are expected to have more efficient patterns of health service utilization, thereby promoting the triple aim of improving beneficiary experience with care, improving health outcomes, and reducing per capita total expenditures (Berwick, Nolan, & Whittington, 2008). Improved health outcomes can also result in reduced service utilization.

To test the success of the MAPCP Demonstration, individual-, practice-, and system-level primary and secondary data are being collected and analyzed to answer research questions organized in three broad evaluation domains: ***State Initiative Implementation, Practice Transformation, and Outcomes***. Outcomes include clinical quality of care and patient safety, access to and coordination of care, special populations, beneficiary experience with care, patterns of utilization, Medicare and Medicaid expenditures, and budget neutrality. The evaluation team worked collaboratively with CMS, other CMS demonstration evaluation contractors (e.g., RAND), and evaluators of non-CMS PCMH initiatives, such as the Multi-State PCMH Collaborative and the PCMH Evaluators Collaborative, to identify a core set of outcome measures and specifications to use in this report. Further, the evaluation team identified additional outcome measures to evaluate across all eight states for both Medicare and Medicaid beneficiaries. Lastly, the evaluation team reviewed the states' MAPCP Demonstration applications to determine the types of utilization and expenditure reductions each state expected and developed analytic variables for these services to allow for direct examination of budget neutrality on an annual basis. ***Appendix 1A*** contains a table of the evaluation research questions by each evaluation domain and summarizes the methods, outcomes measures, and data sources that will be used to answer the research questions.

The evaluation uses a mixed-method design, with both quantitative and qualitative methods and data. Mixed-methods research is well suited for accomplishing the goals of this evaluation because different methods yield different insights. Quantitative methods are well suited to outcome evaluation and answering a variety of questions about whether and by how much costs have been reduced and quality and safety improvements achieved for various types of beneficiaries and practices. The goal of the quantitative analyses for the evaluation is to estimate the effect that the MAPCP Demonstration has on changes in patient utilization, costs, and other outcomes. In contrast, qualitative methods are well suited for process evaluation and can provide data on the historical and current context of the state initiatives, key features of the initiatives and how they evolve over time, barriers and facilitators to implementation, perceived benefits and costs or pros and cons to practices and patients, and lessons learned. The goal of the qualitative analyses for the evaluation is to complement the quantitative methods.

The evaluation team is conducting three rounds of primary and secondary data collection preceding three sets of analyses that will be reported to CMS in the First, Second, and Third Annual Reports and the Final Report. With three sets of analyses, we will be able to report both qualitative and quantitative findings along a continuum of state implementation and practice transformation maturation. Our principal focus will be to conduct eight separate within-state evaluations. Qualitative analyses of the effects of the MAPCP Demonstration will be conducted

within each state three times and across the eight states in the last year of the evaluation. Quantitative analyses will be conducted three times. We will conduct a full set of implementation, practice transformation, and outcomes analyses individually for each state and then a smaller set of three quantitative analyses related to budget neutrality, utilization, and expenditures across the eight states thereby allowing us to examine which features of the state initiatives or the participating PCMH practices are associated with positive outcomes.

This First Annual Report contains findings from the first round of site visits to each of the eight MAPCP Demonstration states, which occurred in September and October 2012, and quantitative data analyses for the first year of each state's demonstration. The quantitative analyses are restricted to Medicare fee-for-service (FFS) beneficiaries. RTI continues to work with each state to obtain Medicaid claims data directly from the states, their contractors, or managed care organizations (MCOs) providing health care insurance for Medicaid beneficiaries. Medicaid quantitative findings will be presented in the second annual report.

To allow sufficient time for Medicare claims to be submitted and processed, we restrict our quantitative analyses to Medicare beneficiaries who were assigned to practices participating in the Vermont, New York, and Rhode Island state initiatives from July 1, 2011 through June 30, 2012, in the Minnesota and North Carolina state initiatives from October 1, 2011 through September 30, 2012, and in the Pennsylvania, Maine, and Michigan initiatives from January 1, 2012 through December 31, 2012. Thus, we are evaluating the first year of the MAPCP Demonstration for all eight states.

1.1.3 Organization of the First Annual Report

The First Annual Report contains the qualitative and quantitative findings from the first year of evaluation by the evaluation team. The remainder of this chapter contains two sections. **Section 1.2** provides an overview of our MAPCP Demonstration evaluation design and qualitative and quantitative data and methods used in this report. **Section 1.3** provides the findings from our assessment of equivalency of baseline trends in outcomes between the intervention and comparison groups prior to the start of the MAPCP Demonstration.

Chapter 2 provides a summary of qualitative and quantitative findings across the eight MAPCP Demonstration states and across the key evaluation domains of **State Initiative Implementation, Practice Transformation, and Outcomes** (clinical quality of care and patient safety, access to and coordination of care, special populations, beneficiary experience with care, patterns of utilization, and Medicare expenditures). This chapter starts by identifying common themes (**Section 2.1**) across the eight states and provides a snapshot of key features of the eight initiatives (**Section 2.2**). **Section 2.3** summarizes key themes and early **implementation** findings from the site visits to each state and concludes with lessons learned. **Section 2.4** summarizes key qualitative findings related to **practice transformation** activities during the first year of the MAPCP Demonstration. **Section 2.5** provides a cross-state summary for six quantitative outcomes. **Section 2.6** summarizes the Medicare budget neutrality results. **Section 2.7** provides an overall summary of implications of the findings for states, CMS, and evaluators moving forward.

Chapters 3 through 10 provide detailed qualitative and quantitative findings for each of the eight MAPCP Demonstration states. Each chapter has eight sections: state initiative implementation; practice transformation; clinical quality of care, patient safety, and health outcomes; access to care and coordination of care; beneficiary experience with care; effectiveness (utilization, expenditures, and budget neutrality); and special populations. Each chapter concludes with a summary of early findings and a discussion.

1.2 Overview of Evaluation Design and Qualitative and Quantitative Data and Methods

In this section, we provide an overview of our quantitative and qualitative methods. We begin by describing the MAPCP Demonstration eligibility criteria that Medicare FFS beneficiaries must meet to participate in each initiative and describe the method of attribution of beneficiaries to participating PCMHs and comparison practices. Next, we provide a description of the analytic methods used in our modeling of outcomes to adjust for partial eligibility for the MAPCP Demonstration and to align beneficiary, practice, and geographic characteristics of the comparison groups to the intervention groups. Third, we provide an overview of qualitative data and methods. We conclude this section with an overview of quantitative data and methods used in our evaluation, including our approach to estimating Medicare budget neutrality within the MAPCP Demonstration.

1.2.1 Identification of Intervention Beneficiaries

Attribution to practices participating in each state's multi-payer PCMH initiative occurs on a quarterly basis using attribution methods independently developed by each of the MAPCP Demonstration states and implemented by Actuarial Research Corporation (ARC) for all states but Minnesota. Unlike participating practices in the other seven MAPCP Demonstration states, Minnesota practices are expected to self-attribute beneficiaries to practices and submit monthly claims for MAPCP Demonstration payments to Medicare on behalf of all eligible patients in a practice. However, the majority of certified health care home practices who would otherwise be eligible for MAPCP Demonstration payments have not submitted monthly MAPCP Demonstration claims to Medicare. Given the exceptionally low observed rate of practice billing in Minnesota's MAPCP Demonstration, we developed a beneficiary attribution approach similar to what is being used in the other MAPCP Demonstration states for use in the evaluation of Minnesota¹ (see *Appendix 1-B* for details on attribution for each of the states).

¹ For the First Annual Report, ARC did not attribute beneficiaries to participating health care homes in Minnesota at the state's request. To conduct our first year evaluation, it was necessary for RTI to develop an attribution method. Attribution to the intervention group occurred only once using practices that were participating during the first quarter of Minnesota's participation in the MAPCP Demonstration.

To be eligible for participation in the MAPCP Demonstration, Medicare beneficiaries must meet the following eligibility criteria each quarter:

- alive
- have Medicare Parts A and B
- be covered under traditional Medicare Fee-For-Service (FFS)
- have Medicare as the primary payer for health care expenses
- reside in the state-specified geographic area for its initiative
- attributed to a MAPCP Demonstration participating practice.

All Medicare beneficiaries that meet these six eligibility criteria are eligible for inclusion in the evaluation sample. They also must be attributed to a participating PCMH for at least 3 months over the course of the relevant demonstration evaluation period (i.e., 12 months, 24 months, 36 months, etc.). We removed beneficiaries with less than 3 months of eligibility during the demonstration period all impact analyses to minimize the potential bias to the null of our findings. Practices and other entities, such as the community health teams in some states, have limited opportunity to engage and influence outcomes during the demonstration period for beneficiaries with limited time attributed to a participating PCMH.

The MAPCP Demonstration allows for a rolling entrance of practices into and out of the demonstration. In addition, Medicare beneficiaries are also allowed to flow into the evaluation on a rolling basis and may lose eligibility during the demonstration if the practice to which he/she has been attributed drops out of the state's initiative. Beneficiaries also lose eligibility at the point they no longer meet the criteria listed above. However, once a beneficiary is eligible for the MAPCP Demonstration for at least 3 months, the beneficiary will always be included in the evaluation with censoring of outcomes during periods of lost eligibility. Thus, we consider the MAPCP Demonstration an intent-to-treat study design.

For the quantitative analyses, claims data are included in our analyses if the service was provided on a day when the beneficiary was eligible. Claims were excluded during any periods of ineligibility. We constructed a variable that reflects the length of time the beneficiary is eligible each quarter to use as an analytic weight in all claims-based analyses. The eligibility fraction (EF) is defined for each quarter as the total number of eligible days during the quarter, divided by the total number of days alive in the quarter².

1.2.2 Identification of Comparison Beneficiaries

We used a three-step approach to the identification of comparison beneficiaries for each of the eight MAPCP Demonstration states: (1) identification of the geographic area from which

² We restrict the denominator to days alive which effectively prevents inflating outcomes during the quarter in which a beneficiary dies.

the intervention beneficiaries were drawn; (2) identification of primary care practices within the geographic area that are not participating in each state’s MAPCP Demonstration initiative; and (3) identification of beneficiaries that meet the MAPCP Demonstration eligibility criteria and are attributed to a comparison group primary care practice. For each state, we identified two comparison groups. The first was comprised of Medicare FFS beneficiaries who met MAPCP Demonstration eligibility criteria and attribution criteria to practices that had similar PCMH recognition but were not participating in the state’s multi-payer initiative. The second was comprised of Medicare FFS beneficiaries who met MAPCP Demonstration eligibility criteria and attribution criteria to practices that did not have PCMH recognition.

In each state, the process began by reviewing the geographic areas of each state’s MAPCP Demonstration initiative and mapping the areas by county. The next step was to identify counties that might serve as similar comparison geographic areas. If the demonstration permeated the entire state, then comparisons were drawn from counties in neighboring states. A comparison from outside the state was used only for Vermont where the Blueprint for Health (Vermont’s MAPCP Demonstration initiative) already had a presence in all counties in the state. If the demonstration practices dominated in their respective areas, then the comparison area was drawn from another set of counties elsewhere within the same state. Finally, in five states, the comparison area is the same as the MAPCP Demonstration county area. This is often the preferred option since it helps to ensure that both groups are subject to the same local health care market conditions. *Table 1-1* shows the types of comparison counties for the MAPCP Demonstration states.

**Table 1-1
Intervention and comparison areas by MAPCP Demonstration state**

State	Demonstration area	Proposed comparison area
Maine	11 counties in southern part of state	Same as demonstration counties
Michigan	40 counties	Same as demonstration counties
Minnesota	24 counties	Same as demonstration counties
New York	7 counties in Adirondacks region	16 counties in upstate area
North Carolina	7 mostly rural counties scattered across state	16 counties in remainder of state
Pennsylvania	4 counties in Northeast region, 5 counties in Southeast region	Same as demonstration counties
Rhode Island	3 westernmost counties in state	Same as demonstration counties
Vermont	All 14 counties in state	10 counties in New Hampshire and 1 county in Massachusetts

MAPCP=Multi-payer Advanced Primary Care Practice.

When comparison practices and beneficiaries were drawn from non-demonstration regions, a preliminary list of candidate counties was created based on several county-level characteristics (e.g., urbanity, mean annual Medicare expenditures, median household income, and the supply of primary care physicians per 100,000 residents) compiled from Medicare and U.S. Census data. Candidate counties were those that have values for these characteristics that are within the range observed for the MAPCP Demonstration counties. If needed, the comparison region was expanded to ensure that it encompasses a sufficient number of PCMHs that are not participating in the MAPCP Demonstration.

After the comparison counties were finalized, a list of primary care and multi-specialty medical practices in those counties was generated from Medicare claims data and compared with a list of office-based primary care and multispecialty practices to ensure that TINs found in the claims data represent primary care practices like those involved in MAPCP Demonstration. If a state's initiative includes Federally Qualified Health Centers (FQHCs), rural health centers (RHCs), or critical access hospitals (CAHs), then efforts were made to supplement the comparison group with these types of organizations. These practices are identified through two sources: Organizational National Provider Identification (NPI) numbers in claims data and organizations listed in the National Plan and Provider Enumeration System (NPPES). Practices serving less than 30 Medicare FFS beneficiaries per year and those that are involved in other CMS PCMH initiatives or practice-based interventions were deleted from the list of comparison practices. These initiatives include the FQHC Advanced Primary Care Practice Demonstration, Medicare Shared Savings Program, Medicare Health Care Quality Demonstration, Pioneer Accountable Care Organization (ACO) Model, Independence at Home Demonstration, the Physician Group Practice Transitional Demonstration, and the Comprehensive Primary Care Initiative (CPCI). These initiatives are identified through the CMS Master Data Management (MDM) provider extract file; organizations participating in the FQHC Demonstration were identified by Truven Health Analytics.

The same protocol used to attribute individual Medicare beneficiaries to a specific MAPCP Demonstration PCMH was used to assign comparison beneficiaries to each comparison practice. All beneficiaries who meet the MAPCP Demonstration eligibility criteria and are assigned to a comparison practice using the state-specific assignment algorithm are members of the comparison group. Eligibility is determined in a manner similar to that described above and using the same "as of" eligibility date that is used by Actuarial Research Corporation (ARC) when attributing beneficiaries to the MAPCP Demonstration practices with one exception. Comparison group beneficiaries are attributed to a comparison group practice on an annual basis and are not re-assigned each quarter, which is the process that ARC uses for beneficiary assignment to the intervention groups. Once a beneficiary is attributed to a MAPCP Demonstration participating PCMH, the beneficiary is no longer eligible to be attributed to a comparison group practice. These beneficiaries are removed from all previous quarters' assignment to a comparison group. Given the size of the MAPCP Demonstration comparison groups, the numbers of beneficiaries that are switching status are very small; thus, removing them will have negligible impact on the comparison groups' outcomes over time.

MAPCP Demonstration participants are constantly changing during the course of the study due to the entrance of new practices, the withdrawal of others, and attrition due to death or loss of other MAPCP Demonstration eligibility. To emulate this dynamic situation, we check

eligibility for the MAPCP Demonstration on a quarterly basis and remove from the comparison group any beneficiaries that no longer meet the demonstration eligibility criteria. Further, on a quarterly basis we also check to determine if any of the comparison group practices have become participants in any of the MAPCP Demonstration states' initiatives and remove them from the comparison group effective the quarter in which the practice began participation in each state's initiative. Beneficiaries previously assigned to these practices move to the intervention group if the assignment process performed by ARC assigns them to a newly participating practice; otherwise, the beneficiary is dropped from the comparison as of that quarter. Lastly, we conduct a "true-up" of the comparison groups on an annual basis by re-applying the beneficiary assignment algorithm at the end of each year. Like the turnover occurring in MAPCP Demonstration practices and beneficiaries, this process adds new beneficiaries, removes those who no longer receive the plurality of their services from a comparison group practice, and moves beneficiaries and practices from the non-PCMH comparison group to the PCMH comparison group if the practice to which they are assigned received recognition as a medical home during the prior year.

1.2.3 Propensity Score Matching of Comparison Beneficiaries to MAPCP Demonstration Intervention Beneficiaries

In general, the propensity score (PS) is the probability that a sampling unit belongs to the intervention group, conditional on a set of observable characteristics (Rosenbaum & Rubin, 1983). In our context, the PS is the probability that a beneficiary is assigned to a MAPCP Demonstration practice. Propensity scores are estimated from a series of logistic regression models that relate group status (MAPCP Demonstration or comparison group) to a set of beneficiary-, practice-, and region-level characteristics. The logistic model is estimated separately by state and separately for (1) beneficiaries assigned to MAPCP Demonstration practices and those assigned to comparison PCMHs, and (2) beneficiaries assigned to MAPCP Demonstration practices and those assigned to comparison non-PCMH practices. The models are re-estimated quarterly as new beneficiaries are assigned to the MAPCP Demonstration group and new beneficiaries are assigned to PCMH and non-PCMH practices in the comparison group (on an annual basis). The values of the beneficiary-level covariates are taken from the period prior to the start of a state's pilot activities, whereas for the practice- and region-level variables we use data from the demonstration period. Specifically, we use the following variables:

- Beneficiary-level variables: age, sex, HCC score, Charlson Index comorbidity score, and indicators for race, disability status, Medicaid, end-stage renal disease (ESRD), and being institutionalized;
- Practice- and region-level variables: median household income (in \$10,000s)³, indicators for urbanity (rural, micropolitan, metropolitan), indicators for practice size (by number of physicians: solo, small [2-5], medium [6-10], large [>10]), and indicators for primary-care-only practice, multi-specialty practice, FQHC, CAH, and RHCs.

³ While median household income is not a characteristic of a practice, it is identified based on the location of the practice.

In the PS models, the full set of beneficiary-level variables is always used. However, some of the practice- and region-level variables will be omitted because they represent mutually exclusive and collectively exhaustive categories. For example, all observations fall into one (and only one) category defined by the practice size indicators, so we remove the indicator for solo practice from the logistic model. Solo practices thus form the omitted or “reference” category. Similarly, practices in metropolitan areas and multi-specialty practices are reference categories.

Ignoring the reference categories, use of the full set of practice- and region-level covariates in the logistic regression model for the propensity score can still create problems, because some estimated odds ratios can be extreme (i.e., values close to zero or much greater than one). This arises when one (or more) of the covariates almost perfectly predicts being assigned to a MAPCP Demonstration practice. Extreme coefficients and odds ratios lead to extreme regression weights in the comparison group, which we seek to avoid. In some cases, this problem can be overcome by reducing the number of categories. For example, the indicators for small and medium practices can be combined into a “small-or-medium” category. If this is not feasible or still yields extreme estimates, variables are removed from the logistic model.

We also omit practice- and region-level indicators if they indicate a prevalence of 0% or 100% in either the MAPCP Demonstration group or the comparison group (or both). This is done because inclusion of these indicators in the logistic regression either results in extreme odds ratios or would involve including a second constant term in the model (which always contains an intercept term). Depending on the magnitude of the logistic coefficients (and odds ratios), practice-level variables are removed from the model stepwise until a set of independent variables remains with coefficients that lie within predetermined bounds (i.e., in the interval $[-2.5; 2.5]$). As a result of this selection procedure, the sets of practice-level covariates used to estimate the PS models will differ between states and between the two comparison groups used within each state.

The weights for beneficiaries assigned to comparison practices incorporate the “normalized odds” $PS/(1-PS)/\text{mean}[PS/(1-PS)]$, where the mean is calculated over beneficiaries in the comparison group (PCMH or non-PCMH).⁴ The final weights used to calculate average outcomes and in the regression models are therefore equal to EF for beneficiaries assigned to MAPCP Demonstration practices, and equal to $EF * PS/(1-PS)/\text{mean}[PS/(1-PS)]$ for beneficiaries assigned to practices in either of the comparison groups. This assigns a larger weight to beneficiaries in the comparison group with large values of the estimated propensity score. For example, if a comparison beneficiary had a propensity score equal to 0.75, he/she is fairly similar to a demonstration beneficiary, and their propensity weight would incorporate a factor 3.0 $(.75/.25)$ ⁵. Alternatively, a score of 0.25 would result in propensity odds of 1/3, which is low because this person does not “look like” the average demonstration beneficiary. The resulting

⁴ In the analyses, we cap normalized odds at 5 to prevent the use of extreme weights. Dividing by the sample mean of $PS/(1-PS)$ ensures that the “effective” sample size (the sum of the weights) is equal to the original unweighted sample size in the comparison group.

⁵ This assumes that the mean of $PS/(1-PS)$ in the comparison group is 1.

weighted comparison group is more similar to beneficiaries in the MAPCP Demonstration group in terms of the observable baseline characteristics.^{6 7}

1.2.4 Qualitative Data and Methods

To address key evaluation questions and complement the quantitative methods, we used a range of qualitative methods and data. First, we utilized secondary qualitative data such as state applications, interim reports, and notes from monthly conference calls with selected state officials responsible for implementing the program. Second, we conducted semi-structured, in-person interviews in each state with a wide range of key informants during site visits to each state. In subsequent years, we will conduct focus groups with beneficiaries and caregivers.

Site visits to each of the MAPCP Demonstration states occurred in the fall of 2012. The focus of the interviews was to more thoroughly understand how each state initiative was being implemented, what was working well or less well, and any early lessons learned. The goal was to identify timely and actionable promising practices for CMS and states, as well as linkages between aspects of the state initiative features, practice characteristics, and potential outcomes. The interviews focused on two stages of implementation experience (i.e., before and after CMS joined each state's initiative) and how the entrance of Medicare (and in some cases, Medicaid) changed the states' initiatives. The interviews were used to interpret and gather contextual information on how the underlying systems of the multi-payer model operated before and after Medicare's entrance and the potential impact on implementation, practice transformation, and outcomes for Medicare and Medicaid beneficiaries and special populations. Special effort was made to gather baseline information for those states that implemented PCMH initiatives well before the start of the MAPCP Demonstration.

The evaluation team developed protocols for the interviews, which were reviewed by CMS. The protocols were designed so that the research questions were addressed (*see Appendix IA*). Specifically, each major research question was "translated" into a set of topics and questions that were tailored to specific respondent types and state programs (Kvale, 1996; Kvale & Brinkman, 2006). The evaluation team produced six generic respondent type protocols and then customized them based on specific state initiative features. The goal of the customization was to ensure that the questions were specific to each state and that the same set of questions were not asked to more than nine respondents per respondent type within and across the eight states. Respondent types included: 1) state officials; 2) physicians and administrators of practices and/or health systems participating in the MAPCP Demonstration; 3) individuals representing CHTs and networks; 4) individuals representing payer organizations, including Medicaid; 5) individuals representing local chapters of physician and clinical professional associations; and 6) individuals representing Offices of Aging and patient advocates.

⁶ In an experiment with randomization at baseline, both observable *and* unobservable characteristics are balanced between the groups prior to the intervention. Propensity score weighting can only balance observable characteristics.

⁷ With the propensity odds $PS/(1-PS)$ used as a weight component for the comparison group, we estimate what is known as the "effect of treatment on the treated" (Freedman & Berk, 2008; Hirano & Imbens, 2001; Imbens & Wooldridge, 2009).

Interviews with state officials focused on how their multi-payer initiative, including payment model and other efforts to support practice transformation, such as learning collaboratives, was developed and implemented and how specific performance goals were established. Interviews with staff from participating PCMH practices, including staff from CHTs (for those states that use CHTs as extensions of the PCMH practices), focused on how state policies affected their practice transformation, as well as their perceptions of the impact on quality and efficiency before and after Medicare's entrance. We spoke with up to nine patient advocates/community resource/Office of Aging staff within each state to identify state-specific issues to help guide the development of the beneficiary focus group interview guides.

General respondent selection criteria were developed (e.g., get representatives from diverse types of payers and practices) and potential respondents were identified within each respondent type category in each state primarily through review of secondary documents and input from state program officials and MAPCP Demonstration tracking documents. We also occasionally used a "snowball" sampling technique (e.g., who else would you recommend we speak to about a particular topic). Based upon the geographic areas included in each state's initiative, the site visit team also targeted different areas of each state, either based on the predefined initiative areas within a state or across urban versus rural areas, for statewide initiatives. The final list of interviewees was selected by the evaluation team and is confidential.

The types of state officials interviewed included program staff responsible for designing and/or implementing the multi-payer initiative within a state or Medicaid agency staff that were knowledgeable about Medicaid's participation as a payer in the initiative. Respondents from participating private payers and patient advocates were selected based on their involvement in the state initiative. Provider respondents—including practice staff, representatives from provider organizations and networks/pods, and CHTs (where applicable)—were selected in such a way as to maximize diversity (e.g., urban/rural, size, location within the state, payer mix).

Individuals selected for an interview were sent an initial email request to participate in an interview. Those who did not respond to the email received a follow-up phone call requesting an interview. The majority of individuals contacted agreed to be interviewed. However, in cases where individuals were unable or unwilling to participate in an interview, we contacted an alternate on our respondent list. The majority of interviews were scheduled face-to-face during each state's site visit, but some occurred over the phone before, during, and after the site visit. Interview lengths ranged from 30 to 90 minutes depending on the type of respondent:

- State officials: 90 minutes
- Physicians and administrators of practices and/or health systems participating in the MAPCP Demonstration: 30 to 60 minutes
- Individuals representing CHTs and networks, where applicable, as some states do not include these kind of teams or networks in their initiative: 45 minutes
- Individuals representing payer organizations, including Medicaid: 60 minutes
- Individuals representing local chapters of physician and clinical professional associations: 60 minutes

- Individuals representing Office of Aging and patient advocates: 45 minutes

A total of 252 interviews were conducted during the first round of site visits. *Table 1-2* provides a breakdown by state and respondent type.

A team of six to eight site visit staff were deployed to each state to conduct the interviews. Site visit teams were comprised of researchers with different types of substantive and methodological expertise and were matched to interview respondent types (e.g., physician researchers interviewing physicians, researchers with expertise in state policy interviewing state officials, researchers with expertise in practice transformation interviewing practice staff, practice coaches, or collaborative staff, researchers with expertise in payment methods, cost, and quality interviewing payer staff). Interviews were recorded and note-takers used these tapes to fill in gaps in their typed notes produced during the interview. Interview notes were then coded and analyzed.

Of particular importance to note is that all qualitative data are text based, and as such, are more challenging to manage and analyze than claims data. This is because text is not as easily reduced, summarized, or manipulated as numbers, and keeping information in context is critical. To manage and analyze the large volume of primary and secondary qualitative data, we used the qualitative data analysis software NVivo 9 [<http://www.qsrinternational.com>]. This software is especially designed for qualitative and mixed methods research and allows integration of other data sources and comparisons within and across states over time (Bazeley & Richards, 2000; Richards, 2009; Sorensen, 2008).

First, the site visit interview notes were loaded into NVivo. Second, we created a basic coding scheme that allowed us to identify key topics and substantive information based on the interview data by state, respondent type, and phase of evaluation (Bradley, Curry, & Devers, 2007; Miles & Huberman, 1994). The code structure and specific codes were developed from the conceptual framework for the evaluation of the MAPCP Demonstration, which is organized around the seven domains of the evaluation and related evaluation research questions. Two to three site visit team members coded the qualitative data using a shared NVivo 9 database.

Output comprised of interview segments were produced from the NVivo database and provided to each evaluation state team, along with guidance about how to use these qualitative data analysis techniques. The output itself was also organized in a way that facilitated analysis. For example, all interview segments on a particular topic (e.g., practice transformation) were placed in a file and also organized by state and interviewee types (e.g., state policymakers, payers, practice staff).

In this First Annual Report, our analysis focused on how aspects of the state context and MAPCP Demonstration program structure are affecting implementation, particularly practice transformation, relationships with other providers (e.g., specialists and hospitals), and linkages with other community organizations. When evaluating each state's MAPCP Demonstration, we primarily conducted within-state case studies, although we have one cross-state chapter which

Table 1-2
Number of interviews by type and state in round one site visits for evaluation of the MAPCP Demonstration

State	State agency staff	Payers	Provider associations	Office of aging staff/patient advocates	Practices	Community health teams/ community care networks	Other stakeholders [5]	<i>Total per state</i>
Maine	9	6	3	5	6	5	1	35
Michigan	9	5	7[1]	1	7	—	1	30
Minnesota	8	6	5	4	7	—	1	31
North Carolina	5	3	1	1	8	5 [2]	8	31
New York	4	5	1		9	6 [3]	—	25
Pennsylvania	5	8	8	1	9	—	2	33
Rhode Island	5	8	9	2	8	—	4	36
Vermont	5	4	1	1	8	9 [4]	3	31
Total	50	45	35	15	62	25	20	252

NOTE: MAPCP= Multi-payer Advanced Primary Care Practice.

- 1 In Michigan, this category includes physician organizations.
- 2 In North Carolina, this category includes care managers provided by community care networks.
- 3 In New York, this category includes “pod” staff, administrators, and care managers.
- 4 In Vermont, this category includes community health teams and SASH (Support and Services at Home) staff.
- 5 Includes contractors, staff of nonprofit organizations, public-private partnerships, and academic institutions who were involved with the each state’s initiative.

examines major similarities and differences across the MAPCP Demonstration states, programs, and aspects of their implementation experience to date. Our primary focus was to describe the context in which the MAPCP Demonstration is being implemented, including the history of any prior initiative; state program features and their evolution over time; the extent to which implementation and practice transformation occurred as intended; the perspectives of key stakeholders and lessons learned; and, perspectives on the potential impact on Medicare and Medicaid beneficiaries and other special populations.

1.2.5 Quantitative Data for Assessment of Demographic Characteristics and Early Outcomes

The quantitative analyses reported rely upon Medicare administrative and claims data. Below, we describe in more detail the Medicare data and methods used to construct the analytic measures of demographic characteristics, health status, and health care utilization and expenditures. These data on participating Medicare beneficiaries will help inform our understanding of the intervention with descriptive information on the demographic and health status of Medicare FFS beneficiaries participating in each state's initiative during the first year of the MAPCP Demonstration. By studying the first year's patterns of increase or decline in use of health care services and Medicare expenditures, we will be able to link quantitative data with the health system problems that the MAPCP Demonstration programs are attempting to mitigate and allow us to validate the states' underlying assumptions about achieving Medicare budget neutrality within the 3-year demonstration period.

Medicare Data

Historical Denominator file. Actuarial Research Corporation (ARC) provided a Denominator File, which contains beneficiary-level demographic characteristics and the CMS Hierarchical Conditions Categories (HCC) risk scores. The file covers a 2-year period prior to the start of each state's MAPCP Demonstration and includes all beneficiaries who were alive at the start of the historical period and who either (1) lived in each state's MAPCP demonstration area at any point during the time period covered or (2) was assigned to one of the state's MAPCP Demonstration practices at the start of each state's MAPCP Demonstration period. This risk score was used to determine the cut-points across all states for the baseline HCC score categorization.

Medicare Enrollment Data Base (EDB). We use the EDB to identify days of eligibility for the MAPCP Demonstration and provide an estimate of the fraction of the demonstration period that beneficiaries are eligible for the demonstration. This file also provides beneficiary demographic and Medicare eligibility information for the analyses (e.g., date of birth, gender, race, date of death).

Medicare TAP files. The TAP files contain inpatient, hospital outpatient, physician, skilled nursing facility (SNF), home health agency (HHA), hospice, and durable medical equipment (DME) claims for demonstration and comparison beneficiaries from January 2010 forward. These files do not include Medicare Part D (prescription drug) or Medicare Advantage billing data nor Medicaid claims for Medicare and Medicaid dual enrollees. These claims are provided to ARC on a monthly basis and ARC "nets" the claims files to identify final transaction claims on a quarterly basis, allowing for a four-month claims run-out period at the end of each

payment quarter. As of each quarter's processing, prior quarterly netted claims files are updated with claims data processed after the prior cutoff dates for up to a 2 year run-out period, virtually assuring that all paid claims are included.

Medicare National Claims History (NCH) files. RTI extracts data directly from the NCH files using the claim *discharge date* to obtain claims for hospital inpatient services and *thru* date to obtain claims for outpatient services, physician, DME, HHA, and hospice services prior to 2011.⁸ For this report, NCH claims with dates of service from January 1, 2006 through December 31, 2010 were obtained.

Lists of practices and beneficiaries in other CMS demonstrations that are excluded from comparison group practices and beneficiaries. Practices and beneficiaries identified in these lists are excluded from the comparison group as described in more detail in *Section 1.2.2*:

- Truven Health Analytics provides a list of FQHCs participating in the CMS FQHC Advanced Primary Care Practice Demonstration.
- The Master Data Management (MDM) system contains identification and payment information for beneficiaries, providers, and organizations participating in CMS-sponsored ACOs and coordinated care organizations. Programs identified for exclusion from the comparison group for the First Annual Report in the MDM are:
 - Independence at Home Practice Demonstration
 - Medicare Shared Savings Program Demonstration
 - Pioneer ACO
 - Medicare Health Care Quality Demonstration
 - Health Quality Partners
 - Physician Group Practice Transitional Demonstration
 - Comprehensive Primary Care Initiative

Analytic Variables

In this report, we report demographic and health status characteristics of Medicare beneficiaries assigned to a MAPCP Demonstration practice during the first 12 months of the MAPCP Demonstration period, in order to inform our understanding of the beneficiaries being targeted for intervention. In addition, we analyze changes during the first 12 months of the MAPCP Demonstration period in the quarterly rate of growth for six utilization and Medicare expenditure measures and assess the equivalency of trends in quarterly utilization rates and Medicare per beneficiary per month (PBPM) expenditures during a pre-demonstration period that starts for all states in January 2006 and ends with the first month of Medicare joining the

⁸ RTI uses the ARC TAP data for January 2011 forward.

state initiative through the MAPCP Demonstration. *Table 1-3* contains the time periods for analysis of equivalency of trends during the pre-demonstration period and the first year of the MAPCP Demonstration for each of the eight participating states.

Table 1-3
Analysis periods used in the evaluation of the Multi-payer Advanced Primary Care (MAPCP) Demonstration

Demonstration period start date	Demonstration period final end date	Months of demonstration data	Pre-demonstration period start date	Pre-demonstration period end date
New York, Rhode Island, Vermont 7/1/11	6/30/12	12	1/1/2006	6/30/11
North Carolina, Minnesota 10/1/11	9/30/12	12	1/1/2006	9/30/11
Maine, Michigan, Pennsylvania 1/1/12	12/31/12	12	1/1/2006	12/31/11

Below, we describe the construction of analytic variables at the beneficiary level that are aggregated to the beneficiary-quarter level for use in the regression modeling. More detail on the construction of the analytic variables at the state-quarter level used for descriptive analysis is provided in *Section 1.2.6*. Demographic and health status characteristics are developed at the beneficiary-level using common reference points of time across beneficiaries, either during the year prior to when a beneficiary was first attributed to a MAPCP Demonstration practice or at the time when a beneficiary was first attributed to a MAPCP Demonstration practice. The beneficiary-level data are used in the propensity score models and the Medicare utilization and expenditure outcomes models. We also constructed a quarterly variable that reflects the percentage of the quarter the beneficiary met the MAPCP Demonstration eligibility criteria during each pre-demonstration quarter and each of the four demonstration quarters. Lastly, we constructed beneficiary-quarter PBPM estimates of three utilization measures: all-cause hospitalizations, all-cause emergency room (ER) visits, and 30-day unplanned readmissions; and three Medicare expenditure variables: total Medicare expenditures, acute-care hospital expenditures, and ER visit expenditures. Additional detail on the construction of the analytic variables at the beneficiary level is provided in *Appendix 1-C*

Beneficiary eligibility. RTI uses the Medicare EDB to determine daily eligibility during the pre-demonstration and demonstration periods. Because beneficiaries may not remain eligible for the MAPCP Demonstration throughout an entire quarter in which they were attributed to a participating MAPCP Demonstration practice or a comparison group practice or for the pre-demonstration period, for each individual we calculate a quarterly eligibility fraction, defined as the number of eligible days within the quarter divided by the total number of days in that quarter.

For example, a beneficiary who is MAPCP Demonstration-eligible for 30 days out of 90 has an eligibility fraction of 0.33 for that quarter. The eligibility fraction is also used to calculate weighted average outcomes for each state and is one component of the weight used in the weighted regression models. Beneficiaries with limited eligibility are down-weighted, thereby preventing them from exerting undue influence on the evaluation results.

Beneficiary demographic characteristics. Age, gender, race, Medicare status (aged-in versus disabled), and urban residence are created using the Medicare EDB. Age is defined as of the date the beneficiary was first assigned to a MAPCP Demonstration practice or comparison practice. Gender and race use the Medicare EDB definitions and that designation does not change over time. Medicare status is constructed using the original reason for entitlement, which also does not change over time. The Zip code of the beneficiary's residence at the time of first assignment to a MAPCP Demonstration or comparison group practice is used to identify if a beneficiary resides in a Metropolitan Statistical Area (MSA). If so, then the beneficiary is classified as living in an urban area; otherwise the beneficiary is classified as living in a rural area.

Medicare and Medicaid dual eligible status. The Medicare EDB is used to determine Medicare and Medicaid dual eligible beneficiaries during the one-year period immediately prior to their first assignment to a MAPCP Demonstration practice or comparison group practice. A dichotomous variable is created to reflect dual eligible status.

Baseline Hierarchical Conditions Category (HCC) risk score. The HCC risk adjustment model uses beneficiary demographic information (e.g., gender, age, Medicaid status, disability status) and diagnosis codes reported in Medicare claims data from the previous year to predict payments for the current year. This risk score often is used as a proxy for a beneficiary's health status (severity of illness). It is anchored based on the average of all Medicare FFS beneficiaries' health risk scores, which is calculated using CMS's HCC risk adjustment model. The community HCC risk score is calculated for each beneficiary using claims one year prior to their initial assignment date to a MAPCP Demonstration provider or a comparison group practice unless one or more of the following criteria was met.

- New enrollee: if the beneficiary met the MAPCP Demonstration eligibility criteria⁹ during the baseline year for less than 9 months (75%), a new enrollee HCC score was calculated using only the demographic characteristics.
- Institutionalized: A beneficiary was assigned an institutional risk score if she had 2 or more nursing home evaluation and management visits within 120 days.
- ESRD: For beneficiaries with ESRD during the baseline period, the HCC community risk score was multiplied by the ESRD factor (8.937573); thus, they are automatically assigned to the highest HCC risk score quartile.

⁹ Beneficiaries did not have to reside in the MAPCP Demonstration area during the baseline period to be considered eligible. All other MAPCP Demonstration eligibility criteria are applicable.

Beneficiaries were then assigned to one of the following three HCC risk score categories created using the 2011 HCC risk scores provided in the historical Denominator file from ARC. The cut-points were determined to contain 25% of the predicted healthiest beneficiaries in the low category, 25% of the predicted sickest beneficiaries in the high category, and the remaining 50% of beneficiaries in the medium category.

- Low 0–0.48
- Medium >0.48–1.25
- High > 1.25

Health status. Two additional analytic variables were created to reflect health status during the year prior to the beneficiary being first assigned to a MAPCP Demonstration or comparison group practice.

- *Charlson index.* The Charlson comorbidity index is created using claims data from the inpatient, outpatient, physician, and home health claims files. Claims from hospice and DME providers are excluded from the calculation of this variable.
- *Comorbid conditions.* Beneficiaries will be identified as having a comorbid condition if they have one inpatient claim with the clinical condition as the principal diagnosis or have two or more physician or outpatient department (OPD) claims for an evaluation and management (E&M) service (Current Procedural Terminology [CPT] codes 99201–99429) with an appropriate principal or secondary diagnosis. The diagnoses on the OPD¹⁰ claims are captured if there is a CPT code of 99201–99429 on one of the revenue center lines. The physician and/or OPD E&M visits must occur on different days. Past studies conducted by RTI have identified the following as the most frequently occurring comorbid conditions: heart failure; coronary artery disease; other respiratory disease; diabetes without complications; diabetes with complications; essential hypertension; valve disorders; cardiomyopathy; acute and chronic renal disease; renal failure; peripheral vascular disease; lipid metabolism disorders; cardiac dysrhythmias and conduction disorders; dementias; strokes; chest pain; urinary tract infection; anemia; malaise and fatigue (including chronic fatigue syndrome); dizziness, syncope, and convulsions; disorders of joint; and hypothyroidism.

Medicare expenditures. Medicare expenditures are calculated on a beneficiary-quarter level for regression modeling and aggregated at the state-quarter level for descriptive statistics. For each beneficiary, the PBPM expenditures are estimated to be a third of their quarterly expenditures. The expenditure variables use Medicare paid amounts and include Medicare program payments only, and therefore exclude third party and beneficiary liability payments. MAPCP Demonstration payments are removed from the calculations as the budget neutrality calculation evaluates changes in all other Medicare expenditures relative to the MAPCP

¹⁰ FQHC and RHC claims are included if the CPT code is contained on the revenue center line of the OPD claim.

Demonstration payments made to participating practices. Medicare expenditures are not risk-adjusted¹¹ or price-standardized¹². Medicare claims are included in the expenditure estimates if services were provided while a beneficiary was eligible for the MAPCP Demonstration and attributed to a participating provider. Each beneficiary's eligibility fraction is used to inflate expenditure data if a beneficiary does not have a full quarter of Medicare Part A and B, FFS eligibility with Medicare as the primary payer as claims for services provided during periods of ineligibility may not be contained in the Medicare claims files we use for analysis. Of note, we do not inflate expenditure data if the beneficiary lost eligibility due to death during the quarter. Medicare PBPM expenditures are categorized as follows with detail provided in *Appendix 1-C*:

- **Total Medicare expenditures**—overall expenditure amounts from the physician, inpatient, SNF, OPD, HH, hospice, and DME Medicare claims files.
- **Acute care inpatient hospitals**, including critical access hospitals - identified using provider numbers for traditional acute care hospitals and CAHs.
- **Emergency room visits and observation stays**—facility and physician expenditures for ER visits and observation stays that do not lead to hospitalization using the OPD and physician Medicare claims files.

Utilization. Following an approach similar to that taken for Medicare expenditures, three acute care utilization measures are calculated on a beneficiary-quarter level for regression modeling and aggregated at the state-quarter level for descriptive statistics. Each beneficiary's eligibility fraction is used to inflate utilization in a manner similar to that used for the expenditure data. We focus on three utilization measures in this report:

- **All-cause hospitalizations**—count of all admissions reported in the inpatient file for that quarter. Multiple claims for acute admissions from traditional acute care and critical access hospitals that represent transfers between hospitals are combined into a single record.
- **Emergency Room Visits**—count of all ER visits and includes visits that do not lead to a hospitalization and visits that do lead to a hospitalization. ER visits that do not lead to a hospitalization are identified on the OPD and physician Medicare claims files. Emergency room visits that led to a hospitalization are identified on the inpatient claims file using revenue center codes. We limit counts of ER visits to one per day.

¹¹ We use a propensity score weight to balance beneficiary, practice, and geographic characteristics between the MAPCP Demonstration and comparison groups in the descriptive statistics and regression models.

¹² One potential behavioral change during the demonstration is a shift in the mix of providers treating the MAPCP Demonstration beneficiaries from more intensive to less intensive providers or sites of service (i.e., movement from academic medical centers to community hospitals) either through a conscious decision by the participating providers or because of improvement in health status. Price-standardization of Medicare expenditures could potentially remove the beneficial effect on lower expenditures that one might observe from this behavioral change.

- **Unplanned readmissions**—count of unplanned hospitalizations that occurred within 30 days following a live discharge. To discriminate between planned and unplanned admissions, we used a list of inpatient procedures that may be considered “potentially planned”, developed by researchers at Yale (Horwitz et al., 2011).

1.2.6 Quantitative Methods for Evaluation of Early Outcomes

The evaluation of the MAPCP Demonstration is based on comparing (regression-adjusted) changes in average payments and healthcare utilization between beneficiaries who receive services from practices participating in the MAPCP Demonstration and beneficiaries receiving care from two distinct sets of comparison practices: comparison PCMHs and comparison non-PCMHs. The evaluation goal is to quantify two main effects:

- The demonstration effect **relative to comparison PCMHs**. This is the change (increase or decrease) in outcomes between the baseline and demonstration periods among beneficiaries assigned to MAPCP Demonstration practices, compared to the change in outcomes over the same time period for beneficiaries assigned to comparison PCMH practices.
- The demonstration effect **relative to comparison non-PCMHs**. This is the change (increase or decrease) in outcomes between the baseline and demonstration periods among beneficiaries assigned to MAPCP Demonstration practices, compared to the change in outcomes over the same time period for beneficiaries assigned to non-PCMHs in the comparison group.

The demonstration effect relative to comparison PCMHs captures the impact of a number of activities undertaken after CMS joined the state initiative - those implemented by CMS (e.g., payment of MAPCP Demonstration fees, provision of Medicare data and reports), the state and its partners (e.g., CHTs if they previously did not exist), and the participating practices - but to which the comparison PCMHs were not also exposed. The demonstration effect relative to non-PCMHs in the comparison group is broader: not only does it capture the effects of the aforementioned activities but also the effects of any practice or state activities or interventions that took place before CMS joined the state initiative but to which the comparison non-PCMHs were not also exposed.

Prior to CMS joining each state’s initiative, PCMH activities were ongoing in each state. These activities involved payment redesign and medical home transformation efforts that were supported by state and private payers. Throughout this report, we will refer to all PCMH and reform activities that took place before CMS’s involvement as **pilot activities**. Preliminary regression modeling suggested that the rate of growth in Medicare expenditures may have changed as pilot activities were ongoing in several of the MAPCP Demonstration states. Thus, we felt it was prudent to develop a regression model that would allow us to measure separately (1) the effect of the pilot activities during the pre-MAPCP Demonstration period and (2) separate outcome effects during the MAPCP Demonstration for beneficiaries assigned to practices that participated in each state’s pilot versus those that did not. More detail on the modeling of these two effects is provided below.

To capture the two pilot effects, it was necessary to extend our evaluation period further back in time to cover a period before the start of each state’s pilot activities, or a period in which there were very limited efforts to transform practices or develop medical home capacity. Thus, our evaluation design extends our evaluation period back in time to January 2006 for the six outcome measures described above. As such, we distinguish between three different sub-periods that make up our entire evaluation period.

1. **Pre-demonstration baseline period.** This is the period prior to any PCMH or payment and delivery reform activities in the state.
2. **Pre-demonstration pilot period.** This is the period following the start of pilot activities in the state, but prior to the start of the MAPCP Demonstration.
3. **Demonstration period.** This is the period following the start of the MAPCP Demonstration in the state.

The start and end dates of each period and for each of the MAPCP Demonstration states are listed in *Table 1-4* below. In some states (e.g., Vermont, Michigan, Minnesota), practices entered the state pilot or MAPCP Demonstration on a rolling basis. Due to this “rolling entry” of practices, the start dates of the pilot and demonstration periods might not be the same for all MAPCP Demonstration beneficiaries in those states. *Table 1-4* therefore shows the *earliest possible start dates* for these periods. More detail on each state’s pilot activities and our ability to model both pilot effects is provided after the table.

Table 1-4
Baseline, pilot and demonstration period, by state

State	Pre-demonstration Baseline Period	Pre-demonstration Pilot Period	Demonstration Period
New York	Jan. 2006–Dec. 2009	Jan. 2010–Jun. 2011	Jul. 2011–Jun. 2012
Rhode Island	Jan. 2006–Sep. 2008	Oct. 2008–Jun. 2011	Jul. 2011–Jun. 2012
Vermont	Jan. 2006–Jun. 2008	Jul. 2008–Jun. 2011	Jul. 2011–Jun. 2012
North Carolina ¹	Jan. 2006–Sep. 2011	n/a	Oct. 2011–Sep. 2012
Minnesota	Jan. 2006–Jun. 2010	Jul. 2010–Sep. 2011	Oct. 2011–Sep. 2012
Maine	Jan. 2006–Dec. 2009	Jan. 2010–Dec. 2011	Jan–Dec. 2012
Michigan ²	Jan. 2006–Dec. 2011	n/a	Jan–Dec. 2012
Pennsylvania ³	Jan. 2006–Apr. 2008	May 2008–Dec. 2011	Jan–Dec. 2012

¹ In North Carolina, all MAPCP Demonstration practices participated in pilot activities prior to the start of our study period (January 1, 2006). Hence, we could not separate the period before the MAPCP Demonstration into distinct baseline and pilot periods.

² In Michigan, we did not have sufficient data on pilot participation status of practices to separately identify a baseline and pilot period.

³ In Pennsylvania, pilot activities were rolled out in three phases, starting in May 2008 and June 2009 in the Southeast region, and starting in October 2009 in the Northeast region.

Vermont. Vermont Blueprint for Health PCMH payments to practices located in the St. Johnsbury Health Service Area (HSA) began in July 2008. The Blueprint for Health's PCMH initiative was expanded to the Burlington HSA in November 2008, the Barre HSA in January 2010, and the Bennington HSA in November 2010. Of note, the state of Vermont made PCMH payments to practices for their Medicare FFS patients during this pilot period; CMS assumed responsibility for making these payments when Medicare joined the initiative on July 1, 2011. Because new practices entered the Blueprint for Health after the start of the MAPCP Demonstration, we are able to model (1) the effect of the pilot activities during the pre-MAPCP Demonstration period and (2) separate outcome effects during the MAPCP Demonstration for beneficiaries assigned to practices that participated in each state's pilot versus those that did not.

Rhode Island. The Rhode Island Chronic Care Sustainability initiative (CSI) pilot program began in October 2008 with five practices. In April 2010, 10 additional practices joined the pilot. During the first year of the MAPCP Demonstration, the same practices that had participated in the CSI pilot participated in the MAPCP Demonstration therefore we are able to estimate the effect of the pilot activities during the pre-MAPCP Demonstration period but are unable to estimate separate outcome effects during the MAPCP Demonstration.

New York. The New York State Adirondack (ADK) Medical Home Demonstration pilot began January 1, 2010; however, due to the complexity of generating accurate patient-practice-payer lists during periods of open enrollment, as well as revising payment systems among multiple payers, initial payments were not dispersed until June 2010 retroactive to January 1, 2010. During the first year of the MAPCP Demonstration, the same practices that had participated in the ADK Demonstration pilot participated in the MAPCP Demonstration therefore we are able to estimate the effect of the pilot activities during the pre-MAPCP Demonstration period but are unable to estimate separate outcome effects during the MAPCP Demonstration.

North Carolina. North Carolina's community-based, primary care case management program, Community Care of North Carolina's (CCNC) activities for Medicaid and Medicare/Medicaid dual eligible beneficiaries began as early as April 1, 2003, thus, there may be some spillover effects to the Medicare FFS population. No new practices joined the MAPCP Demonstration. Due to practical limitations of extending the baseline period any further beyond 2006, we are unable to estimate either pilot effect.

Michigan. Blue Cross Blue Shield of Michigan (BCBSM) began PCMH pilot activities within its Physician Group Incentive Program (PGIP) with fees being paid to PCMH pilot practices for commercially insured patients in July 2009. For this report, however, we did not have sufficient data on participating pilot practices to identify separate baseline and pilot periods for beneficiaries assigned to a MAPCP Demonstration practice. Thus, we are unable to estimate either pilot effect.

Maine. The Maine PCMH pilot began on January 1, 2010 with all practices that participated in the PCMH pilot also participating in the first year of the MAPCP Demonstration therefore we are able to estimate the effect of the pilot activities during the pre-MAPCP Demonstration period but are unable to estimate separate outcome effects during the MAPCP Demonstration.

Minnesota. The Minnesota Health Care Homes (HCH) initiative began on July 1, 2010. Because new practices entered the HCH initiative after the start of the MAPCP Demonstration, we are able to model (1) the effect of the pilot activities during the pre-MAPCP Demonstration period and (2) separate outcome effects during the MAPCP Demonstration for beneficiaries assigned to practices that participated in each state's pilot versus those that did not.

Pennsylvania. Phase I of the Pennsylvania Chronic Care Initiative (CCI) pilot started in the Northeast region in October 2009. In the Southeast region, one set of practices joined Phase I of CCI pilot for three years starting in May 2008 and the other set of practices joined the pilot for 18 months starting in June 2009. During the first year of the MAPCP Demonstration, the same practices that had participated in the Phase I CCI pilot participated in the MAPCP Demonstration therefore we are able to estimate the effect of the pilot activities during the pre-MAPCP Demonstration period but are unable to estimate separate outcome effects during the MAPCP Demonstration.

The statistical approach for the quantitative data analysis consists of two components: (1) descriptive statistics and (2) estimation of a series of regression models. The regression models form the basis for identifying the two demonstration effects: one relative to beneficiaries assigned to the comparison PCMHs and the second relative to beneficiaries assigned to the comparison non-PCMHs. For each payment and utilization outcome, the model is therefore estimated twice.

Descriptive Statistics. We report two sets of descriptive statistics. First, we report demographic and health status characteristics of Medicare FFS beneficiaries that participated in each state's initiative during the first year of the MAPCP Demonstration. We aggregate the characteristics to the state level reporting either the mean attribute (e.g., mean age) or percentage of MAPCP Demonstration beneficiaries with the attribute (e.g., percentage white). These statistics are calculated using each beneficiary's eligibility fraction during the baseline period as a weight to produce weighted means and percentages.

Second, we report weighted means for each of the six outcomes separately for (1) beneficiaries assigned to MAPCP Demonstration practices, (2) beneficiaries assigned to PCMHs in the comparison group, and (3) beneficiaries assigned to non-PCMHs in the comparison group. The (weighted) means represent the average quarterly outcomes calculated for the pre-demonstration baseline period, pre-demonstration pilot period, and the first year of the MAPCP Demonstration. The weights used to calculate the means are the product of the eligibility fraction and the propensity score weight estimated for comparison group beneficiaries. In effect, the weights adjust the means for differences in eligibility for the MAPCP Demonstration and observable confounding factors at the beneficiary, practice, and geographic level (e.g., age, HCC risk score, practice type, etc.). Medicare expenditures are reported as average PBPM expenditures and the utilization measures are expressed as a rate per 1,000 beneficiaries.

Regression modeling. The second component of the analysis is estimation of the regression models. As mentioned above, the models are estimated using two distinct comparison groups: beneficiaries assigned to comparison PCMHs and beneficiaries assigned to comparison

non-PCMHs. We start by describing the linear¹³ version of the regression model that is used for quarterly Medicare expenditures (alternative specifications, including an analogous count regression model for the utilization outcomes, is discussed after). The model is written as follows.

$$Y_{ijt} = \alpha_0 + \alpha_1 I_{ij} + \beta_{0,t} + \beta_1 \text{Pilot}_{ijt} + \delta X_{ij} + \gamma_1 \text{Fee}_{ijt} * I_{t=dq_1} + \gamma_2 \text{Fee}_{ijt} * I_{t=dq_2} + \dots + \gamma_s \text{Fee}_{ijt} * I_{t=dq_s} + \varepsilon_{ijt}. \quad (1.1)$$

In *Equation 1.1*, we define the following variables.

- Y_{ijt} - the outcome in quarter t for beneficiary i assigned to practice j
- I_{ij} ($=0,1$) - a group indicator equal to 1 if the beneficiary is assigned to a MAPCP Demonstration practice, and 0 otherwise
- Pilot_{ijt} ($=0,1$) - an indicator that switches from 0 to 1 in the quarter that the practice to which the beneficiary was assigned first started participating in the state's PCMH pilot, and remains equal to 1 in all subsequent quarters. For beneficiaries assigned to practices in the comparison group, $\text{Pilot}_{ijt} = 0$ in each quarter. In North Carolina, we currently do not include Pilot_{ijt} in the regression model, because all MAPCP Demonstration practices had started participating in pilot activities before the start of our evaluation period (January 1, 2006).¹⁴ In Michigan, we currently do not use the Pilot_{ijt} indicator in the model.
- Fee_{ijt} ($=0,1$) - an indicator that switches from 0 to 1 in the first quarter that Medicare fees were paid for the beneficiary, and remains at 1 thereafter. Because of the rolling entry of beneficiaries into the MAPCP Demonstration, Fee_{ijt} switches from 0 to 1 at different points in time. For example, for a beneficiary who was attributed to a MAPCP Demonstration practice during the first demonstration quarter, $\text{Fee}_{ijt} = 1$ for $t \geq dq_1$. For a beneficiary who was attributed during the second demonstration quarter, $\text{Fee}_{ijt} = 1$ for $t \geq dq_2$, etc. In Minnesota, very few fees were paid for beneficiaries in the intervention group. In this state, the values of Fee_{ijt} are therefore derived from the date of assignment to a MAPCP Demonstration practice. $\text{Fee}_{ijt} = 0$ in the comparison group.
- $I_{t=dq_1}, I_{t=dq_2}, \dots, I_{t=dq_s}$ - indicators for the 1st through 4th demonstration quarters. The first quarter in our evaluation period, January – March, 2006, is counted as $t = 1$. For the cohort 1 states (New York, Rhode Island, Vermont), there are 22 baseline quarters, so that $dq_1 = 23$, $dq_2 = 24$, etc. For the cohort 2 states (North Carolina, Minnesota), there are 23 baseline quarters and $dq_1 = 24$, $dq_2 = 25$, etc. For the

¹³ We use the term linear to refer to linearity in parameters and not to linearity of the time trend in outcomes.

¹⁴ Hence, I_{ij} and Pilot_{ijt} are collinear and cannot be simultaneously included as covariates in the model.

cohort 3 states (Maine, Michigan, Pennsylvania), there are 24 baseline quarters and $dq_1 = 25$, $dq_2 = 26$, etc. The demonstration quarter indicators are interacted with the indicator for MAPCP Demonstration fee payment, Fee_{ijt} .

- X_{ij} - a vector of practice-, region-, and beneficiary-level covariates described above.
- ε_{ijt} - a residual term that represents unobserved heterogeneity in the outcome unexplained by any of the other covariates.

The key coefficients of interest measure the following:

- α_1 - the difference in the quarterly average outcome, controlling for other covariates, between the MAPCP Demonstration and comparison groups prior to the start of state initiative activities or the MAPCP Demonstration.
- $\beta_{0,t}$ - the quarterly effect for (calendar) quarter t . We therefore also refer to **Equation 1.1** as a “quarterly fixed effects” (QFE) model. The quarterly effects track performance (e.g., total Medicare expenditures) for the comparison group and can accommodate arbitrary trends (e.g., linear, quadratic) in the outcome. They also provide a benchmark for MAPCP Demonstration impacts discussed below.
- β_1 - the pilot effect. This is the amount by which the outcome difference between beneficiaries assigned to MAPCP Demonstration practices that participated in the pilot and beneficiaries assigned to comparison group practices increased ($\beta_1 > 0$) or decreased ($\beta_1 < 0$) between the baseline and pilot periods.
- $\gamma_1, \gamma_2, \dots, \gamma_4$ - the demonstration effects during the first 4 quarters of the MAPCP Demonstration.

The $\gamma_1, \gamma_2, \dots, \gamma_4$ coefficients can be interpreted as follows. Consider first a beneficiary in the comparison group (PCMH or non-PCMH), so that $I_{ij} = 0$ and $Pilot_{ijt} = 0$. If $t = b$ denotes a particular baseline quarter and $t = dq_1$ is the first demonstration quarter, the predicted change in average outcome between these two quarters (setting $\varepsilon_{ijt} = 0$ in **Equation 1.1**) is

$$\Delta_{CG} = (\alpha_0 + \beta_{0,dq_1} + \delta X_{ij}) - (\alpha_0 + \beta_{0,b} + \delta X_{ij}) = \beta_{0,dq_1} - \beta_{0,b}.$$

Consider also a beneficiary assigned to a MAPCP Demonstration practice in the first demonstration quarter ($t = dq_1$) and suppose that the practice participated in pilot activities during quarter $t = b$. For this beneficiary, $I_{ij} = 1$, $Pilot_{ij,b} = Pilot_{ij,dq_1} = 1$ and $Fee_{ij,dq_1} = 1$ and the predicted change in average outcome between the two quarters is

$$\begin{aligned} \Delta_{MAPCP} &= (\alpha_0 + \alpha_1 + \beta_{0,dq_1} + \beta_1 + \delta X_{ij} + \gamma_1) - (\alpha_0 + \alpha_1 + \beta_{0,b} + \beta_1 + \delta X_{ij}) \\ &= (\beta_{0,dq_1} + \beta_{0,b}) + \gamma_1. \end{aligned}$$

Comparing the change or “trend” in predicted average outcome between the beneficiary assigned to the MAPCP Demonstration practice and the beneficiary assigned to a comparison group’s practice, we can see that $\Delta_{\text{MAPCP}} - \Delta_{\text{CG}} = (\beta_{0,\text{dq}_1} + \beta_{0,\text{b}}) + \gamma_1 - (\beta_{0,\text{dq}_1} + \beta_{0,\text{b}}) = \gamma_1$. Hence, γ_1 represents the (regression-adjusted) between-group difference (i.e., MAPCP Demonstration vs. comparison) of the difference in outcome between the pre-demonstration quarter ($t = \text{b}$) and the first quarter of the demonstration ($t = \text{dq}_1$). For this reason, γ_1 is called a “difference-in-differences” (D-in-D) parameter.¹⁵ For example, suppose that between a given baseline quarter and the first quarter of the demonstration the (regression-adjusted) outcome difference is +\$5 for beneficiaries assigned to MAPCP Demonstration practices (and for whom fees were paid in the first demonstration quarter), and +\$10 for beneficiaries assigned to comparison PCMHs. The D-in-D coefficient for the first demonstration quarter is then $\gamma_1 = \$5 - \$10 = -\$5$. The negative sign indicates that the growth in the outcome was smaller for beneficiaries assigned to MAPCP Demonstration practices than for the comparison group. We will generally interpret this as a beneficial, positive effect of the MAPCP Demonstration.

Estimates of $\gamma_1, \gamma_2, \dots, \gamma_4$ show whether the MAPCP Demonstration was associated with slower outcome growth and whether the impact of the demonstration changed over time. It is important to note, however, that the estimates apply to different subgroups of MAPCP Demonstration beneficiaries. The interaction term $\text{Fee}_{\text{ijt}} * I_{t=\text{dq}_1}$ in *Equation 1.1* can only ever be non-zero for beneficiaries who were assigned to a MAPCP Demonstration practice during the first quarter of the demonstration. For the purpose of estimating γ_1 , those beneficiaries then form the intervention group. Similarly, the interaction term $\text{Fee}_{\text{ijt}} * I_{t=\text{dq}_2}$ can only ever be non-zero for beneficiaries who were assigned to a MAPCP Demonstration practice during the first or second quarter of the demonstration. This group of beneficiaries is then the intervention group for estimating γ_2 , etc. To summarize, estimates of the γ coefficients in *Equation 1.1* represent intervention effects for each of the demonstration quarters, but are based on a changing composition of the intervention group (due to rolling entry and exit).

The D-in-D estimates for total Medicare expenditures are used to calculate the estimated “total difference” in expenditures between beneficiaries assigned to MAPCP Demonstration practices and those assigned to comparison practices. These total differences are calculated by multiplying the D-in-D estimate in a given quarter by the number of eligible MAPCP Demonstration beneficiaries in that quarter. We also calculate the cumulative D-in-D estimate or cumulative difference, which is simply the total difference aggregated across all demonstration quarters. A positive cumulative D-in-D number for total Medicare expenditures indicates that payments increased faster for beneficiaries assigned to MAPCP Demonstration practices than for beneficiaries in the comparison group. This is considered evidence for a detrimental effect of the MAPCP Demonstration on expenditure growth. Negative numbers indicate that the

¹⁵ This interpretation of the coefficient is independent of the choice of pre-demonstration quarter $t = \text{b}$, and it continues to hold if the MAPCP Demonstration practice did not participate in pilot activities during quarter $t = \text{b}$ (so that $\text{Pilot}_{\text{ij},\text{b}} = 0$).

demonstration was associated with lower expenditure growth and suggest that the MAPCP Demonstration is yielding gross cost savings.¹⁶

Demonstration effect differences between pilot and non-pilot practices. The specification in **Equation 1.1** motivates a number of alternative models that are used in the analysis. In Vermont and Minnesota, some but not all of the Year 1 MAPCP Demonstration practices participated in PCMH pilot activities. In these two states, we can therefore distinguish between practices that participated in state PCMH pilot activities occurring before the start of the MAPCP Demonstration (a ‘MAPCP Demonstration pilot’ group) and those MAPCP Demonstration practices that did not participate in state PCMH pilot activities prior to the start of the MAPCP Demonstration (a ‘MAPCP Demonstration non-pilot’ group). Because the duration of exposure to PCMH activities between these two groups varies, the effect of the demonstration on beneficiaries assigned to practices in each group might be different. To accommodate this situation, the model in **Equation 1.1** is extended by including the interactions $Pilot_{ijt} * Fee_{ijt} * I_{dq_s}$ ($s = 1, 2, 3, 4$) on the right-hand side. This allows us to estimate separate demonstration effects for beneficiaries assigned to MAPCP Demonstration practices that did and did not participate in pilot activities.

Second, the linear version of the model in **Equation 1.1** is less appropriate for the quarterly measures of utilization, which are count variables. For these outcomes, we estimate a negative binomial model and use the estimated coefficients to calculate the demonstration effects during each quarter of the demonstration.¹⁷ Specifically, the demonstration effects for the first 4 quarters are calculated as (Puhani, 2012):

$$\begin{aligned}
 \tau_1 &= \exp(\alpha_0 + \alpha_1 + \beta_{0,dq_1} + \beta_1 + \delta X_{ij}) * [\exp(\gamma_1) - 1], \\
 \tau_2 &= \exp(\alpha_0 + \alpha_1 + \beta_{0,dq_2} + \beta_1 + \delta X_{ij}) * [\exp(\gamma_2) - 1], \\
 \tau_3 &= \exp(\alpha_0 + \alpha_1 + \beta_{0,dq_3} + \beta_1 + \delta X_{ij}) * [\exp(\gamma_3) - 1], \\
 \tau_4 &= \exp(\alpha_0 + \alpha_1 + \beta_{0,dq_4} + \beta_1 + \delta X_{ij}) * [\exp(\gamma_4) - 1].
 \end{aligned}
 \tag{1.2}$$

Unlike the linear version of the QFE model, **Equation 1.2** shows that the demonstration effects vary with the value of X_{ij} . We estimate $\tau_1, \tau_2, \tau_3, \tau_4$ by setting X_{ij} equal to its sample mean in the intervention group. Also, because of the non-linearity of the negative binomial specification, the coefficients $\tau_1, \tau_2, \tau_3, \tau_4$ no longer have a difference-in-differences interpretation. Instead, they measure in each demonstration quarter the increase or decrease in average utilization as a result of the demonstration among beneficiaries assigned to MAPCP

¹⁶ Gross savings do not account for the payment of MAPCP Demonstration fees. Even if there are gross savings, these may not be sufficient to cover the amount of fees paid out (in which case the demonstration is not budget neutral).

¹⁷ For the negative binomial models, the linear combination of covariates on the right-hand side of Equation 1.1 – excluding the error term ϵ_{ijt} – is the “linear index.” The predicted outcome, conditional on the covariates, is $\exp(\text{linear index})$, where $\exp(\cdot)$ is the exponential function.

Demonstration practices.¹⁸ The delta method, implemented in Stata with the command ‘nlcom’, was used to calculate standard errors of the estimates. The estimated demonstration effects and standard errors are multiplied by 1,000 to express them in rates per 1,000 Medicare FFS beneficiaries or rates per 1,000 live discharges (e.g., for 30-day unplanned readmissions).

Cohort 1 analysis. As noted before, rolling entry of practices and beneficiaries into the MAPCP Demonstration effectively changes the composition of the intervention group over the course of the demonstration. The estimate of γ_1 , the effect in the first demonstration quarter, is based on comparing beneficiaries who were attributed to a MAPCP Demonstration practice in the first demonstration quarter to all other beneficiaries (this includes those in the comparison group, and beneficiaries who were attributed to a MAPCP Demonstration practice in the second demonstration quarter or after). The estimate of γ_2 is based on comparing beneficiaries who were attributed to a MAPCP Demonstration practice in the first or second demonstration quarter to all other beneficiaries. As such, the estimate of γ_2 can be considered a mixture of two ‘exposure’ effects: (1) the effect of two quarters of demonstration exposure for beneficiaries attributed to a MAPCP Demonstration practice in the first demonstration quarter; and (2) the effect of one quarter of demonstration exposure for beneficiaries attributed to a MAPCP Demonstration practice in the second demonstration quarter. Similarly, the estimates of γ_3 and γ_4 are mixtures of three and four different exposure effects, respectively.

Because beneficiaries assigned during the first quarter of the demonstration have the longest exposure to PCMH activities and the practices themselves have longer PCMH implementation time, we estimate the model for the early entrants, or a “cohort 1” sample of beneficiaries only, to allow us to evaluate whether or not we are observing any differential demonstration effects between early and late entrants into the MAPCP Demonstration. Restricting the sample to cohort 1 effectively eliminates rolling entry (though natural attrition, for example due to death or moving out of the state, still remains). As a result, the D-in-D coefficients γ_1 , γ_2 , γ_3 , and γ_4 are based on a more stable intervention group that participated in the MAPCP Demonstration from the start. The D-in-D coefficients then no longer have the mixture interpretation and can be seen as the ‘pure’ effects of one, two, three or four quarters of demonstration exposure.

Estimation. The model in *Equation 1.1* is estimated using weighted least squares. The negative binomial analogous models for all-cause, acute-care hospitalizations, ER visits, and 30-day unplanned readmissions are estimated using weighted maximum likelihood. Standard errors of the coefficient estimates are adjusted for clustering at the practice level (Cameron & Trivedi, 2005). Construction of the estimation weights was described in *Section 1.2.3*.

Reporting. In *Chapters 3-10*, we tabulate for each state the quarterly demonstration effects and their standard errors for the first year of the MAPCP Demonstration. For total Medicare expenditures, expenditures for short-stay, acute care hospitalizations, and ER expenditures, the estimated demonstration effects are the estimates of γ_1 , γ_2 , γ_3 , and γ_4 from *Equation 1.1*. For all-cause, acute-care hospitalizations, ER visits, and 30-day unplanned

¹⁸ This is the more general way to define an intervention effect (see Puhani, 2012). If the QFE model is linear, this definition becomes equivalent to the difference-in-differences interpretation.

readmissions, the demonstration effects are estimated using *Equation 1.2*, where X_{ij} is evaluated at the sample mean in the intervention group. These estimates are multiplied by 1,000 to express them as a utilization rate per 1,000 Medicare FFS beneficiaries. For all outcomes, we also report the weighted average demonstration effect across all four quarters of the first demonstration year. The average is calculated by weighting the quarterly demonstration effects by the number of demonstration-eligible beneficiaries in each quarter. Cohort 1 estimates for each state and each outcome are reported in *Appendix 3 through 10*.

1.2.7 Methods for Evaluating Budget Neutrality

In this section, we describe RTI’s methodology for determining whether Medicare’s participation in the state initiative is *budget neutral* (BN). The budget neutrality analysis is limited to Medicare beneficiaries,¹⁹ and is conducted for each state separately. Budget neutrality will be determined annually for the three MAPCP Demonstration years. In deciding whether a state’s intervention is budget neutral to Medicare, we focus on the demonstration effect relative to comparison group PCMHs. This effect isolates the response of intervention PCMHs that receive payments from Medicare to manage their beneficiaries and captures other features of the state initiative implemented after CMS joined each state initiative. The reference group for this analysis is comprised solely of Medicare FFS beneficiaries assigned to PCMHs in the comparison group.

Gross Savings. Gross savings are estimated from the regression model in *Equation 1.1 (Section 1.2.6)*. The four γ coefficients ($\gamma_1, \gamma_2, \gamma_3, \gamma_4$) are used to calculate quarter-specific estimates of average gross savings per MAPCP Demonstration beneficiary in that quarter relative to beneficiaries assigned to the PCMH comparison group. The weighted sum of the four quarterly γ coefficients, weighted by the respective number of fee-bearing beneficiaries, gives an estimate of average gross savings or potentially “negative” savings per eligible beneficiary in each state. For Minnesota and Vermont, gross savings at the state level are the sum of gross savings of the pilot and non-pilot MAPCP Demonstration practices. A **negative** estimate of γ indicates that the MAPCP Demonstration was associated with a reduction in the Medicare Part A and B expenditures trend (relative to the PCMH comparison group), which translates to **positive** gross savings. Conversely, a **positive** estimate of γ indicates that the MAPCP Demonstration was associated with an increase in the Medicare Part A and B expenditures trend (relative to the comparison group), which translates to **negative** gross savings. Hence, gross savings are calculated by simply switching the sign of the weighted average of the four quarterly γ coefficients.

MAPCP Demonstration Payments. In the MAPCP Demonstration, CMS is making monthly MAPCP Demonstration payments to PCMHs for assigned demonstration beneficiaries. In some states, CMS also is making MAPCP Demonstration payments to CHTs to support the practices. Each state determined the dollar amounts of the payments that would be made to practices and these other entities. Detailed information on MAPCP Demonstration payments is found in *Tables 2-4 and 2-5*. The determination of budget neutrality is inclusive of all payments for PCMH services made by CMS to MAPCP Demonstration practices, CHTs, and any other

¹⁹ It is possible that savings are more or less across all demonstration beneficiaries, including commercial and Medicaid beneficiaries, but our focus will be exclusively from a federal Medicare perspective.

entities for beneficiaries with at least 3 months eligibility, to be consistent with beneficiaries included in the regression models. Monthly MAPCP Demonstration payments are aggregated to the quarter level from Medicare claims data that contain the official record of payments.

Net Savings. Annual budget neutrality, or *net savings*, NS_{year} , is defined in *Equation 1.3* as the non-negative difference between *gross savings* (GS_{year}) for a given year minus total Medicare MAPCP Demonstration payments, TF_{year} , for the same period. Annual totals involve summing four quarterly estimates.

$$NS_{\text{year}} = GS_{\text{year}} - TF_{\text{year}} = \sum_{\text{qtr}}^4 GS_{\text{qtr}} - \sum_{\text{qtr}}^4 TF_{\text{qtr}} \quad (1.3)$$

Net savings are negative if the MAPCP Demonstration payments exceed gross savings, or if gross savings themselves are negative (i.e., the demonstration is associated with increased Medicare Part A and B expenditures). If net savings are non-negative, the MAPCP Demonstration is said to be **budget neutral**.

Statistical Test of Budget Neutrality. In the MAPCP Demonstration, states and PCMHs are not at financial risk of having to return MAPCP Demonstration payments if payments exceed gross savings estimates. Nevertheless, the regression method does allow statistical testing of hypotheses about demonstration effectiveness and the presence of gross savings. In this report, we focus on two such tests:

1. A test of the individual demonstration quarter coefficients, using a 2-sided 90% confidence interval. This test answers the question: **Did the MAPCP Demonstration intervention lower the level of Medicare expenditures in one or more demonstration quarters during the first year?**
2. A test of gross savings, using a 2-sided 90% confidence interval. Total gross savings are calculated by weighting the four quarterly estimates of per-beneficiary gross savings by the number of fee-bearing beneficiaries assigned to MAPCP Demonstration practices in each quarter. For the demonstration to be budget neutral in a statistical (as compared with an absolute) sense, the lower limit of the confidence interval for total gross savings must exceed the total amount of MAPCP Demonstration payments. This test answers the question: **Did gross savings more than cover the total MAPCP Demonstration payments?**

1.3 Pre-demonstration Baseline Trends in Outcomes

As discussed earlier, pilot activities took place in each of the states prior to the start of the MAPCP Demonstration. These activities included PCMH transformation and payment redesign efforts that were supported by the state and some private payers, and that may have impacted the outcomes that are considered in this evaluation. In this section, we investigate whether the baseline period prior to the start of PCMH pilot activities qualifies as a “true” baseline, in the sense that during this period the outcome trends for beneficiaries assigned to MAPCP Demonstration practices and those assigned to comparison group practices were similar. The model in *Equation 1.1* assumes that, except for an intercept difference α_1 , the outcomes for beneficiaries assigned to MAPCP Demonstration practices and beneficiaries assigned to PCMHs or non-PCMHs in the comparison groups follow a similar growth trend during the pre-

demonstration baseline period, as measured by the $\beta_{0,t}$ coefficients. This assumption is the basis for identifying the demonstration effects as the D-in-D coefficients $\gamma_1, \gamma_2, \gamma_3,$ and γ_4 . Because we have a large number of baseline quarters (see **Table 1-3**), it is possible to test whether baseline outcome trends were, in fact, similar across groups. One option for doing so is to expand the model in **Equation 1.1** by including a set of interactions between I_{ij} (the MAPCP Demonstration indicator) and the indicators for the baseline quarters on the right-hand side of the model. Statistically significant interaction coefficients would indicate whether the outcome difference between the MAPCP Demonstration and comparison groups increased or decreased in particular baseline quarters. However, making a judgment about a trend based on a large number of interaction coefficients would be impractical, because the many sequences of significant and insignificant coefficients that could arise would be difficult to interpret.²⁰

As an alternative, simpler approach to answering this question, we use a model with a linear trend during the pre-demonstration baseline period. This trend can be different for beneficiaries assigned to MAPCP Demonstration practices relative to beneficiaries assigned to each of the comparison groups. Specifically, the model for the expenditure outcomes may be written as follows.

$$Y_{ijt} = \alpha_0 + \alpha_1 I_{ij} + \delta X_{ij} + \theta * t + \lambda * I_{ij} * t + \varepsilon_{ijt} \quad (1.4)$$

In **Equation 1.4**, Y_{ijt} , I_{ij} , X_{ij} and ε_{ijt} are defined as before. The linear time trend in each of the comparison groups is $\theta * t$, whereas for beneficiaries assigned to MAPCP Demonstration practices ($I_{ij} = 1$) it is $(\theta + \lambda) * t$. Hence, λ measures the difference in linear trends and the t-statistic for this coefficient can be used to test the null hypothesis of equal trends ($\lambda = 0$). In other words, rejecting the null hypothesis would suggest that the assumption of equal trends underlying our outcome models is not met. While the actual outcome trends will not be exactly linear, **Equation 1.4** is a useful approximation, especially for investigating whether the baseline outcome trends for the MAPCP Demonstration and each of the comparison groups are similar or not.

For the rates of all-cause, acute-care hospitalizations and ER visits, we use a negative binomial analogue of **Equation 1.4**. The model coefficients of the trend variable t and the interaction $I_{ij} * t$ no longer have the same interpretation. For these outcomes, we instead consider incidence rate ratios (IRRs). The IRR is a ratio of two means. It measures the relative difference in means if a covariate is changed. For example, if the IRR associated with t is 1.03, the average quarter-to-quarter change in outcome during the pre-demonstration baseline period is 3%. If the IRR associated with $I_{ij} * t$ is 1.01, the average quarter-to-quarter change in outcome is 1% larger for beneficiaries assigned to MAPCP Demonstration practices, relative to the comparison group.²¹ Conversely, if the IRR associated with $I_{ij} * t$ is 1, the baseline utilization trends in the

²⁰ For example, suppose that there are 9 pre-demonstration baseline quarters in the state, and the interactions coefficients for quarters 2, 5, and 8 are statistically significant. From such a pattern, it would be difficult to conclude whether outcome trends during the baseline period were similar or not.

²¹ For beneficiaries assigned to MAPCP Demonstration practices, the average change in quarterly utilization during the baseline period is then $(1.03 * 1.01 - 1) * 100\% = 4.03\%$.

MAPCP Demonstration and the comparison groups are the same (in percentage terms). A simple t-test can be used to test whether the IRR is significantly different from 1 or not.

The parameters of *Equation 1.4* are estimated using weighted least squares (for the expenditure outcomes) and weighted maximum likelihood (in the negative binomial models for utilization). As before, the weights are a function of the eligibility fraction and the comparison group’s propensity scores. For the Medicare expenditure outcomes, we report estimates and standard errors of the difference between the trend in the MAPCP Demonstration and each of the comparison groups (λ). For the utilization outcomes, we report estimates and standard errors of the IRRs associated with I_{ij} *t. In this analysis, we are directly comparing trends in outcomes between the MAPCP Demonstration group relative to the two comparison groups, PCMHs and non-PCMHs, for the pre-demonstration baseline period relative to the pre-demonstration pilot period as defined in *Table 1-4*. We report the results separately by state and each comparison group.

Vermont. Estimates of the baseline trend differences for total Medicare expenditures and Medicare expenditures for short-stay, acute-care hospitalizations and ER visits are given in *Table 1-5*. Estimates of the pre-demonstration baseline trend differences for the numbers of all-cause, acute-care hospitalizations and ER visits are given in *Table 1-6*. Relative to comparison PCMHs, all expenditure outcomes increased faster for beneficiaries assigned to MAPCP Demonstration practices, with trend differences of \$10 PBPM per quarter for total expenditures, \$6 PBPM per quarter for short-stay, acute-care hospital expenditures, and \$0.28 PBPM per quarter for ER expenditures. Relative to comparison non-PCMHs, the trend in expenditures to short-stay, acute-care hospitals increased slightly faster (\$2.30 PBPM per quarter) for beneficiaries assigned to MAPCP Demonstration practices. Relative to comparison PCMHs, the number of all-cause, acute-care hospitalizations during the baseline period increased faster for beneficiaries assigned to MAPCP Demonstration practices (IRR = 1.03). Relative to comparison non-PCMHs, the trend in the number of ER visits was larger among beneficiaries assigned to MAPCP Demonstration practices, but the trend difference (1%, IRR = 1.01) was small.

Table 1-5
Vermont: Differences in average quarterly PBPM Medicare expenditures between pre-demonstration baseline period and pre-demonstration pilot period; Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs versus beneficiaries assigned to comparison group practices

Parameter Estimate	MAPCP vs. CG PCMH			MAPCP vs. CG non-PCMH		
	Total (\$)	Acute care (\$)	ER (\$)	Total (\$)	Acute care (\$)	ER (\$)
MAPCP – CG trend difference	10.43* (1.79)	6.11* (1.37)	0.28* (0.08)	3.00 (2.19)	2.30* (1.24)	0.14 (0.10)

NOTES: MAPCP = multi-payer advanced primary care practice; CG = comparison group; PCMH = patient-centered medical home; ER = emergency room; PBPM = per beneficiary per month. FFS = fee for service. Baseline is the period January 2006–June 2008. The trend (slope) is the quarter-to-quarter change in PBPM Medicare expenditures. Standard errors are given in parentheses. * p < 0.10.

Table 1-6
Vermont: Differences in average quarterly utilization between pre-demonstration baseline period and pre-demonstration pilot period; Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs versus beneficiaries assigned to comparison group practices

Parameter Estimate	MAPCP vs. CG PCMH		MAPCP vs. CG non-PCMH	
	All-cause hospitalizations	ER visits	All-cause hospitalizations	ER visits
MAPCP – CG trend difference	1.03* (0.01)	1.01 (0.01)	1.01 (0.01)	1.01* (0.00)

NOTES: MAPCP = multi-payer advanced primary care practice; CG = comparison group; PCMH = patient-centered medical home; ER = emergency room; FFS = fee for service. Baseline is the period January 2006–June 2008. The table contains incidence rate ratios from negative binomial regression models. The trend is the quarter-to-quarter relative change in utilization. Standard errors are given in parentheses. * p<0.10.

New York. Estimates of the baseline trend differences for total Medicare expenditures and Medicare expenditures for short-stay, acute-care hospitalizations and ER visits are given in *Table 1-7*. Estimates of the pre-demonstration baseline trend differences for the numbers of all-cause, acute-care hospitalizations and ER visits are given in *Table 1-8*. For the expenditure outcomes, none of the estimates in the row ‘MAPCP – CG trend difference’ were significant, indicating that beneficiaries assigned to MAPCP Demonstration practices and beneficiaries assigned to both sets of comparison practices (PCMH and non-PCMH) experienced similar expenditure trends. For both utilization measures, none of the estimates in the row ‘MAPCP – CG trend difference’ were significant, indicating that for these two utilization measures, beneficiaries assigned to MAPCP Demonstration practices and beneficiaries assigned to both comparison practices (PCMH and non-PCMH) experienced similar baseline trends.

Table 1-7
New York: Differences in average PBPM Medicare expenditures between pre-demonstration baseline period and pre-demonstration pilot period; Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs versus beneficiaries assigned to comparison group practices

Parameter Estimate	MAPCP vs. CG PCMH			MAPCP vs. non-PCMH		
	Total (\$)	Acute care (\$)	ER (\$)	Total (\$)	Acute care (\$)	ER (\$)
MAPCP – CG trend difference	0.16 (0.92)	1.08 (0.68)	0.10 (0.06)	-0.16 (1.18)	0.93 (0.80)	0.07 (0.07)

NOTES: MAPCP = multi-payer advanced primary care practice; CG = comparison group; PCMH = patient-centered medical home; ER = emergency room; PBPM = per beneficiary, per month. FFS = fee for service. Baseline is the period January 2006–December 2009. The trend (slope) is the quarter-to-quarter change in PBPM Medicare expenditures. Standard errors are given in parentheses. * p < 0.10.

Table 1-8
New York: Differences in average quarterly utilization between pre-demonstration baseline period and pre-demonstration pilot period; Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs versus beneficiaries assigned to comparison group practices

Parameter Estimate	MAPCP vs. CG PCMH		MAPCP vs. CG non-PCMH	
	All-cause hospitalizations	ER visits	All-cause hospitalizations	ER visits
MAPCP – CG trend difference	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)

NOTES: MAPCP = multi-payer advanced primary care practice; CG = comparison group; PCMH = patient-centered medical home; ER = emergency room; FFS = fee for service. Baseline is the period January 2006–December 2009. The table contains incidence rate ratios from negative binomial regression models. The trend is the quarter-to-quarter relative change in utilization. Standard errors are given in parentheses. * p<0.10.

Rhode Island. Estimates of the baseline trend differences for total Medicare expenditures and Medicare expenditures for short-stay, acute-care hospitalizations and ER visits are given in *Table 1-9*. Estimates of the pre-demonstration baseline trend differences for the numbers of all-cause, acute-care hospitalizations and ER visits are given in *Table 1-10*. Relative to comparison PCMHs, total expenditures increased somewhat faster during the baseline period for beneficiaries assigned to MAPCP Demonstration practices. The baseline trend difference was \$5 PBPM. The remaining expenditure trend differences, including those relative to comparison non-PCMHs, were not significant. The baseline trend in all-cause, acute-care hospitalizations was similar for beneficiaries assigned to MAPCP Demonstration practices, relative to both comparison groups (PCMH and non-PCMH). The MAPCP Demonstration group experienced a slightly faster increase in the number of ER visits, but only relative to comparison PCMHs (IRR = 1.02).

Table 1-9
Rhode Island: Differences in average quarterly PBPM Medicare expenditures between pre-demonstration baseline period and pre-demonstration pilot period; Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs versus beneficiaries assigned to comparison group practices

Parameter Estimate	MAPCP vs. CG PCMH			MAPCP vs. CG non-PCMH		
	Total (\$)	Acute care (\$)	ER (\$)	Total (\$)	Acute care (\$)	ER (\$)
MAPCP – CG trend difference	4.54* (2.63)	1.27 (1.74)	0.33 (0.20)	-0.30 (1.92)	-0.33 (1.27)	0.21 (0.14)

NOTES: MAPCP = multi-payer advanced primary care practice; CG = comparison group; PCMH = patient-centered medical home; ER = emergency room; PBPM = per beneficiary, per month. FFS = fee for service. Baseline is the period January 2006–September 2008. The trend (slope) is the quarter-to-quarter change in PBPM Medicare expenditures. Standard errors are given in parentheses. * p < 0.10.

Table 1-10
Rhode Island: Differences in average quarterly utilization between pre-demonstration baseline period and pre-demonstration pilot period; Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs versus beneficiaries assigned to comparison group practices

Parameter Estimate	MAPCP vs. CG PCMH		MAPCP vs. CG non-PCMH	
	All-cause hospitalizations	ER visits	All-cause hospitalizations	ER visits
MAPCP – CG trend difference	1.01 (0.01)	1.02* (0.01)	1.01 (0.01)	1.01 (0.01)

NOTES: MAPCP = multi-payer advanced primary care practice; CG = comparison group; PCMH = patient-centered medical home; ER = emergency room; FFS = fee for service. Baseline is the period January 2006–September 2008. The table contains incidence rate ratios from negative binomial regression models. The trend is the quarter-to-quarter relative change in utilization. Standard errors are given in parentheses. * p<0.10.

North Carolina. Estimates of the baseline trend differences for total Medicare expenditures and Medicare expenditures for short-stay, acute-care hospitalizations and ER visits are given in *Table 1-11*. Estimates of the pre-demonstration baseline trend differences for the numbers of all-cause, acute-care hospitalizations and ER visits are given in *Table 1-12*. Expenditures for short-stay, acute-care hospitalizations increased modestly faster relative to comparison PCMHs; the trend difference was marginal (\$1). Relative to both comparison groups, the trend in expenditures for ER services was higher for beneficiaries assigned to MAPCP Demonstration practices, although the trend differences were practically negligible (\$0.45 PBPM and \$0.31 PBPM). The number of all-cause, acute-care hospitalizations increased faster among beneficiaries assigned to MAPCP Demonstration practices, but the trend differences relative to both comparison groups (0.4%; IRR = 1.004) were very small and practically negligible.

Table 1-11
North Carolina: Differences in average quarterly PBPM expenditures between pre-demonstration baseline period and pre-demonstration pilot period; Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs versus beneficiaries assigned to comparison group practices

Parameter Estimate	MAPCP vs. CG PCMH			MAPCP vs. CG non-PCMH		
	Total (\$)	Acute care (\$)	ER (\$)	Total (\$)	Acute care (\$)	ER (\$)
MAPCP – CG trend difference	1.73 (1.73)	1.40* (0.79)	0.45* (0.09)	1.77 (1.38)	1.02 (0.67)	0.31* (0.08)

NOTES: MAPCP = multi-payer advanced primary care practice; CG = comparison group; PCMH = patient-centered medical home; ER = emergency room; PBPM = per beneficiary, per month. FFS = fee for service. Baseline is the period January 2006–September 2011. The trend (slope) is the quarter-to-quarter change in PBPM Medicare expenditures. Standard errors are given in parentheses. * p < 0.10

Table 1-12**North Carolina: Differences in average quarterly utilization between pre-demonstration baseline period and pre-demonstration pilot period; Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs versus beneficiaries assigned to comparison group practices**

Parameter Estimate	MAPCP – PCMH		MAPCP – non-PCMH	
	All-cause hospitalizations	ER visits	All-cause hospitalizations	ER visits
MAPCP – CG trend difference	1.004* (0.00)	1.00 (0.00)	1.004* (0.00)	1.00 (0.00)

NOTES: MAPCP = multi-payer advanced primary care practice; CG = comparison group; PCMH = patient-centered medical home; ER = emergency room; FFS = fee for service. Baseline is the period January 2006–September 2011. The table contains incidence rate ratios from negative binomial regression models. The trend is the quarter-to-quarter relative change in utilization. Standard errors are given in parentheses. * p < 0.10.

Minnesota. Estimates of the baseline trend differences for total Medicare expenditures and Medicare expenditures for short-stay, acute-care hospitalizations and ER visits are given in *Table 1-13*. Estimates of the pre-demonstration baseline trend differences for the numbers of all-cause, acute-care hospitalizations and ER visits are given in *Table 1-14*. Baseline expenditure trends were similar between beneficiaries assigned to MAPCP Demonstration practices and both sets of comparison groups with one exception; the trend was \$0.25 PBPM lower for beneficiaries assigned to MAPCP Demonstration practices than for comparison non-PCMHs. Though statistically significant, this difference is practically negligible. Baseline utilization trends were similar for beneficiaries assigned to MAPCP Demonstration practices relative to both sets of comparison group practices.

Table 1-13**Minnesota: Differences in average quarterly PBPM Medicare expenditures between pre-demonstration baseline period and pre-demonstration pilot period; Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs versus beneficiaries assigned to comparison group practices**

Parameter Estimate	MAPCP vs. CG PCMH			MAPCP vs. CG non-PCMH		
	Total (\$)	Acute care (\$)	ER (\$)	Total (\$)	Acute care (\$)	ER (\$)
MAPCP – CG trend difference	1.41 (1.30)	0.13 (0.70)	-0.01 (0.11)	-0.75 (1.33)	-0.00 (0.75)	-0.25* (0.12)

NOTES: MAPCP = multi-payer advanced primary care practice; CG = comparison group; PCMH = patient-centered medical home; ER = emergency room; PBPM = per beneficiary, per month. FFS = fee for service. Baseline is the period January 2006–June 2010. The trend (slope) is the quarter-to-quarter change in PBPM Medicare expenditures. Standard errors are given in parentheses. * p < 0.10.

Table 1-14
Minnesota: Differences in average quarterly utilization between pre-demonstration baseline period and pre-demonstration pilot period; Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs versus beneficiaries assigned to comparison group practices

Parameter Estimate	MAPCP vs. CG PCMH		MAPCP vs. CG non-PCMH	
	All-cause hospitalizations	ER visits	All-cause hospitalizations	ER visits
MAPCP – CG trend difference	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)

NOTES: MAPCP = multi-payer advanced primary care practice; CG = comparison group; PCMH = patient-centered medical home; ER = emergency room; FFS = fee for service. Baseline is the period January 2006–June 2010. The table contains incidence rate ratios from negative binomial regression models. The trend is the quarter-to-quarter relative change in utilization. Standard errors are given in parentheses. * $p < 0.10$.

Maine. Estimates of the baseline trend differences for total Medicare expenditures and Medicare expenditures for short-stay, acute-care hospitalizations and ER visits are given in *Table 1-15*. Estimates of the pre-demonstration baseline trend differences for the numbers of all-cause, acute-care hospitalizations and ER visits are given in *Table 1-16*. Baseline expenditure trends were similar for beneficiaries assigned to MAPCP Demonstration practices relative to both sets of comparison groups. Similarly, the baseline utilization trends were similar for beneficiaries assigned to MAPCP Demonstration practices and both sets of comparison groups.

Table 1-15
Maine: Differences in average quarterly PBPM Medicare expenditures between pre-demonstration baseline period and pre-demonstration pilot period; Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs versus beneficiaries assigned to comparison group practices

Parameter Estimate	MAPCP vs. CG PCMH			MAPCP vs. CG non-PCMH		
	Total (\$)	Acute care (\$)	ER (\$)	Total (\$)	Acute care (\$)	ER (\$)
MAPCP – CG trend difference	-3.09 (2.14)	-0.79 (0.82)	-0.15 (0.33)	-1.00 (1.43)	-0.72 (0.63)	-0.06 (0.11)

NOTES: MAPCP = multi-payer advanced primary care practice; CG = comparison group; PCMH = patient-centered medical home; ER = emergency room; PBPM = per beneficiary, per month. FFS = fee for service. Baseline is the period January 2006–December 2009. The trend (slope) is the quarter-to-quarter change in PBPM Medicare expenditures. Standard errors are given in parentheses. * $p < 0.10$.

Table 1-16
Maine: Differences in average quarterly utilization between pre-demonstration baseline period and pre-demonstration pilot period; Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs versus beneficiaries assigned to comparison group practices

Parameter Estimate	MAPCP vs. CG PCMH		MAPCP vs. CG non-PCMH	
	All-cause hospitalizations	ER visits	All-cause hospitalizations	ER visits
MAPCP – CG trend difference	1.00 (0.01)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)

NOTES: MAPCP = multi-payer advanced primary care practice; CG = comparison group; PCMH = patient-centered medical home; ER = emergency room; FFS = fee for service. Baseline is the period January 2006–December 2009. The table contains incidence rate ratios from negative binomial regression models. The trend is the quarter-to-quarter relative change in utilization. Standard errors are given in parentheses. * p < 0.10.

Michigan. Estimates of the baseline trend differences for total Medicare expenditures and Medicare expenditures for short-stay, acute-care hospitalizations and ER visits are given in *Table 1-17*. Estimates of the pre-demonstration baseline trend differences for the numbers of all-cause, acute-care hospitalizations and ER visits are given in *Table 1-18*. Baseline expenditure and utilization trends were mostly similar among beneficiaries assigned to MAPCP Demonstration practices relative to both sets of comparison groups. The trend in growth in expenditures for short-stay, acute-care hospitals was smaller relative to comparison non-PCMHs, but the magnitude of the trend difference (–\$0.89 PBPM) was negligible. Baseline utilization trends for beneficiaries assigned to MAPCP Demonstration practices relative to both sets of comparison groups were similar; none of the estimated trend differences were significant.

Table 1-17
Michigan: Differences in average quarterly PBPM Medicare expenditures between pre-demonstration baseline period and pre-demonstration pilot period; Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs versus beneficiaries assigned to comparison group practices

Parameter Estimate	MAPCP vs. CG PCMH			MAPCP vs. CG non-PCMH		
	Total (\$)	Acute care (\$)	ER (\$)	Total (\$)	Acute care (\$)	ER (\$)
MAPCP – CG trend difference	-1.04 (2.45)	-0.53 (1.12)	-0.08 (0.07)	-1.80 (1.10)	-0.89* (0.50)	-0.01 (0.04)

NOTES: MAPCP = multi-payer advanced primary care practice; CG = comparison group; PCMH = patient-centered medical home; ER = emergency room; PBPM = per beneficiary, per month. FFS = fee for service. Baseline is the period January 2006–December 2011. The trend (slope) is the quarter-to-quarter change in PBPM Medicare expenditures. Standard errors are given in parentheses. * p < 0.10.

Table 1-18**Michigan: Differences in average quarterly utilization between pre-demonstration baseline period and pre-demonstration pilot period; Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs versus beneficiaries assigned to comparison group practices**

Parameter Estimate	MAPCP – PCMH		MAPCP – non-PCMH	
	All-cause hospitalizations	ER visits	All-cause hospitalizations	ER visits
MAPCP – CG trend difference	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)

NOTES: MAPCP = multi-payer advanced primary care practice; CG = comparison group; PCMH = patient-centered medical home; ER = emergency room; FFS = fee for service. Baseline is the period January 2006–December 2011. The table contains incidence rate ratios from negative binomial regression models. The trend is the quarter-to-quarter relative change in utilization. Standard errors are given in parentheses. * p < 0.10.

Pennsylvania. Estimates of the baseline trend differences for total Medicare expenditures and Medicare expenditures for short-stay, acute-care hospitalizations and ER visits are given in *Table 1-19*. Estimates of the pre-demonstration baseline trend differences for the numbers of all-cause, acute-care hospitalizations and ER visits are given in *Table 1-20*. Baseline expenditure trends among beneficiaries assigned to MAPCP Demonstration practices were similar to trends in both comparison groups with two exceptions. The baseline trend in PBPM Medicare expenditures for ER services was slightly lower among beneficiaries assigned to MAPCP Demonstration practices compared to PCMHs and the baseline trend in total PBPM Medicare expenditures was higher among beneficiaries assigned to MAPCP Demonstration practices compared to non-PCMHs. Baseline utilization trends for beneficiaries assigned to MAPCP Demonstration practices relative to both sets of comparison groups were similar; none of the estimated trend differences were significant.

Table 1-19**Pennsylvania: Differences in average quarterly PBPM Medicare expenditures between pre-demonstration baseline period and pre-demonstration pilot period; Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs versus beneficiaries assigned to comparison group practices**

Parameter Estimate	MAPCP vs. CG PCMH			MAPCP vs. CG non-PCMH		
	Total (\$)	Acute care (\$)	ER (\$)	Total (\$)	Acute care (\$)	ER (\$)
MAPCP – CG trend difference	-4.15 (3.59)	1.27 (2.43)	-0.25* (0.12)	4.10* (2.14)	2.47 (1.55)	0.20 (0.12)

NOTES: MAPCP = multi-payer advanced primary care practice; CG = comparison group; PCMH = patient-centered medical home; ER = emergency room; PBPM = per beneficiary, per month. FFS = fee for service. Baseline is the period January 2006–September 2009. The trend (slope) is the quarter-to-quarter change in PBPM Medicare expenditures. Standard errors are given in parentheses. * p < 0.10.

Table 1-20
Pennsylvania: Differences in average quarterly utilization between pre-demonstration baseline period and pre-demonstration pilot period; Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs versus beneficiaries assigned to comparison group practices

Parameter Estimate	MAPCP vs. CG PCMH		MAPCP vs. CG non-PCMH	
	All-cause hospitalizations	ER visits	All-cause hospitalizations	ER visits
MAPCP – CG trend difference	0.98 (0.01)	1.00 (0.01)	0.99 (0.01)	0.99 (0.01)

NOTES: MAPCP = multi-payer advanced primary care practice; CG = comparison group; PCMH = patient-centered medical home; ER = emergency room; FFS = fee for service. Baseline is the period January 2006–September 2009. The table contains incidence rate ratios from negative binomial regression models. The trend is the quarter-to-quarter relative change in utilization. Standard errors are given in parentheses. * p < 0.10.

Summary. In all eight states participating in the MAPCP Demonstration, baseline trends of the selected payment and utilization outcomes were mostly similar for beneficiaries assigned to MAPCP Demonstration practices, comparison PCMHs, and comparison non-PCMHs. Out of 80 comparisons, we observed 80% of the baseline trends relative to the pilot period trends to be similar. For individual states, there were some differences in baseline trends for a small number of outcomes. In these cases, however, the differences were small in magnitude and mostly practically negligible.

The baseline analysis presented here confirms our conjecture that prior to the start of PCMH pilot activities in the states, the outcomes for Medicare FFS beneficiaries receiving care from practices that would ultimately join the MAPCP Demonstration, comparison PCMHs, and comparison non-PCMHs followed similar trajectories. In other words, payment and utilization outcomes did not start to diverge until after the start of PCMH pilot activities in each state. Statistically significant differences that we do observe are relatively modest. This evidence also supports our primary statistical model specification in *Section 1.2.6 (Equation 1.1)*. In this specification baseline ‘trends’, as modeled by a series of quarterly indicators, are similar between groups of beneficiaries.

In summary, after extending our evaluation timeframe back to January 2006, we conclude that outcome trends are reasonably similar among the groups of beneficiaries assigned to MAPCP Demonstration practices and comparison practices during the baseline period. Hence, the selected comparison group provides a reasonable approximation to what would have happened to Medicare FFS beneficiaries assigned to MAPCP Demonstration practices in the absence of pilot activities or the demonstration itself. This, in turn, reduces the potential for bias in our estimates of the demonstration effect.

CHAPTER 2 CROSS-STATE FINDINGS

Chapter 2 provides a summary of qualitative and quantitative findings across the eight MAPCP Demonstration states and across the key evaluation domains of State Initiative Implementation, Practice Transformation, and Outcomes: clinical quality of care, patient safety, and health outcomes; access to and coordination of care; beneficiary experience with care; patterns of utilization and Medicare expenditures; and special populations. This chapter starts by identifying common themes across the eight states (*Section 2.1*) and then provides a snapshot of key features of the eight initiatives and identifies the differences and commonalities among the initiatives (*Section 2.2*). *Section 2.3* summarizes key themes and early implementation findings from the site visit to each state and concludes with lessons learned. *Section 2.4* summarizes usage of information provided to MAPCP Demonstration participants by RTI’s web portal and quarterly feedback reports. *Section 2.5* summarizes key qualitative findings related to practice transformation activities during the first year of the MAPCP Demonstration, technical assistance provided to practices by the states, and payment supports to practices. *Section 2.6* provides a cross-state summary for each of the outcomes domains (*Sections 2.6.1–2.6.5*). Each subsection contains a summary of state initiative and practice features that were designed to improve outcomes, followed by a summary of any evidence provided during the site visit or through review of secondary documents that showed outcomes had improved either during the state’s pilot initiative or during the early months of the MAPCP Demonstration. We also present findings from our quarterly fixed effects regression modeling of impacts of the state initiatives during the first 12 months under the MAPCP Demonstration. *Section 2.7* provides a summary of the budget neutrality analysis for year 1 of the MAPCP Demonstration. *Section 2.8* provides an overall summary of implications of the findings from the first round of site visits for states, CMS, and evaluators moving forward.

2.1 Themes Across the States

A common theme in nearly every MAPCP Demonstration state is the seamlessness with which Medicare was able to integrate with the structure and organization of the existing state pilots or programs. Payments from other payers continued with the entry of Medicare into states’ initiatives. These payment approaches vary widely on numerous dimensions, including payment generosity; consistency across payers in a given state; whether payment adjustments are based on practice characteristics, patient characteristics, performance, or the year of the demonstration; whether patient agreement to participate in the demonstration is required; and whether entities other than practices can receive payments. By contrast, there is more consistency – yet still some diversity – in how different types of payers are disbursing payments to practices across MAPCP Demonstration states. For example, in all but one state (Minnesota), fee-for-service (FFS) Medicare is making per beneficiary per month payments at the individual claim level by attributing eligible patients to participating practices based on analysis of historical claims data.²²

Local insurance market conditions and delivery system infrastructures, and their impacts on the state MAPCP Demonstrations, also vary across the states. For example, Pennsylvania has

²² Payments in Minnesota are based on practices billing for care coordination fees.

struggled to maintain the interest of the large number of payers that initially signed up to participate in its MAPCP Demonstration. In contrast, Rhode Island has benefited from strong leadership from its insurance commissioner, and its small insurance market has simplified the process of convening payers and building consensus. Meanwhile, Minnesota’s market has some payers and providers choosing not to engage in innovative FFS arrangements (as found in the MAPCP Demonstration payment model the state proposed) and, rather, engaging in “grants” and/or total cost of care or accountable care contracts that they consider comparatively more rewarding and less burdensome to implement.

The MAPCP Demonstration states imposed a similar, but non-uniform, set of patient-centered medical home (PCMH) practice recognition requirements on their participating practices. Practices in turn generally responded to these requirements by making operational changes (e.g., restructuring of staff roles and improving patient flow), and adopting health information technology (health IT) to facilitate practice transformation (e.g., electronic health records [EHRs], registries). A primary goal of these changes was to enable all practice staff to work “at the top of their license,” in order to streamline certain care processes and ultimately improve patient care. Multidisciplinary care teams were emphasized across the states, and practices strived to provide team-based care, though it was not easy for them to master this quickly.

Another common component of states’ MAPCP Demonstration initiatives is the use of nurse care managers or care coordinators, which are widely viewed as key to these programs’ success. States have adopted different approaches to incorporating nurse care managers or care coordinators into their initiatives: some are encouraging practices to hire on-site nurse care managers/care coordinators, and others are using care managers/care coordinators located off-site and employed by an external organization that works with the practice.

Most of the participating practices we interviewed had implemented an EHR prior to the start of the demonstration. However, some were just beginning to implement an EHR, or were switching vendors during the demonstration period. All but one MAPCP Demonstration state (North Carolina) explicitly requires practices to meet certain health IT requirements, although these requirements vary by state. Some practices across the eight states have voluntarily adopted certain health IT capabilities in order to more effectively operate as a PCMH.

To further facilitate practices’ transformation into PCMHs, each of the eight MAPCP Demonstration states provided some level of technical assistance to practices. Commonly-employed strategies include practice coaching, learning collaboratives (i.e., webinars, teleconference calls), and members-only interactive websites. The successes of these efforts vary among the states. For instance, in Rhode Island, there were some complaints that the technical assistance provided to practices was insufficient or too basic, since many of the practices had already had transformation efforts underway. In New York, practices found on-site technical assistance provided by one particular consultant invaluable in their efforts to gain National Committee for Quality Assurance Physician Practice Connection Patient-Centered Medical Home (NCQA PPC® PCMH™) recognition.

The impacts of the MAPCP Demonstration on outcomes—specifically, quality of care, patient safety, patient health, access to care, coordination of care, beneficiary experience with

care, utilization, and expenditures—cannot be firmly identified by states or participating practices at this early stage of the demonstration. But individuals involved in states’ efforts were often able to describe anecdotal successes at the patient or practice level.

2.2 Initiative Features

This section of the evaluation report presents a snapshot of key features of the eight state initiatives and identifies the differences and commonalities among them. As stated in our proposal, differences in characteristics of state initiatives—such as the length of time each has been in operation, the requirements that practices must meet, the extent of community-based resources, and structure of their payment system—are of critical importance to understanding the overall changes observed during the demonstration. Thus, this section creates a context for understanding the findings from the overall evaluation.

2.2.1 State Environment

All of the state initiatives have a history of collaboration. However, these previous collaboratives differ in primary partners. Seven of the states (Maine, Minnesota, Michigan, Pennsylvania, New York, Rhode Island, and Vermont) had multi-year histories of broad-based collaborative efforts with payers, providers, and other stakeholders before applying to participate in the demonstration. Michigan used the demonstration as an opportunity to draw together separate efforts to create a new collaborative, while the other states continued their existing collaboratives. North Carolina had a long history of collaboration to advance care coordination between the state and providers for Medicaid beneficiaries and, at the time of application, was expanding that partnership to include commercial payers.

All of the state initiatives leveraged funding from sources other than participating payers to fund portions of the PCMH initiative or other programs that are complementary to the PCMH initiative. For example, Maine and New York obtained funding for portions of their PCMH initiatives from private foundations, while Vermont uses the proceeds from a tax on medical claims to support its Health Information Exchange (HIE) and clinical registry. Also, all of the state initiatives are participating in relevant federal initiatives and continue to pursue new opportunities to leverage federal resources to improve the delivery system (*Table 2-1*).

All eight states have faced budget shortfalls during the demonstration. In three of the states (Maine, Minnesota, and Pennsylvania), these shortfalls have (or will) affect the demonstration. Maine plans to close the Dirigo Health Agency at the end of 2013. This Agency funds many state initiative activities, including the production of practice feedback reports. In 2011, Minnesota faced a 20-day government shutdown, resulting in state IT staff turnover and a setback to state data capabilities. The state also instituted a temporary reduction in Medicaid payment rates, including Medicaid Health Care Home fees. Shortfalls in Pennsylvania’s Medicaid budget in 2012 contributed to the delayed entrance of Medicaid FFS into the state initiative in the Northeast region, though the state made payments to practices retroactive to January 1, 2012. The impact of budget shortfalls will need to be monitored in all participating MAPCP Demonstration states going forward.

Table 2-1
Demonstration state participation in federal initiatives to improve delivery of care,
October 2012

State	Maine	Michigan	Minnesota	New York	North Carolina	Pennsylvania	Rhode Island	Vermont
SIM applicant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demonstration to integrate care for dual eligibles	No	Yes	Yes	Yes	Yes	No	Yes	Yes
Health Homes (\$2703)	Yes	No	No	Yes	Yes	No	Yes	Yes
Beacon	Yes	Yes	Yes	No	Yes	No	Yes	No
Medicare 646 contract	No	No	Yes	No	Yes	No	No	No

Six of the states also encountered shifts in political leadership when new governors took office in 2011. In five of these states (Maine, Michigan, Minnesota, Pennsylvania, and Vermont) the new Governor was elected from a different party than the outgoing Governor—New York was the only state where the new Governor retained the same party affiliation as his predecessor. Additionally, North Carolina also encountered a shift in political leadership in 2013 when the new Governor was elected from a different party affiliation as his predecessor. Of these, the change in administration affected only one state initiative: Pennsylvania’s Chronic Care Initiative. Pennsylvania’s new governor dismantled the agency with responsibility for administration of the initiative and shifted responsibility to the Department of Health. He also removed the requirement of Medicaid managed care organizations (MCOs) to participate. Stakeholders in Pennsylvania reported that these changes (and the resulting staff turnover) slowed the initiative’s momentum.

2.2.2 Demonstration Scope

At the end of the first year of the MAPCP Demonstration in each state (June 30, 2012–New York, Rhode Island, Vermont; September 30, 2012–North Carolina, Minnesota; December 31, 2012–Maine, Michigan, Pennsylvania), the eight states reported a total of 2,225,537 participants in the MAPCP Demonstration, including 408,007 Medicare FFS beneficiaries (**Table 2-2**). The size of the state initiatives varied widely. Michigan’s PCMH initiative had the most participants at 1,035,476 participants, including 226,369 Medicare FFS beneficiaries; Rhode Island had the fewest with 46,212 participants, including 7,912 Medicare FFS beneficiaries. There were similar variations in the numbers of participating practices and providers, with Michigan always the largest and Rhode Island always the smallest. However, Michigan (along with North Carolina) reported the fewest number of payers (four).

Across the eight states, a total of 4,052,346 participants, including 783,621 Medicare beneficiaries, were estimated to participate in the state initiatives according to the states’ applications. As a whole, the initiatives have met 54.9% of that all-payer projection and 52.1% of the Medicare-only projection as of the end of the first year of the MAPCP Demonstration in each state. Actual participation was less than projected for several reasons, including: the number of Medicare beneficiaries who would be eligible for the demonstration was overestimated, fewer commercial payers participated than expected, patient attribution and

assignment algorithms have been changed, and practices have either left or failed to meet the qualifications of participating in the state initiative.

Table 2-2
MAPCP Demonstration scope as of the end of year 1 in each state

State	Geographic scope	Participants				Payers (including Medicare)
		All-payer	Medicare ¹	Practices ²	Providers ²	
Maine	Statewide	68,627	21,497	21	200	5
Michigan	Statewide	1,035,476	226,369	321	1404	4
Minnesota	Statewide	506,772	65,612	121	1027	—*
New York	Regional (4 counties)	94,690	21,441	39	180	9
North Carolina	Regional (7 counties)	84,860	26,438	43	138	4
Pennsylvania	Regional (2 regions)	198,733	28,236	57	385	9
Rhode Island	Statewide	46,212	7,912	16	73	5
Vermont	Statewide	190,167	48,848	86	430	5
TOTAL	—	2,225,537	408,007	704	3,837	41

NOTES: Demonstration practices include only those practices with attributed Medicare FFS beneficiaries, and participating providers are the providers that are associated with those practices. The numbers of Medicare FFS beneficiaries are cumulative, representing the number of Medicare FFS beneficiaries that had ever participated in the demonstration for at least three months.

SOURCES: ¹ARC Beneficiary Assignment File (SAS Output tab52c.xls 07/30/2014); ²ARC MAPCP Demonstration Provider File.

* Minnesota does not report the number of payers in its quarterly reports to CMS.

Seven states reported that no payers had joined or left the demonstration since Medicare's entrance. In Pennsylvania, a major payer withdrew from the South Central region in December 2011, just before Medicare's entrance. As a result, that region was excluded from the state initiative because it no longer met Medicare's requirement that at least 50% of the practices' patients be covered under the demonstration. Two additional payers have withdrawn or announced their withdrawal from the state initiative since it began in January 2012. Although the number of participating payers has not changed in most of the states, some states, such as Michigan, have had difficulty securing payer participation during implementation.

We note that the numbers of patients *eligible* to participate in the MAPCP Demonstration in Minnesota (shown above) are significantly higher than the numbers of patients for whom providers are *actually receiving payments* through the MAPCP Demonstration. The state counts all practices certified as Health Care Homes as "participating" in the MAPCP Demonstration, even if a practice does not submit claims for monthly MAPCP Demonstration fees for any of their patients. The number of patients in Minnesota for whom providers are collecting monthly MAPCP Demonstration payments is significantly lower than the estimates that appear in the table above. For example, Medicare claims data indicate that as of September 2012, Medicare had paid monthly MAPCP Demonstration fees for 2,627 unique beneficiaries, which is approximately 4% of the 65,612 Medicare beneficiaries reported as participating in the demonstration in the quarter ending September 30, 2012.

2.2.3 Practice Expectations

All of the state initiatives established standards that practices must meet in order to participate in the demonstration and to receive payment (qualification standards). They all also established standards and performance requirements that practices must meet to continue in the state initiative. Together, these expectations assure payers that practices are undertaking the activities necessary to transform their practices and justify the enhanced payment. This section identifies and examines four key components of practice expectations.

PCMH recognition standards are the core requirements that practices must meet in order to join the MAPCP Demonstration. All eight state initiatives established such standards. Six of the state initiatives (Maine, New York, North Carolina, Pennsylvania, Rhode Island, and Vermont) based their standards primarily on the NCQA PPC[®] PCMH[™] recognition standards. Minnesota developed its own state Health Care Home standards and has administered its own process for practices seeking recognition since July 2010. Michigan allowed practices to choose whether they wanted to secure recognition from NCQA or through Blue Cross Blue Shield (BCBS) of Michigan's Physician Group Incentive Program (PGIP). In North Carolina, practices are required to work with local networks and Area Health Education Center (AHEC) toward quality improvement goals.

The expectations established by the remaining seven state initiatives varied greatly and are summarized in *Table 2-3* in *Section 2.5.1*. Four states (Maine, Michigan, Pennsylvania, and Rhode Island) required the practices to participate in activities designed to help them transform their practices and improve quality. These efforts were delivered through learning collaboratives, practice coaches, webinars, and phone calls.

- Three states (Minnesota, New York, and Vermont) required the practices to take specific actions to improve quality. For example, Minnesota required practices to establish a quality improvement team and develop a quality plan, while New York required practices to develop data reporting capabilities.
- Seven states (Maine, Michigan, Minnesota, New York, Pennsylvania, Rhode Island, and Vermont) expect practices to report information to the state initiatives. Most commonly, practices must report on state-specified clinical, quality, or performance-based metrics. Rhode Island is the only state that requires practices to measure patient satisfaction and ties payment to performance in that area.

Michigan and Pennsylvania made changes to the requirements they expected practices to meet before Medicare began making payments. The Michigan initiative set a care management staffing ratio at the start of the project. While physician organizations and practices are encouraged to reach a 100% care manager staffing level, they are permitted to continue provided that they achieve at least an 80% care manager staffing level for the physician organization as a whole. This was done in recognition that attributed membership and risk levels of patients may change over time, requiring some flexibility in hiring. Also, Pennsylvania made several changes intended to address payer concerns about practice accountability. For example, practices had to commit to completing the Practice Performance Assessment Framework. This framework,

which measures clinical performance improvement, transformation, and engagement, was implemented in July 2012.

Only Maine has made a change to practice expectations since Medicare began paying practices. To complement the implementation of the community care teams (CCTs), the state initiative began requiring participating practices to collaborate with their local CCT.

2.2.4 Support to Practices

The eight state initiatives implemented varying payment methodologies to compensate practices for the initial and ongoing costs of functioning as a PCMH and meeting practice transformation requirements. Payment approaches range from flat per member per month (PMPM) payments to payments based on performance on quality and/or cost, or some combination of the two. These payments have allowed practices to invest in changes designed to transform the way in which care is delivered to their patients.

Two states have made changes to their payment model since the launch of their state initiatives. Rhode Island made changes to its reimbursement methodology for pilot practices in April 2011 and for expansion practices in April 2012, combining practice transformation and nurse care management payment streams for most participating practices and introducing performance payments. Under the new methodology, practices are eligible for PMPM payments ranging between \$5.00 and \$6.00. In addition, New York committed to making performance-based payments to practices that qualify starting in 2013.

Six state initiatives also pay care management organizations that support participating practices and patients. Maine and Rhode Island have CCTs, Michigan has physician organizations, New York has pods, North Carolina has networks, and Vermont has community health teams (CHTs) and Support and Services at Home (SASH) teams. Although these organizations vary in structure, staffing, and payment, they are all intended to augment the care coordination provided by practices and improve the linkages between primary care practices and community services. In some states these organizations are also intended to support other activities. For example, in Michigan and North Carolina these organizations support practices in changing how they deliver care and quality improvement activities. Depending on the nature of their full responsibilities in supporting practices and patients, these organizations may employ dietitians, pharmacists, social workers, and others in addition to care managers.

In addition to providing financial support to practices and care management organizations, every state initiative offered technical assistance to practices, including learning collaboratives, in-person meetings, practice coaching, and distance learning such as webinars or conference calls.

All state initiatives also offered various kinds of provider reporting systems. For example, Michigan launched provider dashboards, through the Michigan Data Collaborative, as a resource for physician organizations to assess their relative performance against other physician organizations and performance benchmarks. They also offer the ability to drill down to the individual provider and patient level in order to help improve performance. Through this demonstration, CMS is supporting a web portal for practices to receive practice feedback reports

and Medicare beneficiary utilization files, which has had variable use among practices (see Section 2.3.3 for more information).

2.3 Implementation

This section uses primary data gathered from site visits to the eight demonstration states in the fall of 2012 and synthesizes key themes and findings from the implementation experience of state officials, other payers, and providers across the states. It highlights similarities and differences among the states and impacts of Medicare's entrance into state initiatives.

2.3.1 External Factors Affecting Implementation

Over the course of the MAPCP Demonstration, the political environments in states have been dynamic. However, while all eight states undertaking initiatives experienced a shift in partisan control of the state legislature or the executive branch, the impact has varied. In Pennsylvania, the state initiative was not a high priority for the new administration, while support in Maine remained strong despite changes in the legislature and the executive branch. Conflict in Minnesota between the Governor and legislature led to a government shutdown in 2011; the loss of state IT personnel during this shutdown hurt the Health Care Home initiative.

Local insurance market conditions, delivery system infrastructures, and leadership vary across the eight states. As a result, a range of facilitators and barriers has affected the initiatives. Though its history of investments in PCMHs has been a facilitator in Pennsylvania, the complexity of the state's insurance market has been a significant barrier in the initiative's implementation due to the challenges of engaging numerous payers and applying a uniform model in regions with disparate practice characteristics. Rhode Island has benefited from strong leadership, particularly from its insurance commissioner, as well as the stability of its small insurance market. Minnesota, New York, North Carolina, Rhode Island, and Vermont's initiatives were aided by the legislative mandates behind them. Minnesota benefited from existing infrastructure like its EHR mandate, while the emergence of total cost of care and accountable care contracts has been a barrier to engaging some health systems in the MAPCP Demonstration FFS model (which is based on billing for care coordination services on a FFS basis). Michigan's initiative was aided by BCBS of Michigan's investment in PCMH infrastructure since 2008, since so many practices were already participating in BCBS's program.

The eight states have other initiatives in place or in development that place additional demands on their attention and resources and potentially intersect with the MAPCP Demonstration work. All eight states have applied to CMS to participate in its State Innovation Model initiative. Five states—Maine, New York, North Carolina, Rhode Island, and Vermont—have obtained or are pursuing Section 2703 Health Homes under the Affordable Care Act, which will build upon each state's PCMH infrastructure and complement the MAPCP Demonstration.

2.3.2 Evolution of Demonstration Implementation with Medicare's Entrance

Structural and Organizational Changes needed to Accommodate Medicare

A common theme in nearly every state is the seamlessness with which Medicare was able to integrate with the structure and organization of the existing state pilots or programs. Seven

states reported minimal organizational changes to most components of their existing pilots with the entrance of Medicare and the launch of the MAPCP Demonstration. Because Medicare was entering pre-existing programs, key organizational and structural decisions had already been made and Medicare was able to enter with minimal disruption. Only Pennsylvania's initiative saw significant organizational changes after Medicare joined. Medicare's entrance in that state coincided with the start of the second phase of a program in which the state shifted to a uniform model across participating regions to strengthen its focus on accountability of the practices. In addition, Medicare's entrance coincided with a change in the governors' office and uncertainty over the CCI's future place within state government.

However, the introduction of Medicare into the programs (new in all states except Vermont, which was already paying for Medicare FFS beneficiaries) did affect some of the state initiatives. In Michigan, the two-level design (moderate and complex) of the initiative's care management model was influenced by Medicare's participation and the predicted influx of so many more complex patients with multiple chronic conditions. Michigan determined that higher needs Medicare patients would likely be better served in a complex care management model and pediatric and general populations would likely be better served in a moderate care management model. However, Michigan recognizes the complexity of integrating care management within the practice and continues to partner with physician organizations and physician champions to improve integration. Commitments from Medicare allowed Maine to include additional practices in its planned Phase 2 expansion—set to take place in the first quarter of 2013—and provided the financial support needed to launch the CCTs. In Vermont, the introduction of Medicare made possible the SASH program for the frail elderly in the community. North Carolina introduced requirements that practices receive NCQA PPC[®] PCMH[™] recognition.

Attribution and Enrollment Before and After Medicare's Entrance

Attribution and enrollment methodologies for non-Medicare payers in the state initiatives were not impacted by Medicare's entrance. The approaches to their attribution methodologies and challenges experienced by these payers generally pre-date or were not directly affected by Medicare's entrance. In Michigan, Medicare and at least one of the payers use look-back attribution while Medicaid MCOs use prospective enrollment. Because the PMPM payments are the same, payers that use prospective enrollment have a larger overall financial obligation than those that use look-back attribution, which make payments only for members who use services. This may have deterred more managed care plans from participating in the Michigan Primary Care Transformation Project.

Two states reported challenges with Medicare attribution in particular. Providers in Maine have expressed concern with a "snowbird" attribution issue, in which retirees who reside in the state for only part of the year may not consistently be attributed to participating practices.²³ Vermont was unique in that it was making payments on behalf of Medicare FFS beneficiaries before the MAPCP Demonstration based on practice-reported Medicare beneficiary counts. When Medicare officially entered Vermont's initiative and began applying its own

²³ All claims filed on behalf of a Maine resident are used for assignment, including those for services rendered by an out-of-state provider. Maine residents receiving care management out of state thus may not be attributed to Maine practices.

assignment algorithm, state officials discovered that practices' original estimates of attributed Medicare beneficiaries were too high. The continued development and expansion of the SASH program was jeopardized by less than expected funding due to this miscalculation.²⁴

Changes in Resource Allocation and Financing as a Result of Medicare's Participation

As with other features of the state initiatives, Medicare's entrance did not alter the payment structures in place in the participating states. Medicare was able to integrate with pre-established structures where they existed. (Michigan's payment structure and initiative launched with Medicare's entrance.) However, in Vermont, Medicare is deviating from one payment strategy used by the other payers: funding for CHTs are being frontloaded by the non-Medicare payers while Medicare is making monthly PMPM payments to support the CHTs.

Perceptions of the adequacy of the demonstration payments to practices varied among states and among stakeholders. Stakeholders in every state said the additional funds supplied by Medicare have been a key facilitator for the programs. In Michigan, some stakeholders felt that the PMPM payments for care management made by Medicare and Medicaid—in contrast to the FFS approach some commercial payers are using for the care coordination portion of their payment—are not sufficient to encourage practices to provide care coordination services to their Medicare and Medicaid patients.

FFS billing for care coordination can pose challenges. Minnesota, which requires practices to bill for care coordination activities instead of relying on CMS to issue MAPCP Demonstration claims based on an assignment algorithm (other states do not require providers to bill Medicare for care coordination activities), has seen fewer claims than expected. This is due to challenges encountered by providers in changing their billing systems—existing provider billing systems can only generate claims for face-to-face visits, yet MAPCP Demonstration care coordination services can be eligible for payment without a face-to-face visit—and a stronger engagement in initiatives that are centered on other payment reforms, including accountable care organization (ACO) initiatives.²⁵ Commercial payers in Vermont have voiced frustration because employer groups expect existing disease management programs to remain in place while also financially supporting CHTs serving similar purposes. Similar concerns about the relative value of CCTs to the public and commercial payers in Maine has led to much smaller PMPM contributions to the teams from the commercial payers.

In Michigan, North Carolina, and Vermont, program administrators underestimated the time and difficulty of contracting between payers and providers and participating in a multi-payer initiative. In Vermont commercial payers had to add administrative support. Maine has

²⁴ The PMPM calculated for Medicare's portion of the SASH budget was estimated based on the total number of Medicare FFS beneficiaries in Vermont instead of the anticipated number of beneficiaries that would be attributed to MAPCP Demonstration practices, a significantly smaller number. As a result, the SASH program received less funds from Medicare than anticipated, causing operations to be underfunded by \$40-50,000 each month. This was remedied in early 2013, retroactive to July 1, 2012.

²⁵ In cases where a participating payer does not allow providers to participate in multiple initiatives that are making payments for similar types of services, providers have had to make a choice about the initiative in which they participate.

experienced challenges in the process of contracting between CCTs and the payers, though this did not delay the launch of the CCTs in January 2012.

Maintaining payer commitment has been a challenge for some states. Pennsylvania has seen multiple payers submit notices of their intent to withdraw from the state's initiative; the withdrawal of a dominant commercial payer in the state's South Central region in December 2011, for example resulted in a decision by CMS to exclude the region from the MAPCP Demonstration. Stakeholders suggested that financial considerations were key factors driving these decisions. Stakeholders in Maine, New York, Pennsylvania, and Vermont expressed frustration with the lack of evidence of return on investment; payers in Maine suggested that continued lack of evidence for return on investment could threaten further involvement in the state initiative in 2013. States' eligibility to participate in the MAPCP Demonstration is predicated on the participation of sufficient private payers to cover a majority of practices' patients under the initiative.

Spillover Effects on Medicaid and Private Payers as a Result of Medicare Participation

The eight states uniformly reported that Medicare's entrance into their initiatives had positive spillover effects on the other participants. The additional financial support from Medicare provided needed support to practices. Medicare's entrance also sent a strong signal about the importance of primary care and the potential of these programs, helping to affirm payer and provider commitments to the state initiatives. Stakeholders in Michigan, Minnesota, New York, North Carolina, and Vermont all indicated that Medicare's participation helped encourage practices to participate or ensured that the state initiatives could sustain practice participation. In Michigan, Medicare's entrance resulted in Medicaid also entering the state initiative. Payers in Maine agreed to extend their commitments—over more time and more practices—after Medicare joined. Medicare's entrance helped Vermont's Blueprint to expand statewide.

However, some stakeholders in Pennsylvania felt that momentum was lost between the end of the first phase of the state pilot and the start of the MAPCP Demonstration as participants waited for Medicare to join. Stakeholders in Rhode Island also identified negative spillover effects: a few suggested that Medicare is receiving a “free ride” on the backs of the other participating payers due to a state-designed payment model that fails to adjust for risk or patient complexity. Payers and providers in New York noted that Medicare Advantage patients receive the benefits of practice transformation without compensation for PCMH services provided to those patients.

Impact of Data Systems

The challenge of collecting and using data was a recurring theme across all state initiatives. Issues of interoperability, lack of timely access to data on the part of providers and care managers, and underestimating the work that was needed to set up the data systems to support practices were common among the state initiatives. In North Carolina, working out the data file structures and contractual agreements for data exchange took a considerable amount of time with one commercial payer. Pennsylvania has grappled with a lack of systems to exchange data, while Rhode Island's CurrentCare HIE has been hindered by its opt-in enrollment policies. New York has experienced difficulty in getting high quality data from its data warehouse to practices in a timely fashion and practices have struggled with EHR interoperability. A lack of

data analytics capacity has limited the effectiveness of Maine’s data collection capabilities. Vermont has struggled to push out accurate population-level data from its DocSite database.

Despite these challenges, data and IT systems have proved to be facilitators. Minnesota uses its MN-ITS Medicaid provider portal to host the “e-tier” tool for providers to determine the complexity tier (and thus care coordination fee) associated with a patient. Eleven of Vermont’s 14 CHTs are using DocSite to support their care coordination activities. North Carolina’s Case Management Information System is an important source of information to help care coordinators support patient care.

Impact of Technical Assistance to Practices

Medicare’s entrance into the state initiatives generally did not have a large impact on state technical assistance strategies. However, five states did mention additions to the focus or scope of technical assistance as a result of Medicare’s entrance. Michigan and Pennsylvania identified a greater emphasis on care management for high-risk patients in their strategies, while North Carolina chose to provide additional training on serving the Medicare populations. Maine expanded its technical assistance strategy to include support for the CCTs, which it was able to launch in large part due to Medicare’s financial participation. Minnesota established a resource workgroup that compiled information on community support and resource materials to help providers better meet the needs of Medicare patients.

All eight states are supporting webinars, meetings, or learning collaboratives to provide technical assistance and support to practices participating in the demonstration. The technical assistance approaches of each state vary according to their local resources and priorities for improvement. Michigan provided training to complex and moderate care managers, including working with Geisinger Health System to train local care managers to adapt elements from the Geisinger care model. Minnesota contracted with the Institute for Clinical Systems Improvement to conduct its first learning collaborative, followed by subsequent in-house learning collaboratives. Rhode Island has leveraged Beacon grant funding to support demonstration practices. In response to deficiencies in data sharing in its state initiative, Vermont has launched a “sprint” process of intense assistance to select practices.

2.3.3 Lessons Learned

The MAPCP Demonstration has benefitted from strong collaboration and support from conveners and participants. A lack of return on investment has been frustrating for commercial payers across the eight states, but the positive relationships and commitment from the state conveners, and now Medicare, has kept stakeholders in the pilots. The only state that has seen this support wane is Pennsylvania, which has struggled with maintaining payer participation.

Across all states, data challenges have slowed down efforts. Even in states with relatively mature HIE capabilities, data collection and use has been a challenge. States such as Minnesota, Maine and Rhode Island that have been working on implementing all-payer claims databases have not yet been able to harness these resources to support participants. Other states like North Carolina, which houses a robust Medicaid database, has faced challenges integrating commercial and Medicare data. In all states, a lack of data integration between systems and between practices, hospitals, and specialists has hindered practices’ ability to manage care and

assess progress. Data sharing challenges are a significant barrier to reducing costs through reduced ER usage and hospital readmissions. Stronger data sharing agreements between hospitals and practices are needed.

Patient engagement—educating patients about their health conditions and encouraging them to be more actively involved in making decisions about their care—is reported to be a challenge in all states. Minnesota requires that practices give patients information about care coordination and allowing patients to affirmatively decide to receive these services. In addition, Minnesota practices are required to engage the patient in the development of the care plan and on a practice advisory committee. Patient engagement is a goal in Vermont and Maine as these states seek to expand CHTs and CCTs and in Rhode Island and Minnesota where there are seeking to launch CHT pilots.

2.4 RTI Web Portal and Quarterly Feedback Reports

Every quarter, participating MAPCP Demonstration practices receive three sets of reports and files. Practice-level feedback reports show summary-level information on key expenditures, utilization, and quality of care for practices for the most current reporting quarter, as well as for eight baseline or pre-demonstration quarters (for trending information). The feedback reports detail changes over time in the key measures and benchmarking to other participating practices within the same state. The goal of the feedback reports is to provide participating MAPCP Demonstration practices with timely interim feedback on their performance on key claims-based measures that are likely to be useful to and usable by practices for quality improvement purposes. Beneficiary utilization files provide practices with beneficiary-level information on patient severity (using Hierarchical Condition Category score), disease-specific quality of care measures and utilization information. Beneficiary assignment files provide practices with the names of beneficiaries assigned to them each quarter as well as some demographic information (e.g., date of birth, address) on each beneficiary.

A secure web portal was developed to distribute these reports and files to the practices. Practice-, organization-, and state-level users with verified credentials are able to log on to the web portal and retrieve information on their Medicare FFS patients assigned to them. Users began being assigned credentials to the portal in April 2012. Practices in five of the eight participating states (Maine, New York, Pennsylvania, Rhode Island, and Vermont) have access to the web portal. Two states (North Carolina and Michigan) distribute similar information to practices through their own data systems, so do not use the demonstration web portal. Minnesota also does not use the web portal because they do not use a process for assigning Medicare beneficiaries to practices, as is done for the other states.

Practice feedback reports were distributed to participating practices in New York, Rhode Island and Vermont starting July 2012 and to Maine and Pennsylvania practices starting October 2012. States have primary responsibility for encouraging organization (e.g., CHTs, CCTs, Pods) and practice staff to access the files and providing training on how to use the portal and information in the files. To augment state efforts, RTI and CMS staff has conducted webinars to educate users about the web portal and files. These webinars also are posted on the portal for users to access at their convenience. Technical user guides also are made available on the portal providing instructions on how to access the portal and how to read and interpret the information

in the reports and files, as well as details on the measures contained in the reports and files and how they were analyzed or calculated.

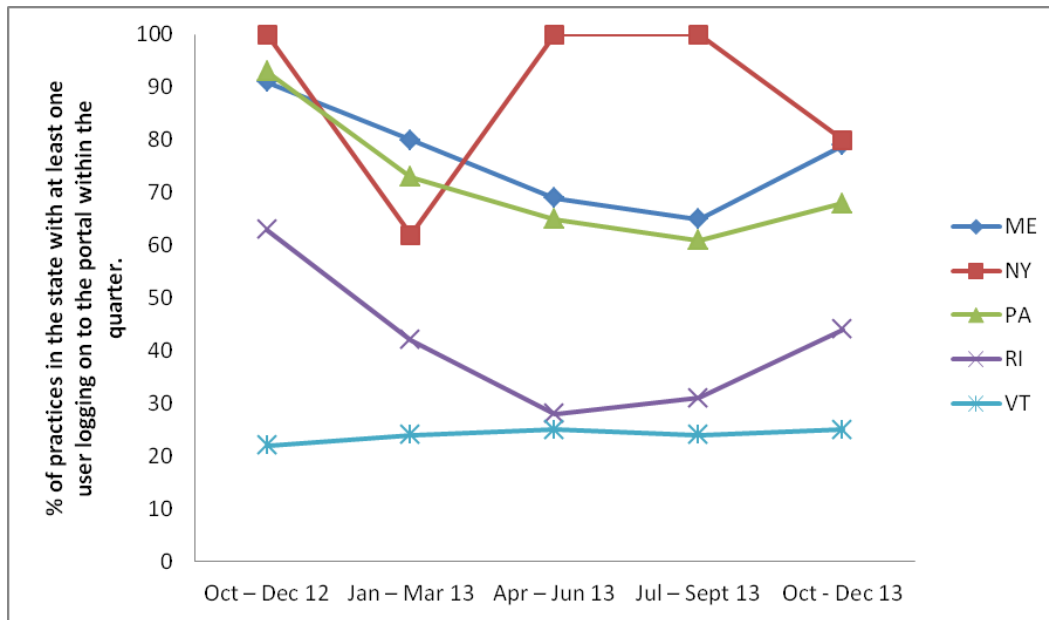
Feedback from the states and practices indicate that the beneficiary-level utilization data are the most useful because of the actionability of the data for care management purposes. The practice feedback reports are reportedly of less interest to the practices, although their utility may increase as more experience is gained with the demonstration and as more data accrue.

2.4.1 Portal Usage

As files and reports are added to the portal at least once per quarter, it is expected that every practice will have at least one user per quarter logging on to the portal to view and download any new files. However, there is wide variation across states in this usage measure. Web portal usage has been relatively low and has tapered over time. In July 2012, when the portal was first made available to users, 31% of all participating practices in the three states with portal credentials (New York, Rhode Island, Vermont) accessed the web portal. In October 2012, when the practice feedback reports and beneficiary assignment files for the quarter were posted, only 15% of practices accessed the portal. More users log on in the months that new reports are released. As of 2013, approximately 40% of the practice-level users assigned a user ID had never logged into the portal.

Figure 2-1 shows the percent of practices having at least one user access the web portal between October–December 2012 quarter and October–December 2013 quarter. Maine, New York, and Pennsylvania had the largest percentage of their practices having at least one user access the web portal (between 68% and 80%) between October–December 2013. The percent of practices having at least one user access the portal in Maine and Pennsylvania declined steadily over time until the most current complete quarter (October–December 2013) when the percent increased slightly. Usage in New York remained high due to their decision for one person to download and disseminate reports for all practices and pods (100% in two quarters). The percentage of practices having at least one user access the portal in Rhode Island decreased steadily, from 63% during the October–December 2012 quarter to 28% during the April–June 2013 quarter, but has started to increase since then. The percent of practices having at least one user access the web portal in Vermont has remained consistent and low (around 25%) during all quarters since October 2012. Reasons given by the states for the low usage include practices' preferences against getting separate reports from each payer, which can be overwhelming and less meaningful than having summary data on their whole patient population, and practices receiving more frequent and timely patient utilization data from alternative sources such as hospitals and admission/discharge/transfer databases that some states have established.

Figure 2-1
Percent of practices logging on to the web portal at least once within the quarter:
October 2012—December 2013



CMS and RTI staff continue to work to increase usage numbers by expounding on the value of the data available on the web portal, making adjustments to increase the value of the files and reports, and encouraging state initiative staff to reach out to their practices to encourage use of the portal. CMS provides each of the five states with a monthly file showing web portal login activity to help states monitor usage and reach out to practices and organizations that are not regularly accessing the portal.

2.4.2 Technical Assistance

RTI provides ongoing technical assistance to users. In addition to the technical user guides and educational webinars, RTI has a toll-free phone number for users to call and an email inbox for users to submit questions and comments and receive technical assistance. The largest issues faced in the first year revolved around getting access to the web portal. RTI resolved issues such as reconciling incorrect email addresses and other contact information. Another issue encountered was enabling users to successfully download the first set of files that were posted to the web portal. This involved working with the users to adjust web browser settings and other issues related to viewing the files. There also were a few cases where contacts were having trouble adding additional users.

2.4.3 Feedback from Practices

During the first round of site visits, we asked interviewees about their experiences with the practice feedback reports, beneficiary utilization files and the portal. Some site visit interviewees noted that the providers “love the RTI reports”. Some practices noted that they

have incorporated the practice feedback reports and utilization files into their daily work and that the reports “have enhanced [our] work.”

Several practices indicated that they found the quality measure information in the beneficiary utilization files most useful. For example, one practice noted that they used the reports on their beneficiaries with diabetes to identify gaps in quality measures (especially nephropathy tests). Other interviewees indicated that they found the high cost information in the beneficiary utilization files most useful, as it helps them identify additional patients who are high need but are not on other lists already generated by the practice. Also, the information identifying hospitalizations has been especially helpful for practices, as they don’t have other means of obtaining this information. Several state-level interviewees noted that the expenditure information contained in the beneficiary-level reports was “eye opening” to the practices, as before RTI’s reports, they had no way to tell how much their high-risk patients were costing Medicare and how costly their care was in general.

One respondent noted how they liked the timeliness of the beneficiary utilization files, compared to other reports they receive from another system: “The best, most timely information for utilization is the RTI feedback reports, but it is only for one group of people, Medicare. At our network, we’re using that report to identify the highest-risk patients. The lists are really relevant. I looked at the top 10 worst people and we know them well. The care coordinators are using those lists to identify high-risk patients in EHR, we call to get them in.” However, several interviewees did note some frustration with the timeliness of data. For example, a few interviewees indicated that they find the claims-based practice feedback reports “frustrating and “a waste of time” because the data are approximately nine months old, due to the delay in Medicare claims being submitted and the time it takes to extract, analyze the claims, and produce the reports.

Others noted that the beneficiary assignment files raised questions about the beneficiary assignment process and the lists of beneficiaries assigned to them for the quarter. For example, they see the reports and ask “is this a person really on my panel?” They indicated that they think it is important for them to know what patients CMS thinks are theirs, because they often do not match with the list of Medicare beneficiaries they think should be assigned to them.

One practice noted that their physicians often feel “bombed” with data, so the care management teams use the beneficiary files to perform targeted care management and not overwhelm the physicians with too much information. Some interviewees stated that they would like to be able to access the data directly through the portal, so they could run the reports on a more regular basis than quarterly.

At the time of the site visits, some practices indicated that they had not had a chance to start using the reports yet. These practices were more focused on other aspects of the project, such as making practice transformations to be able to participate in the demonstration and to become NCQA recognized; looking at data and reports was not a priority yet. They hoped to make use of the data in future years.

One issue we heard from the states is what types of staff should be accessing and using the beneficiary-level files and the practice feedback reports. States believe that different people

would benefit from different sections of the reports. For example, one type of staff would be better to receiving the beneficiary-level data on hospitalizations, while another type of staff might be better suited to receive the data on gaps in quality of care. States are still navigating the reports and in “whose hands” to get them so that their usefulness is maximized.

2.4.4 Web Portal Lessons Learned

Throughout the development of the web portal and reporting tools for MAPCP Demonstration participants, we have learned that obtaining accurate contact information is crucial. Early in the process of developing and setting up the web portal, there were issues with delays in getting the right individuals signed up as web portal users; these issues were often related to problems in the provider file submitted by the states containing point of contact information for each participating practice and organization. Most often, the person listed as the primary contact was not the right person to be responsible for downloading the report and files. Practices became frustrated when there were delays in getting access to the portal.

2.5 Practice Transformation

2.5.1 Changes Practices Made to Join the Demonstration

Practices participating in the MAPCP Demonstration faced a similar, but non-uniform, set of PCMH practice recognition requirements, and generally responded to these requirements by making operational changes (e.g., restructuring staff roles and improving patient flow) and adopting certain health IT to facilitate practice transformation (e.g., EHRs, registries).

PCMH Recognition

The eight MAPCP Demonstration states are expecting practices to attain different levels of PCMH functionality at different points in the demonstration (*see Table 2-3*). For example, while five of the eight states are requiring practices to obtain recognition as a Level 1 NCQA PPC[®] PCMH[™] to enter the state initiative, practices in New York and Michigan²⁶ must attain the more difficult Level 2 recognition to join. Although a majority of states either require no updates to PCMH recognition or only require it every three years, Minnesota and Michigan require practices to recertify *annually* using their state-specific PCMH recognition standards (which generally cover care processes similar to NCQA’s PPC[®] PCMH[™] standards, but can become more ambitious each year). Rhode Island perhaps expects the largest gains over time in practice capabilities among all of the states, by expecting practices to move from Level 1 recognition (required within 6 months of joining) to Level 3²⁷ recognition within 2 years of entering the state initiative.

Although it appears that many of the MAPCP Demonstration states have endorsed the same PCMH recognition standards (since six of the eight states are requiring practices to become

²⁶ Practices in Michigan can qualify to enter the state initiative by either becoming recognized by NCQA as a Level 2 PCMH or by becoming designated by BCBSM as a PCMH.

²⁷ Level 3 recognition requires practices to meet 75% or 85% of NCQA’s PCMH standards, depending on whether NCQA’s 2008 or 2011 standards are used.

recognized by NCQA as a PCMH – usually as an entry requirement, or within one year of joining the initiative in the case of North Carolina), each of these six states is also requiring practices to meet additional state-specific criteria²⁸ – meaning that all eight states are emphasizing a slightly different set of PCMH-related entry requirements. Some interesting patterns emerge across these eight sets of requirements:

- A majority of the MAPCP Demonstration states are requiring practices to meet specific health IT requirements: four are requiring practices to use electronic disease registries (New York, Rhode Island, Minnesota, Michigan); two are requiring practices to use e-prescribing (New York, North Carolina); two others are requiring practices to increase their use of health IT more generally, with flexibility given to those in how they achieve this (Maine, Michigan); and one (Vermont) is requiring practices to enter into an agreement with the state’s HIE and HITECH Regional Extension Center and to demonstrate progress towards being able to communicate with a state-endorsed web-based clinical registry.
- Five states are requiring practices to engage in care coordination and care management (Minnesota, Rhode Island, Michigan, Pennsylvania, Maine), which often rely on disease registries.
- Five of the states are requiring practices to offer enhanced access to care after hours (Minnesota, New York, North Carolina, Maine, Rhode Island); this is optional in the other states.
- Half of the states are requiring practices to engage more with patients and their families to facilitate their ability to better self-manage their conditions (Pennsylvania, Michigan, Maine, Minnesota), and one (North Carolina) requires practices to obtain training in cultural competency.
- Two states require practices to form quality improvement teams that meet regularly and work on practice-specific projects (Minnesota, Vermont).
- Three states (Minnesota, Michigan, Pennsylvania) require practices to report on particular quality measures; a fourth state (Rhode Island) requires practices to regularly generate quality reports, and a fifth state (New York) requires practices to develop their data reporting capabilities.

²⁸ In Rhode Island and Pennsylvania, these additional requirements take the form of state-specific “must-pass” NCQA elements—meaning these states are *requiring* practices to engage in certain care processes in NCQA’s PCMH standards that would otherwise be *optional*. In New York, Vermont, and Maine, the additional criteria that practices are asked to meet were developed by the state, rather than by NCQA (but in many cases, comparable requirements exist in NCQA’s PCMH standards). As a result, the distinction between whether a state is considering certain NCQA elements as “must pass” in their state or is requiring their own state-drafted requirements to be met is not a particularly useful distinction. In North Carolina, practices must qualify for one private payer’s incentive program—Blue Cross Blue Shield of North Carolina’s Blue Quality Physician Program—in addition to attaining recognition from NCQA as a Level 1 PCMH.

**Table 2-3
PCMH recognition requirements for practices participating in the MAPCP Demonstration**

State	PCMH standards	Minimum score	Initial requirements	
			Care processes emphasized (e.g., state-specific mandatory criteria not required in NCQA)	Subsequent requirements
New York	NCQA	Level 2 + state-specific mandatory criteria <i>(within 12–18 months)</i>	<ul style="list-style-type: none"> • Practices have to: <ul style="list-style-type: none"> – Use e-prescribing – Participate in a disease registry – Develop data reporting capabilities – Meet expanded access requirements, including 24/7 telephonic access – Offer same-day scheduling for urgent care • P4P incentives starting in 2013, based on: Member satisfaction, utilization (admissions, preventable ER visits, readmissions), development of a practice improvement plan 	None
Rhode Island	NCQA	Level 1 + state-specific “must-pass” NCQA elements <i>(within 6 months)</i>	<ul style="list-style-type: none"> • Practices have to: <ul style="list-style-type: none"> – Use an electronic registry to identify patients with certain conditions – Regularly generate quality reports – Provide nurse care manager services – Participate in 1 year of practice transformation training • Payment based entirely on P4P beginning 2nd year of renewal contracts, based on: utilization, quality, member satisfaction, process improvement 	Attain NCQA Level 3 PCMH to continue in demo after initial 2-year contract

(continued)

Table 2-3 (continued)
PCMH recognition requirements for practices participating in the MAPCP Demonstration

State	PCMH standards	Minimum score	Initial requirements	
			Care processes emphasized (e.g., state-specific mandatory criteria not required in NCQA)	Subsequent requirements
Vermont	NCQA	Level 1 + state-specific mandatory criteria	<ul style="list-style-type: none"> • Practices have to: <ul style="list-style-type: none"> – Designate a quality improvement team that meets at least monthly and works with the state quality improvement program, Expansion and Quality Improvement Program (EQulP) – Enter into an agreement with the local CHT to integrate their services into the practice – Enter into agreements with the state’s Health Information Exchange / HITECH Regional Extension Center and demonstrate progress towards being able to communicate with centralized state-endorsed clinical registry 	Recertify as an NCQA Level 1 PCMH in 3 years
North Carolina	NCQA	Level 1 <i>(within 12 mo.)</i> + BCBSNC’s Blue Quality Physician Program <i>(by September 2013)</i>	<ul style="list-style-type: none"> • BCBSNC’s Blue Quality Physician Program, which uses an enhanced fee schedule, requires: <ul style="list-style-type: none"> – e-prescribing – Electronic claims submission – Cultural competency training – A triage protocol for after-hours care 	None

(continued)

Table 2-3 (continued)
PCMH recognition requirements for practices participating in the MAPCP Demonstration

State	PCMH standards	Minimum score	Initial requirements	
			Care processes emphasized (e.g., state-specific mandatory criteria not required in NCQA)	Subsequent requirements
Minnesota	Minnesota Health Care Home standards	Year 1 standards	<ul style="list-style-type: none"> • Year 1 standards emphasize: <ul style="list-style-type: none"> – 24/7 continuous access to staff – Population management using a searchable electronic registry – Care coordination using team-based care – Individualized care plans – Patient- and family-centered care – Quality team, quality plan • Reporting on quality measures: optimal vascular, asthma, and diabetes care; depression remission at 6 months; colorectal cancer screening; patient experience of care; 30-day all-cause readmission 	Meet Minnesota’s Health Care Home recertification standards at 15-month intervals (which are increasingly ambitious, putting greater reliance on meeting quality benchmarks regarding patient health, patient experience, and cost-effectiveness measures)

(continued)

Table 2-3 (continued)
PCMH recognition requirements for practices participating in the MAPCP Demonstration

State	PCMH standards	Minimum score	Initial requirements	Subsequent requirements
			Care processes emphasized (e.g., state-specific mandatory criteria not required in NCQA)	
Maine	NCQA	Level 1 (<i>within 6 months</i>) + 10 core expectations (<i>within 12 months</i>)	<ul style="list-style-type: none"> • 10 core expectations of practices: <ul style="list-style-type: none"> – Leadership commitment – Team-based approach to care – Population management – Enhanced beneficiary access – Integrated care management – Integrated behavioral and physical health – Patient and family inclusion – Community connections (incl. public health organizations) – Commitment to reduce unnecessary spending, improve cost-effectiveness – Integration of health IT 	Recertify as an NCQA Level 1 PCMH in 3 years
Michigan	BCBS Michigan's Physician Group Incentive Program: PCMH designation; or NCQA	BCBS Michigan PCMH designation; or NCQA Level 2	<ul style="list-style-type: none"> • Care processes emphasized in BCBS Michigan's PCMH standards: <ul style="list-style-type: none"> – Population management – Care coordination – Patient engagement and self-management – Health IT – Quality measurement • Performance measures emphasized in BCBS of Michigan's PCMH standards: increased use of evidence-based care, preventive care, and generic drugs; decreased use of imaging 	Recertify as a BCBS Michigan PCMH annually or Recertify as an NCQA Level 2 PCMH in 3 years

Table 2-3 (continued)
PCMH recognition requirements for practices participating in the MAPCP Demonstration

State	PCMH standards	Minimum score	Initial requirements	
			Care processes emphasized (e.g., state-specific mandatory criteria not required in NCQA)	Subsequent requirements
Pennsylvania	NCQA	Level 1 + state-specific “must-pass” NCQA elements	<ul style="list-style-type: none"> • State-specific “must-pass” NCQA elements: <ul style="list-style-type: none"> – For practices certified with NCQA’s 2008 PCMH standards: <ul style="list-style-type: none"> o Non-physician staff perform basic care management (element 3C) o Specific care management activities (element 3D) o Patient education and self-management of conditions (element 4B) – For practices certified with NCQA’s 2011 PCMH standards: <ul style="list-style-type: none"> o Care planning and management (NCQA 2011 element 3C) • Quality measures used when calculating shared savings payments differ for adult and pediatric practices but cover three domains: prevention; management of chronic conditions; and clinical care management • Practices must demonstrate transformation on a state-specific self-assessment survey, and pass annual site audits to assess care management systems 	Recertify as an NCQA Level 1 PCMH in 3 years + meet a smaller number of state-specific “must-pass” elements

NOTES: Both the 2008 and 2011 NCQA PCMH standards use a three-tiered recognition approach, whereby practices are recognized as a Level 1, 2, or 3 PCMH, depending on the percentage of NCQA's standards they meet; Level 3 is the most advanced level of recognition. From 2008 to 2010, PCMH recognition was only available from NCQA using their 2008 standards. In 2011, practices could become recognized as a PCMH using NCQA's 2008 or 2011 standards. Starting in 2012, practices can only use NCQA's 2011 standards to obtain PCMH recognition. In Rhode Island, in addition to the state-specific must-pass elements listed above, the 5 original participating practices must also measure patient satisfaction, expand care and access, and establish compacts with specialists. BCBS = Blue Cross Blue Shield, P4P = Pay-for-performance, PCMH = Patient-centered medical home, NCQA = National Committee for Quality Assurance, Health IT = health information technology.

Administrative Changes

All eight states participating in the MAPCP Demonstration cited a restructuring of staff roles as a significant practice transformation strategy. These changes included adding, removing, and shifting staff roles. A primary goal of these changes was to enable all practice staff to work “at the top of their license,” as dictated by state law, in order to streamline certain processes and improve patient care. Multidisciplinary care teams were emphasized across the states, and practices strived to provide team-based care. To facilitate the new staff roles and the focus on team-based care, many practices increased the frequency of staff meetings or team huddles.

At the same time, many practices across the states implemented new care processes including pre-visit planning and post-visit summaries, checklists, and improved patient-flow procedures. Some practices altered the office’s physical set-up, while others re-purposed the existing space to facilitate this kind of work flow redesign.

Where funding allowed, practices in some states elected to hire new, specialized staff to provide services to a subset of their patients. For example, some practices hired new staff to serve as care managers and provide behavioral health care, nutritional counseling, or social work services. Notably, the emphasis on care coordination as a feature of the PCMH drove many practices to hire new staff to implement care coordination services.

While some practices hired new staff to perform these care management roles, the logistics of this varied among the states. In some practices, new staff were embedded in the practice and integrated into the existing care teams. In others, the new staff were based at a centralized location, and shared among several practices within the system or network. While centralized staff can potentially interact with more patients across more practices, some practice staff noted that these new staff members were not always available on a permanent basis.

Health Information Technology

Across the eight states, most participating practices had implemented an EHR prior to the start of the state initiative. However, some were just beginning to implement an EHR, or switched vendors during the course of the demonstration. Funding sources for these ventures varied between practices, but most received funding through programs that were administratively separate from the state initiative. For example, in Rhode Island and Minnesota, many of the practices that had implemented an EHR prior to the start of the state initiative had obtained funding through a commercial payer grant program or through their integrated delivery system. Others acquired new EHR systems during the course of the state initiative. In North Carolina, where comprehensive EHR adoption was not yet widespread in the participating practices, implementation of EHRs was cited as a primary challenge for practices.

Each state had certain requirements related to health IT, although these requirements varied between the states (see PCMH recognition). Beyond these specific stipulations, health IT requirements are components of the majority of PCMH recognition tools utilized by states. For example, NCQA recognition requires a practice to meet an extensive set of health IT standards.

Some practices across the eight states reported that they voluntarily adopted certain health IT capabilities in order to more effectively serve as a PCMH. For example, even in states where disease registries were not a condition for participation in the state initiative, many practices had chosen to implement such registries, as part of their EHR or separately, for the purposes of care coordination and pre-visit planning.

2.5.2 Technical Assistance

Each of the eight states provided some level of technical assistance to participating practices to facilitate their transformation into a PCMH. This technical assistance varied across the states, although there were some commonly employed strategies, including:

- *Learning Collaboratives.* The learning collaborative approach was one of the most frequently cited forms of technical assistance, with formal learning collaborative meetings occurring in at least five states (Maine, Michigan, Minnesota, Pennsylvania, Rhode Island). These sessions ranged in time and frequency, but were generally appreciated for their networking potential. Providers across all states reported that they benefitted from meeting their colleagues who were undergoing the same practice transformation process. Topics at the learning collaboratives ranged from care guidelines for certain clinical conditions to strategies for establishing patient advisory councils.
- *Practice Coaching.* Several states utilized practice coaches or facilitators to provide support through the transformation process. These coaches assisted practices with activities including PCMH recognition processes, implementing Plan-Do-Study-Act (PDSA) cycles, and facilitating communication with community-based resources of care. The source of practice coaches varied between states. In New York, Rhode Island and Pennsylvania, coaches were provided through a contracting agreement, while in Maine, coaches were furnished to select practices via an arrangement between local hospitals and a separate state initiative. For practices owned by larger health systems, additional practice coaching may be available from their parent organization. In Minnesota, regional nurse consultants employed by the state worked with individual practices to help them meet the state's HCH certification standards.
- *Other Technical Assistance.* A variety of other technical assistance approaches were implemented among the eight states including: peer-to-peer support, webinars, teleconference calls, and web portals.

The success of the various technical assistance efforts varied among the states. In some instances, providers described their practice coach as “an invaluable member of the family,” whereas others questioned the credibility of the group providing the assistance. The fact that practices were each at different points in the practice transformation process also raised challenges. Some providers felt that the technical assistance was too broad to provide any meaningful help. Others appreciated the various technical assistance resources available to them and found the assistance critical in their transformation process.

2.5.3 Payment Supports

The payment approaches being used in the eight MAPCP Demonstration states vary widely on numerous dimensions (*see Table 2-4 and Table 2-5*), including:

- *Payment generosity level.* MAPCP Demonstration payments to practices range from a low of \$1.20 PMPM to a Level 1 PCMH recognized using NCQA’s 2008 standards in Vermont, to a high of \$58.50 PMPM for a beneficiary with 10 or more major chronic conditions and a serious and persistent mental illness who speaks English as a second language in Minnesota. However, the generosity of payments across states is much more similar once other factors are taken into account – for example, very few patients in Minnesota have 10 chronic conditions and qualify their providers for the highest payment available, and Vermont practices are supported by SASH staff and CHTs through additional MAPCP Demonstration payments. Thus, the projected PMPM payment is approximately \$11 in Minnesota and \$9 in Vermont.
- *Consistency across payers in a given state.* In half of the MAPCP Demonstration states (New York, Rhode Island, Vermont, Pennsylvania²⁹), all payers within a state are using the same payment amounts and approach, while in the other half, some payers are paying more than others (North Carolina, Minnesota, Maine, Michigan). In Michigan, Medicare is paying higher PCMH rates than Medicaid and private payers since Medicare patients are thought to be more medically complex and to require more medical home services. In Maine, Medicare is paying lower rates than Medicaid, and Medicaid is in turn paying lower rates than private payers. North Carolina Medicaid is paying higher rates for aged, blind, or disabled (ABD) beneficiaries than it is paying for non-ABD beneficiaries and higher than Medicare is paying for its beneficiaries; and private payers (which traditionally cover healthier patients) are making the lowest PMPM payments in this state. Minnesota had originally intended for Medicare to pay the same rates as Medicaid, but the state was ultimately asked to lower its Medicare rates by CMS out of a concern about meeting budget neutrality requirements.
- *Payment structure.* Most MAPCP Demonstration states offer practices different tiers of payments and layer on additional payment adjusters based on different patient or practice characteristics or performance. The exception is Maine, which pays a flat rate PMPM. The factors used to adjust payment amounts include:
 - *Practice characteristics.* In two states, payments to practices vary based on PCMH capabilities—varying payments by NCQA PCMH level in North Carolina and NCQA PCMH score in Vermont.

²⁹ In Pennsylvania, all payers are using the same payment amount and approach for the PMPM component, but are using slightly different approaches for calculating the shared savings component of payments to practices. Also, Medicare’s average MAPCP Demonstration payment per beneficiary is higher than that of Medicaid and participating private payers since MAPCP Demonstration payments are based on age in that state, and Medicare beneficiaries are older than individuals insured through Medicaid or a private payer.

- *Patient characteristics.* Three states vary payment amounts based on patient characteristics, offering higher payments for ABD patients (North Carolina Medicaid), older (Pennsylvania), or who have a greater number of major chronic conditions, have a mental illness, or speak English as a second language (Minnesota). In Minnesota, providers are not eligible for monthly care coordination payments for patients with no major chronic conditions.
- *Performance.* In three states (New York, Rhode Island, Michigan), payers are offering pay-for-performance (P4P) incentives as part of the state initiative, and in one state (Pennsylvania), payers are offering to share savings with participating practices. States often use a combination of metrics, including quality, cost or utilization measures, patient experience ratings, and the presence of particular care processes (New York, Rhode Island) to determine whether a practice has earned an incentive payment and how much it has earned. New York’s P4P incentive was in the planning stages during the writing of this report, and the first incentive payment distributions were expected to be made in early 2013.
- *The year of the demonstration.* In six states, the payment amounts that practices are eligible to receive stay the same from year to year.³⁰ However, in Rhode Island, payments vary by year of participation in the state initiative. In Pennsylvania, base monthly payments decrease over time, while the share of savings providers are eligible to earn increases – from 40% in the first year of the demonstration to 50% in the third year.
- *Whether patient agreement is required.* In Minnesota, providers must explicitly ask patients for their consent to participate in the state initiative before they can submit claims for payment.
- *Whether non-practices can receive payment.* In Minnesota, Pennsylvania, and Rhode Island, practices are the only types of entities receiving payments through the demonstration—but in the other five states, MAPCP Demonstration payments also go to other supporting organizations that employ care managers or other health care professionals who work with participating practices to assist eligible enrollees. The level of these payments ranges from \$1.55 PMPM paid to CHTs and \$3.02 PMPM paid to the Support and Services at Home (SASH) program in Vermont to \$6.50 PMPM in North Carolina (paid to Community Care Networks). Also, the contribution amount can vary by payer. For example, in Maine, Medicare contributes \$2.95 PMPM to CCTs whereas private payers contribute \$0.30 PMPM. In addition, the payment approach can be different by payer. For example, in Vermont, Medicare makes a PMPM payment to support CHTs, whereas Medicaid and private payers contribute a lump-sum annual payment. In two states, payers also make PMPM payments to centralized entities for program management, data management, and evaluation (Michigan, New York). (See Table 2-5 for further details.)

³⁰ In North Carolina and Vermont, actual payments received by practices may change over time if practices become recertified by NCQA at different levels of PCMH recognition (e.g., moving from a Level 1 PCMH to a Level 3 PCMH).

By contrast, there is more consistency—yet still some diversity—in how different types of payers are disbursing payments to practices across MAPCP Demonstration states.

- *Medicare.* In all but one state, FFS Medicare is calculating PBPM payments to practices by attributing eligible patients to participating practices based on analysis of historical claims data. The exception is Minnesota, where practices must submit MAPCP Demonstration claims to Medicare each month for eligible patients.
- *Medicaid.* Five states' Medicaid programs are making payments based on the practice of their designated primary care provider, which is on file with participating MCOs and primary care case management (PCCM) programs. Exceptions to this are Minnesota, where practices must submit monthly claims to Medicaid, and New York, where some Medicaid managed care plans opted to provide a “plus up” payment whereby they identify attributed members, calculate a total enhanced payment for the year, estimate how many visits they will have per member, and add the difference to the basic visit payment. Another exception is Vermont's Medicaid program, which uses a Medicare-style claims-based patient attribution approach to calculate payments to its practices.
- *Private payers.* Although detailed information on private payers' payment approaches are limited since they are considered proprietary, the information we do have suggests some payers are using other approaches, such as increasing existing fee schedule rates (e.g., North Carolina) or capitated contract amounts (e.g., Minnesota) to give providers enhanced payments that are actuarially equivalent to the PMPM payments paid by Medicare or Medicaid.

**Table 2-4
Payments per member per month (PMPM) to MAPCP Demonstration practices**

State	Medicare	Medicaid	Private payers
New York	\$7.00 ¹ (includes \$0.50 for P4P incentive pool and varying amounts for support organizations)		
Rhode Island	<u>Original 2-year contract:</u> \$3.00 +\$1.16 (for nurse care manager)		
	<u>Year 1 renewal:</u> \$5.50		
	<u>Year 2+ renewals:</u> \$5.00 (0–1 performance targets ² met) / \$5.50 (utilization target and 1 other target met) / \$6.00 (all targets met)		
Vermont	\$1.20 to \$2.39 (depending on NCQA 2008 score) / \$1.36 to \$2.49 (depending on NCQA 2011 score)		
North Carolina	\$2.50 / \$3.00 / \$3.50 (NCQA Level 1 / 2 / 3)	\$5.00 / \$2.50 (ABD ³ patients / non-ABD patients)	BCBSNC: Enhanced fee schedule equivalent to \$1.50 State Employee Health Plan: inclusive with BCBSNC enhanced fee schedule above
Minnesota ⁴	\$10.14 (1–3 conditions) / \$20.27 (4–6 conditions) / \$30.00 (7–9 conditions) / \$45.00 (10+ conditions) + 15% for mental illness + 15% for patients who speak English as a second language	\$10.14 (1–3 conditions) / \$20.27 (4–6 conditions) / \$40.54 (7–9 conditions) / \$60.81 (10+ conditions) + 15% for mental illness + 15% for patients who speak English as a second language	State is allowing any payment methodology consistent with Medicaid's MAPCP Demonstration payment rates.
Maine	\$6.95	\$3.50 care management fee + \$3.50 regular PCCM ⁵ fee for all MaineCare members	\$3.00
Michigan	\$2.00 + \$4.50 (if have a care manager) + P4P incentives (Public payers contribute \$3.00 PBPM to an incentive pool)	\$1.50 + \$3.00 (if have a care manager) + P4P incentives	Payment methodology that is actuarially equivalent to \$1.50 + \$3.00 (if have a care manager) + P4P incentives (Private payers pay incentives equivalent to \$3.00 PMPM)

(continued)

Table 2-4 (continued)
Payments per member per month (PMPM) to MAPCP Demonstration practices

State	Medicare	Medicaid	Private payers
Pennsylvania	<u>Year 1:</u> \$1.50 + \$0.60 (age 1–18) / \$1.50 (age 19–64) / \$5.00 (age 65–74) / \$7.00 (age 75+) + Up to 40% of the net savings they generate for a payer, based on cost and quality performance <u>Year 2:</u> \$1.28 + \$0.51 (age 1–18) / \$1.28 (age 19–64) / \$4.25 (age 65–74) / \$5.95 (age 75+) + Up to 45% of the net savings they generate for a payer, based on cost and quality performance <u>Year 3:</u> \$1.08 + \$0.43 (age 1–18) / \$1.08 (age 19–64) / \$3.61 (age 65–74) / \$5.06 (age 75+) + Up to 50% of the net savings they generate for a payer, based on cost and quality performance		

NOTES:

¹ In New York, practices are paid \$7.00 PBPM. From this amount, practices are required to contribute \$0.50 to a P4P incentive pool administered by the Adirondack Health Institute (AHI), \$0.10 to AHI to administer this P4P incentive pool, and \$0.50 to AHI for vendor management, a data warehouse, and other centralized activities. The remaining \$5.90 for practices support care management and other centralized services, such as quality improvement and reporting activities in Pods 2 and 3, and enhanced physician salaries in Pod 2. As an alternative to paying practices \$7.00 PMPM, private payers can increase payment rates for evaluation and management visits in a manner that is actuarially equivalent to \$7.00 PMPM.

² Rhode Island’s three performance targets are described earlier.

³ ABD = Aged, blind, or disabled.

⁴ Minnesota gave 37 practices \$5,000 mini-grants in 2010, and funded technical assistance for four safety net clinics in 2011.

⁵ PCCM = Primary Care Case Management

⁶ P4P = Pay-for-performance

⁷ NCQA = National Committee for Quality Assurance

⁸ BCBS = Blue Cross Blue Shield

**Table 2-5
Payments per member per month (PMPM) to MAPCP Demonstration supporting organizations**

State	Medicare	Medicaid	Private payers
New York ¹	Pods (physician practice support organizations): Dollar amounts vary by Pod (for care management and other centralized services) Adirondack Health Institute: \$0.50 (for vendor management, data warehouse, and other activities) \$0.10 (administration fee for P4P incentive pool) \$0.50 (contribution to P4P incentive pool, which is then reallocated to practices)		
Rhode Island	–	–	–
Vermont	Community Health Teams (CHTs): \$350,000/year per CHT (Funded by participating payers: \$77,000 each from Medicaid, CIGNA, and Vermont Blue Cross Blue Shield (BCBS), \$38,500 from Mohawk Valley Plan, and \$1.55 PMPM from Medicare) Support and Services at Home (SASH) program: \$3.02		
North Carolina	Community Care Networks: \$6.50	Community Care Networks: \$13.72 (ABD ² patients) \$3.72 (non-ABD patients)	Community Care Networks: \$2.50 (paid by BCBSNC) Annual lump sum based on a 1:40 ratio of 1 full-time equivalent nurse care manager to 40 high-risk members (paid by the State Employee Health Plan)
Minnesota	–	–	–
Maine	Community care teams: \$2.95	Community care teams: \$3.00	Community Care teams: \$0.30
Michigan	Physician organizations: \$4.50 (if employ a care manager) + up to 20% of P4P ³ incentives MAPCP Demonstration program management ⁴ : \$0.26	Physician organizations: \$3.00 (if employ a care Manager) + up to 20% of P4P incentives MAPCP Demonstration program management ⁴ : \$0.26	Physician organizations: \$3.00 (if employ a care manager) MAPCP Demonstration program management ⁴ : \$0.26
Pennsylvania	–	–	–

NOTES:

¹ In New York, practices are paid \$7.00 PBPM. From this amount, practices are required to contribute \$0.50 to a P4P incentive pool administered by the Adirondack Health Institute (AHI), \$0.10 to AHI to administer this P4P incentive pool, and \$0.50 to AHI for vendor management, a data warehouse, and other centralized activities. The remaining \$5.90 for practices support care management and other centralized services, such as quality improvement and reporting activities in Pods 2 and 3, and enhanced physician salaries in Pod 2. As an alternative to paying practices \$7.00 PMPM, private payers can increase payment rates for E&M visits in a manner that is actuarially equivalent to \$7.00 PMPM.

² ABD = Aged, blind, or disabled.

³ P4P = Pay-for-performance

⁴ In Michigan, all payers fund program management, evaluation, data analytics and learning activities through a PMPM administrative support fee.

⁵ BCBS = Blue Cross Blue Shield,

2.6 Outcomes

2.6.1 Quality of Care, Patient Safety, and Health Outcomes

The goal of any quality measurement and quality improvement initiative is to improve the health outcomes for Medicare beneficiaries. Hence, in addition to measuring patient experience and expenditures, our evaluation aims to measure the impact of the MAPCP Demonstration and practice transformation efforts on patient mortality, self-reported health status, and incidences of serious medical event. However, these are longer term outcomes that may not be readily reflected during our restricted study period. As such, we can evaluate intermediate care processes that have been proven to be associated with these final outcomes. Based on scientific evidence, clinical guidelines on the process of patient care –for treating specific chronic conditions (e.g., diabetes), for preventive care, and for ensuring patient safety – have been developed to assist providers to ‘do the right thing for every patient every time’ to ensure better patient outcomes. Process of care quality indicators, based on these evidence-based guidelines, are available from a number of measures stewards such as the National Committee for Quality Assurance (NCQA), the Agency for Healthcare Quality and Research (AHRQ), the American Medical Association-convened Physician Consortium for Performance Improvement (AMA-PCPI), and even within CMS. In addition, meaningful use of health information technology is a national priority to improve patient care in terms of care coordination, medication safety, patient follow-ups and referrals, disease treatment, preventive care, patient engagement and other care processes; this is another indicator of quality that we can investigate. Finally, we can also study admissions for ambulatory care sensitive conditions (using the AHRQ Prevention Quality Indicators) since these are believed to have an inverse correlation with the accessibility and quality of primary care available to each patient. We can use a number of these quality indicators to measure the more readily observable impact of each state initiative on quality of care, patient safety, and, ultimately, health outcomes, and we will rely on a number of sources for data.

State Initiative and Practice Features Expected to Improve Quality of Care, Patient Safety, and Outcomes

Four of the eight MAPCP Demonstration states (New York, Rhode Island, North Carolina, Michigan) explicitly listed “improving patient outcomes” as a key objective for participation in their PCMH initiative; others implied this in addition to other goals, such as reducing acute events (e.g., hospital or ER admissions) that have negative effects on patients.

To improve these outcomes, each state implemented a number of practice transformation activities, including the adoption of health IT in the forms of patient registries, quality measurement, and patient follow-up, especially after an acute event. Five MAPCP Demonstration states mentioned some form of P4P arrangements based on their quality reporting. Care coordination was also mentioned as a key objective to better align resources with patient needs, such as fall prevention and case management for those with diabetes or other chronic conditions. All states mentioned the use of care managers or a care team to follow up with patients. A number of these teams meet on a regular basis to discuss their patient panel and to address specific quality improvement activities.

The key patient safety effort mentioned across all MAPCP Demonstration states was medication management. This effort occurs after a hospital discharge, as well as on an ongoing basis in the forms of patient education, titration, compliance, and using health IT to monitor drug interactions. In fact, participating practices in two of the eight states (Rhode Island and North Carolina) worked with on-site clinical pharmacists to ensure medication safety.

Impacts on Quality of Care, Patient Safety, and Health Outcomes

Quantitative data assessing the impacts of the MAPCP Demonstration on quality of care, patient safety, or health outcomes are not yet available. Some of the people we interviewed gave anecdotal accounts of improvements in their practice or state (e.g., catching medication errors, increasing use of preventive care services). Others were more skeptical of the initiatives, or recognized that the initiatives are too new to have any observable impacts. Beginning with the second annual report, we will include descriptive and, where appropriate, multivariate analyses of process of care quality indicators, EHR Meaningful Use rates, prevention quality indicators, as well as outcomes on mortality, and incidences of serious medical events, using Medicare data. We will also provide results on self-reported health status based on the PCMH-Consumer Assessment of Healthcare Providers and Services (CAHPS) survey.

2.6.2 Access to Care and Coordination of Care

State Initiative and Practice Features Expected to Improve Access to Care and Coordination of Care

Improving access to care and coordination of care is a central focus of all of the eight state initiatives. Most of the state initiatives include expectations related to expanding access to care and coordination of care, although there is variation in how explicit the requirements are. All of the states except Michigan and Minnesota require participating practices to achieve some level of NCQA PPC[®]-PCMH[™] recognition, which implies they have satisfied “must pass” elements related to care access and coordination, including access to care during office hours, implementation of a care management program, and referral tracking and follow-up. In Michigan, practices must have either NCQA PPC[®]-PCMH[™] recognition or receive PCMH designation from BCBS of Michigan’s Physician Group Incentive Program, which includes a domain related to coordination of care. Participating practices in Minnesota must meet the state’s Health Care Home certification standards, which include a requirement for access to staff through an on-call provider or phone triage system 24 hours a day seven days a week. Several states have additional requirements related to access and coordination:

- New York requires practices to provide telephone access 24 hours a day seven days a week and same-day scheduling for urgent care.
- Rhode Island requires practices to enter into compacts with four high-volume specialists, including one hospitalist, that specify a communication protocol for care transitions, and to comply with defined best practices for transitions from the hospital to outpatient care.
- Maine established 10 core expectations that practices must commit to achieving, including enhancing access to care; integrating health IT to support improved

communications; implementing a team-based approach to care; integrating behavioral and physical health services; and connecting patients to community resources.

- Michigan requires practices to have 30% open-access appointments and to provide access to a clinical decision maker, by phone or otherwise, 24 hours a day seven days a week. In addition, practices that provided at least 12 hours per week of access outside of weekday 9–5 office hours by the end of the first year of the state initiative received an incentive payment.

Finally, every state has incorporated nurse care managers or other care coordinators in its initiative. States vary in whether practices are required to hire the nurse care manager/care coordinator (Maine, Minnesota, Pennsylvania, Rhode Island) or whether they have the option of using shared care managers/care coordinators employed by an external organization (Michigan, New York, North Carolina). Vermont follows a somewhat different model: practices are required to enter into an agreement with the CHT in their HSA and integrate the CHT's care coordination and community resources, and the SASH program provides care coordination to Medicare beneficiaries living in subsidized housing complexes. In addition to nurse care managers embedded in practices, Maine incorporates CCTs, which provide additional care management support to participating practices' most complex patients.

During our site visits, practices described a number of initiatives to expand patient access, including open access scheduling, expanded hours, better after-hours coverage, improved telephone access, and web-based patient portals to make appointments, communicate with providers, or view test results. Nurse care managers/care coordinators also enhance access by acting as an intermediary between patients and providers inside and outside the PCMH. Nurse care manager/care coordinator responsibilities included managing care transitions, pre-visit planning, referrals to and coordination with specialists, arranging transportation, and connecting patients with social services.

There was variation across states and across practices within states in the extent to which practices had made changes to increase access to care since the start of the MAPCP Demonstration or even since the start of the state's pilot initiative. In some cases, practice staff said they had already expanded access before joining the state's initiative; however, others reported placing a greater emphasis on expanding access as a result of NCQA PPC[®]-PCMH[™] recognition or other program requirements. A common theme heard from respondents across states was that smaller practices and practices in rural areas faced greater challenges in meeting expanded access requirements. Small practices sometimes addressed these challenges by sharing on-call responsibilities across practices, using centralized call facilities or other after-hours phone triage systems, or referring patients to an urgent care center with which the practice had an established relationship. Some practices noted that patients are not aware of the changes their PCMHs have made to expand access, which limited their impact.

Nurse care managers/care coordinators were frequently cited during site visits as the most important component of the states' initiatives and the one that is more likely to have an impact on utilization and costs. When nurse care managers were part of states' initiatives prior to the MAPCP Demonstration, Medicare's entry provided additional funds that were used to increase their number. However, practices in some states (e.g., Pennsylvania) voiced concern that the

funds did not support enough nurse care managers to meet patient needs. Furthermore, most patients do not receive services from nurse care managers/care coordinators. Although their roles varied across states and practices, they typically focus on patients recently discharged from the hospital, patients recently seen in an ER, and patients with complex medical or psychosocial needs. Managing care transitions for patients who are discharged from hospitals was often impeded by difficulties getting timely data from hospitals. Also, provider shortages (e.g., specialists, dentists, mental health providers) in rural areas and lack of transportation create access barriers that practices could not always overcome.

Some states used broader-based teams to provide care management/care coordination (CHTs in Vermont, Networks in North Carolina) or to supplement practice-based nurse care managers (CCTs in Maine). In these states, care management/care coordination encompassed a broader array of services (e.g., social work, behavioral health, pharmacy consultation). In New York, Pods also offered such services to practices, although the extent of services offered varies by Pod. While these broader-based teams are able offer services not always available from practice-based nurse care managers, it can be challenging to integrate a care manager/care coordinator from an external organization into the practice's procedures and workflow. For example, in Maine practices and CCTs expressed confusion about who is responsible for identifying patients that would receive CCT services and the criteria for identifying these patients. Some practices were uncomfortable sharing patient information with CCTs. Vermont has addressed this challenge by embedding CHT staff within practices.

States varied in the extent to which they focused on coordination with community resources. For example, making referrals to community support services is part of the charge of CHTs in Vermont, CCTs in Maine, and the Networks in North Carolina. In North Carolina, there was variation across Networks in care managers' knowledge of community resources. In other states, these linkages occurred more sporadically.

Impacts on Access to Care and Coordination of Care

Quantitative data assessing the impacts of the MAPCP Demonstration on access to care and coordination of care are not yet available. In a number of states, there were anecdotal reports of improvements in access to care and continuity of care as a result of expanded access requirements and the use of nurse care managers/care coordinators. Beginning with the second annual report we will include descriptive and multivariate analyses of several indicators of access to care and coordination of care. Claims-based indicators will include primary care physician and specialist visit rates; ratio of primary care visits to total ambulatory care visits; percentage of discharges from the hospital for a medical admission with a follow-up visit within 14 days; rate of unplanned readmissions within 30 days after discharge; the percentage of ER visits that do not lead to a hospitalization; and a continuity of care index, which measures the concentration of visits among providers in the practice that is the beneficiary's usual source of care or to whom the beneficiary was referred by a provider in that practice. In addition, we will analyze a measure of care coordination based on responses to the PCMH- CAHPS survey.

2.6.3 Beneficiary Experience with Care

Our conceptual framework for the evaluation envisions that primary care transformation into a PCMH will lead to increased participation of patients in decisions about their health care

and increased ability to self-manage their health conditions. Both activities are expected to reduce acute care utilization and increase use of primary care services leading to increased satisfaction with care. In their state applications, Maine, Minnesota, and New York explain that improving patient experience is a goal of their demonstrations. Rhode Island and Vermont also plan to track patient experience. Michigan identifies improving beneficiary experience with care as one of their three major goals. Each state plans to track patient experience of care throughout the intervention period by fielding CAHPS surveys. Quantitative data assessing the impacts of the MAPCP Demonstration on beneficiary experience with care are not yet available. In the second annual report, we plan to report our findings from the PCMH-CAHPS survey administered to Medicare beneficiaries.

State Initiative and Practice Features Expected to Improve Beneficiary Experience with Care

During the site visits, we probed interviewees as to what features of their initiatives they thought might enhance patient experience. All eight states believe that the use of care managers, social workers, care coordinators, or community health teams will enhance patient care experiences by increasing care coordination within the medical community, assisting with transitions in care, and providing linkages to community and social supports. These health care professionals will also play an important role in all eight states' initiatives to increase patient experience with care by enhancing patient self-management skills through the use of diabetic educators, motivational interviewing, patient activation, classes or workshops, shared decision making, and health coaches. Four states (Vermont, New York, Maine, and Pennsylvania) are focusing upon the use of templates within their electronic health records or dashboards to track patient goals and progress toward meeting them for both the patient and provider to monitor. In a similar same vein, New York, Rhode Island, and North Carolina are relying upon patient portals and Pennsylvania is using a newsletter to increase experience with care.

One noteworthy feature has been the formation of patient advisory groups organized by practices to meet with providers in the State of Minnesota with the purpose to improve patient experience. One practice that was part of a large health system shared with us that new patient advisors that sit on its advisory board have helped them understand what their patients need, determine what their patients understand from the information they send them, and identify what they need to do to improve patient satisfaction.

Impacts on Beneficiary Experience with Care

Site visit interviewees offered anecdotes about the potential impact of the PCMH, usually for a single beneficiary. However, many provider respondents felt there was little evidence, even subjective, to suggest that PCMHs had affected their interactions with most patients. Two concerns were expressed about including patient experience as a study outcome. First, several respondents noted that care managers spend most of their time working with sicker patients with more complex care needs. Because these patients constitute only a portion of all beneficiaries in a practice, any impacts that occur for these patients are likely to be diluted in a representative survey sample. Second, the extent to which practices explained the PCMH concept to beneficiaries varied dramatically from one practice to another. Some staff felt that patient experience could be enhanced if more was done to communicate the expected benefits of receiving care from a PCMH, although they did acknowledge that the demonstration could still have an impact on patient experience even if this did not occur.

2.6.4 Effectiveness (Utilization & Expenditures)

In their applications for the MAPCP Demonstration, the states projected reductions in avoidable inpatient hospitalizations, avoidable ER services, and hospital readmissions by shifting patient care from hospital to primary care settings, targeting and helping high-risk beneficiaries navigate health care issues in a more personal environment, implementing more proactive rather than reactionary care, and augmenting services provided by the PCMHs.

In *Table 2-6*, we report the average demonstration effect for each of the eight states during the first 12 months of the MAPCP Demonstration for three Medicare expenditure outcomes (total Medicare expenditures, expenditures for short-stay, acute care hospitals, and expenditures for ER visits) and three utilization outcomes (numbers of all-cause, acute-care hospitalizations, ER visits, and 30-day unplanned readmissions). For details about how these estimates were derived, see *Section 1.2.3*.

For the expenditure outcomes, negative estimates indicate that the average growth in expenditures between the baseline period and the first demonstration year was less for beneficiaries assigned practices participating in the MAPCP Demonstration than for beneficiaries assigned to comparison practices. For the utilization rates, negative numbers indicate that during the first demonstration year beneficiaries assigned to participating practices experienced a reduction in utilization relative to the comparison group. Conversely, positive numbers indicate that the growth in expenditures between the baseline period and the first demonstration year was greater for beneficiaries assigned to participating practices than for beneficiaries assigned to comparison practices, or that during the first year of the MAPCP Demonstration beneficiaries assigned to participating practices experienced an increase in utilization relative to the comparison group.

From *Table 2-6*, we reach the following conclusions about the impact of the various state initiatives in the first year of the MAPCP Demonstration.

- In Rhode Island, there is no evidence that the Chronic Care Sustainability Initiative reduced the growth in Medicare expenditures or reduced utilization during the first year.
- In Vermont, there is evidence that the Blueprint for Health was able to slow the rate of growth in total Medicare expenditures, largely due to reduced growth in acute care expenditures. These effects seem to be limited to practices that participated in the Blueprint for Health pilot. For beneficiaries receiving care from practices that did not participate in the pilot, the rates of all-cause, acute-care hospitalizations, ER visits and 30-day unplanned readmissions increased during the first year of the MAPCP Demonstration, relative to both PCMHs and non-PCMHs in the comparison group. These findings suggest that time since beginning practice transformation may be an important determinant of success.

Table 2-6

Comparison of average demonstration effects for Medicare expenditures and utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs, comparison PCMHs and comparison non-PCMHs

Outcome	Rhode Island		Vermont		New York		North Carolina	
	PCMH CG	non-PCMH CG	PCMH CG	non-PCMH CG	PCMH CG	non-PCMH CG	PCMH CG	non-PCMH CG
Total expenditures (\$)	1.04	28.58	-35.21* (p) -8.86 (np)	-42.65* (p) -13.58 (np)	20.69*	17.27	50.36*	47.36*
Acute-care expenditures (\$)	-6.11	10.58	-10.11 (p) 14.02 (np)	-21.05* (p) 5.62 (np)	10.32	4.83	27.95*	23.92*
ER expenditures (\$)	-1.89	2.02	-1.87 (p) -0.05 (np)	-1.68 (p) -0.37 (np)	5.75*	5.17*	6.28*	4.66*
All-cause hospitalizations (per 1,000 beneficiaries)	2	4	2 (p) 8* (np)	2 (p) 8* (np)	3	4*	5*	4*
ER visits (per 1,000 beneficiaries)	1	4	4 (p) 9* (np)	8 (p) 15* (np)	-4	0	8*	6
Unplanned readmissions (per 1,000 beneficiaries)	22	18	18* (p) 38* (np)	7 (p) 24* (np)	15	10	25*	19*

(continued)

Table 2-6 (continued)

Comparison of average demonstration effects for Medicare expenditures and utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare FFS beneficiaries assigned to MAPCP Demonstration PCMHs, comparison PCMHs and comparison non-PCMHs

Outcome	Minnesota	Michigan		Maine		Pennsylvania	
	non-PCMH	PCMH	non-PCMH	PCMH	non-PCMH	PCMH	non-PCMH
Total expenditures (\$)	-7.71 (p) 20.72 (np)	-21.99	-24.56*	22.57	-6.82	11.89	19.07
Acute-care expenditures (\$)	-2.14 (p) 11.63 (np)	-9.07	-14.06*	19.25	1.53	6.73	10.47
ER expenditures (\$)	-1.71 (p) -3.01* (np)	-0.93	-0.63	-4.19*	0.18	-1.78*	0.02
All-cause hospitalizations (per 1,000 beneficiaries)	-3 (p) 3 (p)	1	0	5	0	8*	4
ER visits (per 1,000 beneficiaries)	-10* (p) -4 (np)	0	2	-2	0	10*	1
Unplanned readmissions (per 1,000 beneficiaries)	-7 (p) 6 (np)	2	2	16	4	31*	9

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room; FFS = fee-for-service.

The table contains average demonstration effect estimates for the first 12 months of the state’s participation in the MAPCP Demonstration, for Medicare expenditures and utilization rates. The estimates compare performance of the PCMHs participating in the MAPCP Demonstration relative to two groups of comparison practices: (1) beneficiaries assigned to PCMH practices in the comparison group, and (2) beneficiaries assigned to non-PCMHs in the comparison group. The estimate is a weighted average of four quarterly demonstration effect estimates, where the weights are the numbers of demonstration-eligible beneficiaries in each quarter.

For expenditures, negative numbers indicate that the growth in expenditures between the baseline period and the first year of the MAPCP Demonstration was less for beneficiaries assigned to MAPCP Demonstration practices than for beneficiaries in the comparison group. For the utilization measures, negative numbers indicate that beneficiaries assigned to MAPCP Demonstration practices experienced a reduction in utilization relative to the comparison group. Conversely, positive numbers indicate that the growth in expenditures between the baseline period and the first demonstration year was greater for beneficiaries assigned to MAPCP Demonstration practices than for beneficiaries in the comparison group, or that during the first demonstration year beneficiaries assigned to MAPCP Demonstration practices experienced an increase in utilization relative to the comparison group.

In Vermont and Minnesota, estimates are followed by ‘(p)’ or ‘(np)’ to indicate that they refer to beneficiaries assigned to MAPCP Demonstration PCMHs that participated in the state pilot activities, or to beneficiaries assigned to MAPCP Demonstration PCMHs that did not participate in pilot activities, respectively.

(continued)

Statistical significance: * $p < 0.10$

- In New York, there was no evidence that the ADK Demonstration reduced the growth in Medicare expenditures or reduced utilization. In fact, we observed a higher rate of growth between the baseline period and first demonstration year in total Medicare expenditures (relative to comparison PCMHs) and ER expenditures (relative to comparison PCMHs and non-PCMHs), and an increase during the first year of the MAPCP Demonstration in the rate of all-cause, acute-care hospitalizations (relative to comparison non-PCMHs).
- In North Carolina, there was no evidence that the MAPCP Demonstration reduced the growth in Medicare expenditures or reduced utilization rates during the first demonstration year. Higher rates of growth were observed for all three expenditure outcomes, and increases in the rates of all-cause, acute-care hospitalization, ER visits (relative to comparison PCMHs only), and 30-day unplanned readmissions.
- In Minnesota, there was evidence that the Health Care Home initiative reduced the rate of growth in ER expenditures, relative to comparison non-PCMHs, but only among practices that did not participate in the pilot. There was also evidence that the rate of ER visits declined during the first year of the MAPCP Demonstration. The effects were limited to beneficiaries receiving care from practices that participated in state pilot activities.
- In Michigan, the Michigan Primary Care Transformation project was associated with a decline in the growth in total Medicare expenditures, relative to comparison non-PCMHs. This effect was driven by reduced growth in expenditures for short-stay, acute-care hospitals.
- In Maine, there was limited evidence that the Maine PCMH pilot had an effect during the first year of the MAPCP Demonstration. Beneficiaries receiving care from PCMH practices experienced a slightly lower rate of growth in ER expenditures relative to beneficiaries receiving care from comparison PCMHs.
- In Pennsylvania, the Chronic Care Initiative was associated with a slight decline in the growth in ER expenditures, relative to comparison PCMHs. At the same time, beneficiaries receiving care from participating practices experienced increases in the rates of all-cause, acute care hospitalizations, ER visits, and 30-day unplanned readmissions, relative to comparison PCMHs.

In sum, with regard to total Medicare expenditures, we found evidence that the state initiatives reduced the rate of growth in two of the eight MAPCP Demonstration states (Vermont, Michigan). When present, the effect appears to be driven by reduced growth in expenditures for short-stay, acute-care hospitals. There was even less evidence that the state initiatives were able to reduce utilization rates. Reductions in the rate of ER visits were observed in Minnesota, and these were limited to beneficiaries receiving care from practices that participated in state pilot activities. The limited evidence of demonstration effects presented in this report is likely a result of the relatively short evaluation period. Because a strengthening of PCMH capacity, payment reforms and other transformation activities take time to implement and

become fully effective, more positive demonstration effects may emerge in the second annual report.

2.6.5 Special Populations

The evaluation of the impact of the MAPCP Demonstration on special populations focuses on the same research questions described in the sections on quality of care, access to and coordination of care, beneficiary experience with care, and effectiveness. With a few exceptions, MAPCP Demonstration states did not develop unique interventions tailored to special populations, such as blacks, Hispanics, inner-city residents, Medicaid or Medicare beneficiaries, or dual eligible beneficiaries. Exceptions include Vermont, which targets older people living in supported housing (through the SASH program), and New York, which targets people living in rural areas by virtue of where the demonstration takes place (in the Adirondacks). In general, states argued that the goal is a person-centered transformation of primary care intended to meet the needs of all patients regardless of their ethnicity, race, insurance status, or rural/urban status. Thus, any special needs of specific populations would be addressed by the focus on patient-centered care.

Instead, most states focused on patients believed to be at high risk of unnecessary utilization and expenditures or at high risk of adverse outcomes. For example, in addition to people participating in SASH, Vermont is targeting people with one or more chronic conditions, individuals with behavioral issues, and individuals with chronic conditions/multiple comorbidities/high risk. Similarly, North Carolina is targeting people at high risk for hospital readmission, people with multiple chronic conditions, people with polypharmacy issues, and patients in care transitions. In Minnesota, the monthly payments to practices are based on the number of major chronic conditions a patient has; practices receive higher payments for patients with more conditions, and payment multipliers are applied if the patient has a serious and persistent mental illness or speaks English as a second language. Michigan has designed its care management intervention to target people in care transitions and people at high risk of hospital readmission. Pennsylvania began by targeting people with diabetes and asthma and is expanding into other chronic diseases. Although New York, Rhode Island, and Maine do not have an articulated policy of focusing on these high-risk clinical populations, many practices report that they are doing so.

Quantitative data assessing the impacts of the MAPCP Demonstration on these special populations are not yet available. In future reports, we plan to conduct outcomes analyses of special populations that are of policy interest or the focus of individual states. For example, we will explore changes in Medicare expenditures and acute care utilization for dual eligible beneficiaries, people with disabilities, older people in supported housing participating in the SASH program, Medicare beneficiaries with behavioral health issues, Medicare beneficiaries with chronic conditions, Medicare beneficiaries who live in rural areas or who are racial minorities, and Medicaid children with asthma, or residing in the surrounding community.

2.7 Budget Neutrality in Year 1 of the MAPCP Demonstration

Table 2-7 summarizes the budget neutrality results for seven of the eight MAPCP Demonstration states after Year 1. Minnesota is excluded from budget neutrality calculations for this report due to lack of billing by participating physician practices for Medicare beneficiaries;

thus, Medicare PCMH fee payments are minimal and net savings estimates would be overstated. The methods used for calculating budget neutrality are described in detail in *Section 1.2.3*. This effect quantifies the change in Medicare expenditures among beneficiaries assigned to MAPCP Demonstration PCMHs relative to a beneficiaries assigned to PCMHs in the comparison group that do not participate in the MAPCP Demonstration.

Table 2-7
Estimates of Gross Savings, MAPCP Demonstration Fees Paid, & Net Savings, Year 1 of the MAPCP Demonstration

State	Seven MAPCP Demonstration states		Total MAPCP Demonstration fees	Net savings	Return on fee investment
	Year 1 eligible beneficiary quarters	Gross savings			
New York	76,800	-\$4,765,447*	\$1,594,939	-\$6,360,386	-2.99
Rhode Island	28,038	-87,363	441,075	-528,438	-0.20
Maine	74,327	-5,032,379	2,182,490	-7,214,869	-2.31
North Carolina	70,698	-9,467,541*	1,908,341	-11,375,882	-4.96
Michigan	752,835	49,668,370	21,917,324	27,751,046	2.27
Pennsylvania	106,210	-5,795,682	\$2,069,690	-\$7,835,372	-2.80
Vermont					
Non-pilot	58,735	1,561,806	1,049,164	512,642	1.49
Pilot	106,911	11,294,447***	2,052,961	9,241,486	5.50
Combined	165,646	12,856,253	\$3,102,125	\$9,754,128	4.14
Total 7 States	1,274,554	40,314,752	33,215,984	4,190,227	1.21

NOTES:

Minnesota is excluded from budget neutrality calculations for this report due to lack of billing by participating physician practices for Medicare beneficiaries; thus, Medicare PCMH fee payments are minimal and net savings estimates would be overstated.

Year 1 eligible beneficiary quarters: sum of MAPCP Demonstration beneficiaries' fractions of quarters eligible to participate in the demonstration excluding beneficiaries with <3 months eligibility.

Gross savings: estimated gross savings effect per beneficiary times eligible quarters. Positive numbers reflect the MAPCP Demonstration's practices' expenditures rose less than the comparison group's expenditures. Negative numbers reflect the MAPCP Demonstration's practices' expenditures rose more than the comparison group's expenditures. An asterisk next to the estimate indicates that the gross savings estimate was statistically significant, *p<.10; **p<.05; ***p<.01; statistical testing was done only at the state level.

Total MAPCP Demonstration's fees: sum of MAPCP Demonstration's fees paid out excluding beneficiaries with < 3 months eligibility

Net Savings: gross savings minus total fees

Return on investment: gross savings divided by total fees

SOURCE: Medicare claims 2006–2012 (quarters vary by state).

Overall, gross savings for the seven MAPCP Demonstration states were \$40.3 million in Year 1. This amount was largely due to \$49.7 million in gross savings in Michigan. Total fees for the eligible quarters were \$33.2 million. The difference in gross savings and fees results in net savings to Medicare of \$4.2 million and an average return on the investment (ROI) in fees of +1.21, implying \$1.35 in savings for every \$1 Medicare paid out.

Only pilot practices in Vermont ($p=.007$) exhibited both statistically significant positive gross savings and a ROI greater than one, indicating that the Vermont MAPCP Demonstration practices' expenditures rose less than the PCMH comparison group's expenditures. We observed a ROI of 5.5 for Vermont pilot practices, implying \$5.50 in savings for every \$1 Medicare paid out. Michigan exhibited relatively large gross and net savings, but the state's gross savings estimate did not approach statistical significance ($p=.39$).

New York and North Carolina had statistically significant negative gross savings, indicating that the MAPCP Demonstration practices' expenditures rose more than the PCMH comparison group's expenditures. Maine, Rhode Island and Pennsylvania also had negative gross savings, although the estimates were not statistically significant. Trends in gross savings are difficult to identify with just four quarters of data. For example, Michigan showed positive gross savings for the first three quarters which were offset by small losses in the last quarter of the first year (data not shown).

2.8 Potential Issues for States, CMS, and Federal Evaluators Moving Forward

States have experienced a variety of challenges in their efforts to implement the MAPCP Demonstration. Issues to watch going forward include the potential withdrawal or entrance of payers or providers in some states' initiatives. For example, Pennsylvania's struggle to engage payers and demonstrate an adequate return on their investments has led to the exit of two payers from the state initiative; further payer attrition is an ongoing concern. The state's practices have largely remained in the initiative (only two practices have dropped out), but one provider suggested additional practices could withdraw if shared savings payments are not made or if practices believe that their shared savings payments in the first year are too small to cover their participation costs. Payers in other states, such as Maine and New York, have also expressed concern over the lack of data showing cost savings, changes in patterns of utilization, or improvements in health outcomes, but so far seem willing to continue their participation.

Several challenges experienced in the first year may continue to be problematic or the impacts may continue to be felt in years 2 and 3 of the demonstration. For example, billing for MAPCP Demonstration fees by Minnesota practices is likely to stay low as practices find the costs of changing their billing systems to be high. In Vermont, fewer Medicare beneficiaries being aligned with participating practices and thus lower-than-expected MAPCP Demonstration payment revenue for the SASH program limited the roll-out of planned additional panels.³¹

³¹ The PMPM calculated for Medicare's portion of the SASH budget was estimated based on the total number of Medicare FFS beneficiaries in Vermont instead of the anticipated number of beneficiaries that would be attributed to MAPCP Demonstration practices, a significantly smaller number. As a result, the SASH program received less funds from Medicare than anticipated, causing operations to be underfunded by \$40-50,000 each month. This was remedied in early 2013, retroactive to July 1, 2012.

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CHAPTER 3 NEW YORK

In this chapter, we present qualitative and quantitative findings related to the implementation of the Adirondack Medical Home Demonstration (ADK Demonstration), New York's preexisting regional multi-payer initiative, which added Medicare as a payer to implement the MAPCP Demonstration. We report qualitative findings from our first of three annual site visits to New York, as well as quantitative findings using Medicare fee-for-service (FFS) claims data to report characteristics of beneficiaries and practices participating in the state initiative, descriptive statistics and estimates of the demonstration effects for Medicare payment and utilization outcomes, and estimates of budget neutrality.

For the first round of site visit interviews, which occurred October 10–12, 2012, three teams traveled to the greater Albany area and the Adirondack region. The focus of the site visits was on early implementation experiences and practice transformation activities that were necessary to join the MAPCP Demonstration. During the site visit, we interviewed physicians, nurses, care managers, and administrators from participating patient-centered medical homes (PCMHs) and collaborating organizations, including Pod administrators and staff from the Adirondack Health Institute, to learn about the effects of the state policies on their practice transformation activities and the quality and effectiveness of the health care they delivered before and after Medicare's entrance. We met with key state officials involved with the implementation of the ADK Demonstration to learn how the payment model and other efforts to support practice transformation, such as learning collaboratives, were chosen and implemented and how specific performance goals were established. We also met with payers to hear their experiences with implementation and whether the payments to practices were effective in terms of producing desired outcomes or whether modifications are warranted. Last, we met with provider organizations to learn if they had observed any improvements in beneficiary experience with care and any changes to the way care is delivered.

This chapter is organized by major evaluation domains. *Section 3.1* reports state implementation activities, as well as baseline demographic and health status characteristics of Medicare beneficiaries and characteristics of practices participating in the ADK Demonstration. *Section 3.2* reports practice transformation activities. The subsequent sections of this chapter report our findings for the five evaluation domains related to outcomes: quality of care, patient safety, and health outcomes (*Section 3.3*); access to care and coordination of care (*Section 3.4*); beneficiary experience with care (*Section 3.5*); effectiveness as measured through health care utilization, Medicare expenditures, and budget neutrality (*Section 3.6*); and special populations (*Section 3.7*). We conclude this chapter with a discussion of early findings (*Section 3.8*).

3.1 State Implementation

In this section, we present findings related to implementation of the ADK Demonstration and changes made by the state, practices, and payers when Medicare joined their ongoing multi-payer initiative. We focus on providing information related to a subset of the state implementation evaluation questions that lend themselves to being answered in the early part of the MAPCP Demonstration. Specifically, we address the following:

- What are the features of the state initiative?
- What changes did practices and payers make in order to take part in the ADK Demonstration and meet the participation requirements? What was involved in making these changes? What challenges did they face?
- What kinds of structural and organizational changes did the state, practices, and payers make to accommodate Medicare's participation in the ADK Demonstration and to better serve the needs of Medicare beneficiaries? How did administrative burdens and resource allocations change as a result of Medicare's participation?
- Does Medicare's participation in the ADK Demonstration have any spillover effects on the state's Medicaid program or private payers?
- What early lessons were learned?

The state profile in *Section 3.1.1* of this report draws on quarterly reports submitted to CMS by ADK Demonstration staff, monthly state/CMS calls, the October 2012 site visit, and other sources including news items and state and federal websites. *Section 3.1.2* presents a logic model that reflects our understanding of the link between specific elements of the ADK Demonstration and expected changes in outcomes. *Section 3.1.3* presents key findings gathered from the site visit and describes the implementation experience of state officials, payers, and providers. We conclude the State Implementation section with lessons learned in *Section 3.1.4*.

3.1.1 New York Profile as of October 2012 Evaluation Site Visit

New York implemented the MAPCP Demonstration by adding Medicare as a payer to the preexisting ADK Demonstration. The regional initiative began in northeastern New York in 2005 as a collaboration among local practices seeking to strengthen the region's beleaguered primary care system, with a specific focus on recruiting and retaining primary care physicians practicing in rural communities. As efforts grew, the New York State Association of Counties convened a 2007 Adirondack Healthcare Summit, at which planning began for a structured regional Demonstration program. Early project support came from an \$85,000 Rural Health Networking grant from the Health Resources and Services Administration, financial support from the National Association for Community Health Centers and the New York State Medical Society, and grant-supported practice transformation consulting from EastPoint Health. The New York legislature formally recognized the ADK Demonstration in statute in 2009. The ADK Demonstration officially began on January 1, 2010; Medicare began participating on July 1, 2011.

State environment. The New York State Department of Health (DOH) provides executive leadership for the ADK Demonstration. The state is also designated as a supervisor to provide immunity under the state action immunity doctrine, allowing payers to participate in anti-competitive practices for the purposes of the ADK Demonstration. The not-for-profit Adirondack Health Institute, Inc., (AHI) provides program oversight through its many roles, which include monitoring practice performance, aggregating clinical and financial data, planning

for long-term sustainability, and serving as the central hub for sub-regional care management activities. The 15-member multi-stakeholder Governance Council advises and guides AHI.

New York has a number of relevant programs operating in the ADK Demonstration area and across the state that may influence the health outcomes for participants in the ADK Demonstration or comparison group populations:

- A Section 2703 Health Home State Plan Amendment, which calls for a geographical phase-in of health home services for Medicaid and dual eligible beneficiaries, became effective January 1, 2012. The ADK Demonstration counties are included in the first phase.
- A Comprehensive Primary Care (CPC) Initiative is a multi-payer PCMH initiative in the Hudson Valley that also includes Medicare as a participant.
- New York received a State Demonstration to Integrate Care for Dual Eligible Individuals award. The demonstration better integrates Medicaid and Medicare services using managed long-term care.
- New York has a statewide Medicaid-only PCMH program, which makes incentive payments to practices with National Committee for Quality Assurance Physician Practice Connection Patient-Centered Medical Home (NCQA PPC[®] PCMH[™]) recognition. Practices participating in the ADK Demonstration are excluded, but comparison practices may be participating.
- New York has a CMS Community-based Care Transitions Program, which seeks to improve care transitions from the hospital to other care settings and reduce readmissions for Medicare beneficiaries.
- A \$7 million capital grant from New York to the ADK Demonstration for electronic health record (EHR) system adoption is intended to advance the PCMH model. Participating providers contributed more than \$7 million in matching funds.
- Health Information Exchange (HIE) development supports the regional Health Information Xchange New York (HIXNY) and ADK Demonstration.
- New York has numerous existing public health and disease prevention activities, including diabetes prevention, the Healthy Heart Program, and the Chronic Disease Self-Management program.
- New York received a pre-testing award through the State Innovation Model (SIM) initiative. The \$1,000,000 award will help the state further develop and refine the state's care innovation plan, which includes delivery system and data infrastructure improvements.

Demonstration scope. The ADK Demonstration is limited to practices in Clinton, Essex, Franklin, and Hamilton counties, an area of approximately 7,000 square miles bordering

Canada and Vermont, and select federally qualified health centers (FQHCs) in Saratoga, Warren, and Washington counties. The participating practices are grouped into three geographical Pods: Lake George, Tri-Lakes, and Northern Adirondacks. Each Pod, described as a “mini disease management company,” supports practices in its sub-region with shared services for patient outreach, health education, self-management, community resource integration and care coordination.

Table 3-1 shows participation in the New York ADK Demonstration at the end of the first year of the demonstration (June 30, 2012). There were 39 participating practices with attributed Medicare FFS beneficiaries. Most of the participating practices are small to medium in size (1–10 full-time equivalent physicians). At the end of year 1, the total number of participating providers was 180. The cumulative number of Medicare FFS beneficiaries that had participated in the demonstration for three or more months was 21,441.

Table 3-1
Number of practices, providers, and Medicare fee-for-service beneficiaries in the New York Adirondack (ADK) Medical Home Demonstration

Participating Entities	Number as of June 30, 2012
ADK Demonstration practices ¹	39
Participating providers ¹	180
Medicare fee-for-service (FFS) beneficiaries ²	21,441

NOTE: ADK Demonstration practices include only those practices with attributed Medicare FFS beneficiaries, and participating providers are the providers that are associated with those practices. The numbers of Medicare FFS beneficiaries are cumulative, representing the number of Medicare FFS beneficiaries that had ever been assigned to participating ADK Demonstration practices and participated in the ADK Demonstration for at least three months. ADK = Adirondack.

SOURCES: ¹ARC MAPCP Demonstration Provider File; ²ARC Beneficiary Assignment File (SAS Output tab52c.xls 07/30/2014). (See chapter 1 for more detail about these files).

In terms of all-payer participants, the state originally projected a total of 113,609 individuals would participate in the ADK Demonstration. The state reported the number of individuals enrolled was 94,690 as of the end of year 1 (June 30, 2012).

As of June 30, 2012, nine payers were participating: Medicare, Medicaid FFS, the state employee health plan, and six commercial payers. The commercial payers include both fully insured and administrative service only plans, some of which include Medicaid managed care plans. Due to the implementation of mandatory Medicaid managed care in the region, a large percentage of Medicaid FFS beneficiaries in the ADK Demonstration will continue to shift to the region’s participating Medicaid managed care plans throughout 2013.

Table 3-2 displays the characteristics of Adirondack-area practices participating in the New York ADK Demonstration as of June 30, 2012. There were 39 participating practices with an average of five providers per practice. Most of these practices were office-based (62.5%) and

just over one-third (35%) were FQHCs. These practices were located in a mixture of metropolitan, micropolitan, and rural counties.

Table 3-2
Characteristics of practices participating in the New York Adirondack Medical Home Demonstration as of June 30, 2012

Characteristic	Statistic
Number of practices	39
Number of providers	180
Average number of providers per practice	5
Practice type (%)	
Office based	62.5
Federally qualified health center	35
Critical access hospital	2.5
Rural health clinic	0
Practice location type (%)	
Metropolitan	18
Micropolitan	54
Rural	28

SOURCES: ARC Q4 MAPCP Demonstration Provider File and SK&A office-based physician data file. (See chapter 1 for more detail about these files).

In *Table 3-3*, we report demographic and health status characteristics of Medicare FFS beneficiaries who were assigned to participating ADK Demonstration practices during the first 12 months of the MAPCP Demonstration (July 1, 2011 to June 30, 2012). Beneficiaries with less than 3 months of eligibility for the demonstration are not included in our evaluation or this analysis. Of the beneficiaries who were assigned to ADK Demonstration practices during the first year of the MAPCP Demonstration, 23% were under the age of 65. Two out of five beneficiaries are between the ages of 65 and 75, 27% were between the ages of 76 and 85 and 10% were older than 85 with a mean beneficiary age of 70 years. Beneficiaries were almost all White (98%). Twenty-six percent of beneficiaries were classified as urban-dwelling, living in Metropolitan or Micropolitan Statistical Areas as defined by the Office of Management and Budget (OMB). According to the 2010 United States Census, two of the four counties in the ADK Demonstration were part of either a Metropolitan or Micropolitan Statistical Area. Fifty-six percent of beneficiaries were female, 24% were dually eligible for Medicare and Medicaid, and 32% were originally eligible for Medicare due to a disability. A very small percentage (less than 1%) of beneficiaries had end-stage renal disease or resided in a nursing home during the year prior to their assignment to an ADK Demonstration practice.

Table 3-3
Demographic and health status characteristics of Medicare fee-for-service beneficiaries
participating in the New York Adirondack Medical Home Demonstration from July 1,
2011, through June 30, 2012

Demographic and health status characteristics	Percentage or mean
Total beneficiaries	21,441
Demographic characteristics	
Age < 65 (%)	23
Ages 65–75 (%)	40
Ages 76–85 (%)	27
Age > 85 (%)	10
Mean age	70
White (%)	98
Urban place of residence (%)	26
Female (%)	56
Medicaid (%)	24
Disabled (%)	32
ESRD (%)	0.7
Institutionalized (%)	0.1
Health status	
<i>Mean Hierarchical Condition Category (HCC) score groups</i>	1.04
Low risk (< 0.48) (%)	26
Medium risk (0.48–1.25) (%)	49
High risk (> 1.25) (%)	25
<i>Mean Charlson Index score</i>	0.80
Low Charlson Index score (= 0) (%)	62
Medium Charlson Index score (≤ 1) (%)	19
High Charlson Index score (> 1) (%)	19
Chronic conditions (%)	
Heart failure	4
Coronary artery disease	13
Other respiratory disease	12
Diabetes without complications	16
Diabetes with complications	4
Essential hypertension	33
Valve disorders	3

(continued)

Table 3-3 (continued)
Demographic and health status characteristics of Medicare fee-for-service beneficiaries participating in the New York Adirondack Medical Home Demonstration from July 1, 2011, through June 30, 2012

Demographic and health status characteristics	Percentage or mean
Chronic conditions (%) (continued)	
Cardiomyopathy	1
Acute and chronic renal disease	6
Renal failure	3
Peripheral vascular disease	2
Lipid metabolism disorders	20
Cardiac dysrhythmias and conduction disorders	10
Dementias	1
Strokes	1
Chest pain	5
Urinary tract infection	4
Anemia	6
Malaise and fatigue (including chronic fatigue syndrome)	2
Dizziness, syncope, and convulsions	5
Disorders of joint	6
Hypothyroidism	5

NOTE: Percentages and means are weighted by the fraction of the year that a beneficiary met MAPCP Demonstration eligibility criteria. Demographic and health status characteristics are calculated using the Medicare Enrollment Data Base (EDB) and claims data for the one-year period prior to a Medicare beneficiary first being attributed to a PCMH after the start of the MAPCP Demonstration. Urban place of residence is defined as those beneficiaries living in Metropolitan or Micropolitan Statistical Areas defined by the Office of Management and Budget (OMB). ESRD = End-stage Renal Disease, HCC = Hierarchical Condition Category.

SOURCE: SAS Output tab52c.xls 07/30/2014.

Using three different measures—HCC score, Charlson Comorbidity Index, and diagnosis of 22 chronic conditions—we describe beneficiaries’ health status during the year prior to their assignment to an ADK Demonstration practice. Beneficiaries had a mean HCC score of 1.04, meaning that Medicare beneficiaries assigned to an ADK Demonstration practice were predicted to be 4% sicker in the subsequent year than an average Medicare FFS beneficiary. Beneficiaries had an average score on the Charlson Comorbidity Index of 0.80. Almost two-thirds of beneficiaries have a low (zero) score, meaning they did not receive medical care for any of the 18 clinical conditions contained within the index in the year prior to their assignment to a participating ADK Demonstration practice.

The most common chronic conditions diagnosed among the Medicare FFS beneficiaries were hypertension (33%), lipid metabolism disorders (20%), diabetes without complications

(16%), and coronary artery disease (13%). Fewer than 10% of beneficiaries were treated for the other 18 chronic conditions.

Practice expectations. New York requires all participating practices to obtain Level 2 or Level 3 NCQA PPC[®] PCMH[™] recognition within 12 months of joining the initiative, although this was extended to 18 months for some practices. Every participating practice met this requirement under the 2008 NCQA PCMH standards; as of December 31, 2012, all but one has achieved Level 3 recognition. New York also requires practices to:

- use an electronic prescribing system within 7 months of the program's start;
- participate in a disease registry and develop data reporting capabilities to enable reporting on access to care, clinical processes, clinical outcomes, and patient experience of care using common metrics and methods;
- offer expanded access requirements, including 24/7 telephonic access; and
- provide same-day scheduling for urgent care.

Support to practices. Commercial payers, Medicaid FFS, and Medicaid managed care plans began payments to participating practices on June 1, 2010 (retroactive to January 1, 2010). Medicare FFS payments began just over one year later, on July 1, 2011. In total, participating payers make an additional \$84 in payments per member per year for each patient participating in the ADK Demonstration, equivalent to \$7 per member per month (PMPM). Payers have the option of making this payment through either an enhanced visit rate subject to reconciliation or through a separate recurring payment. New York gave payers the discretion to decide the frequency of any recurring payments (e.g., monthly, quarterly, semi-annually).

Providers agreed to a payment arrangement where one-half of the \$7 PMPM payment is kept by the practices and the other half is split between the Pods and AHI. New York's MAPCP Demonstration application noted that as a monthly payment, \$3 would go to the Pod and \$0.50 would go to AHI. Each Pod has implemented the payment methodology somewhat differently to best complement the structure of their Pod.³²

In late 2012, stakeholders reached agreement on adding a \$0.50 pay-for-performance component to the payment methodology beginning in January 2013. The \$0.50 incentive will be paid out of the existing \$7 PMPM fee, and the incentive payments will be based on performance in following areas: member satisfaction; utilization (admission rates, preventable ER visits, and readmissions); and the development of a practice improvement plan. Between July 1, 2011, and June 30, 2012, practices (including portions received by AHI and the Pods) received a total of \$1,603,805 in Medicare MAPCP Demonstration payments for beneficiaries assigned to their practices during the first year of the demonstration.

³² In Pod 1 (Tri-Lakes), practices receive the \$7 PMPM, pay \$0.50 PMPM to AHI and purchase care management services from the Adirondack Medical Center. In Pod 2 (Lake George), Hudson Headwaters Health Network, which employs the providers and care managers, receives the full payment and pays \$0.50 PMPM to AHI. In Pod 3 (Plattsburgh), \$4 PMPM goes to the practices, who pay \$0.50 PMPM to AHI, and \$3.50 goes to the Pod.

Pod teams, in conjunction with health plans, are working across practices in their area to administer shared services for patient outreach, education, self-management, community-based resource integration, and care coordination. Although the structure and size of each Pod team is unique, they include an administrative director, a clinical care management leader, nurses, pharmacists, social workers, and health educators.

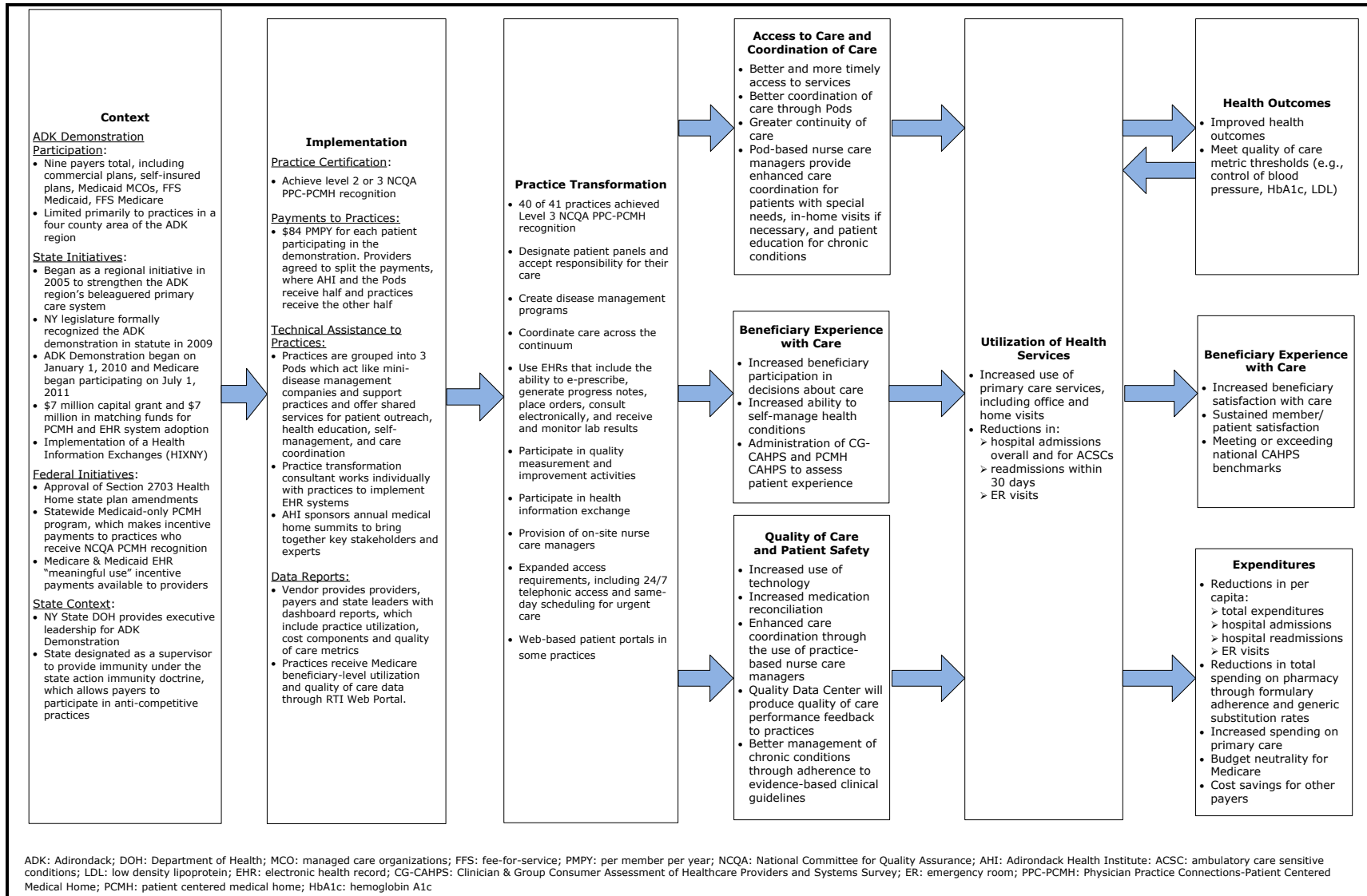
Data supporting providers and aggregate performance reporting will come from multiple sources. HIXNY is currently working collaboratively with the Massachusetts e-Health Collaborative (MAeHC) to build a physical infrastructure for clinical quality data storage and sharing. HIXNY uploads EHR data daily, and data are held in a data warehouse (Quality Data Center) housed by MAeHC. Additionally, Treo Solutions manages the program's all-payer claims database (APCD). The APCD and data warehouse provide the data necessary to allow participating practices, health plans, and the Pods to identify gaps in care, manage patient's chronic diseases, and support case management.

Treo Solutions has also begun to provide feedback reports, known as The Adirondack Region Medical Home Dashboard, to practices, Pod administrators, payers and state lead officials using an electronic provider dashboard that aggregates utilization and clinical quality measures at the Pod, practice, and provider levels. The dashboard includes patient survey data, utilization measures from the claims data warehouse (including Medicare FFS data provided by CMS), and quality measures taken from EHRs. Practices are able to use patient-specific data for quality improvement.

3.1.2 Logic Model

Figure 3-1 portrays a logic model of New York's ADK Demonstration. The left-hand side of the figure describes the context for the demonstration. These include the scope of the demonstration, other state and federal initiatives that affect the ADK Demonstration and the key features of the state context that affect the demonstration. The demonstration context informs implementation, which incorporates a number of strategies to promote transformation of practices to PCMHs. Beneficiaries in these NCQA-recognized Level 2 and 3 practices are expected to have better access to care and more coordinated care; to receive safer, higher quality care; and to be more engaged in decision making about their care and management of their health conditions. These improvements promote more efficient utilization patterns, including increased use of primary care services and reductions in inpatient admissions, readmissions within 30 days after discharge, and emergency room (ER) visits. These changes in utilization patterns are expected to produce improved health outcomes (which can, in turn, reduce utilization), greater beneficiary satisfaction with care, changes in expenditures consistent with utilization changes, and reductions in total per capita expenditures, resulting in budget neutrality for the Medicare program and cost savings for other payers in the demonstration.

**Figure 3-1
Logic Model for New York ADK Medical Home Demonstration**



ADK: Adirondack; DOH: Department of Health; MCO: managed care organizations; FFS: fee-for-service; PMPY: per member per year; NCQA: National Committee for Quality Assurance; AHI: Adirondack Health Institute; ACSC: ambulatory care sensitive conditions; LDL: low density lipoprotein; EHR: electronic health record; CG-CAHPS: Clinician & Group Consumer Assessment of Healthcare Providers and Systems Survey; ER: emergency room; PPC-PCMH: Physician Practice Connections-Patient Centered Medical Home; PCMH: patient centered medical home; HbA1c: hemoglobin A1c

3.1.3 Implementation

This section uses primary data gathered from the site visit to New York in October 2012 and presents key findings from the implementation experience of state officials, payers, and providers to address the evaluation questions described in *Section 3.1*.

External Factors Affecting Implementation

The ADK Demonstration was the brainchild of Dr. John Rugge, President and CEO of Hudson Headwaters Health Network. It was developed to address a primary care shortage made worse by difficulty in retaining physicians in the Adirondack region of the state. State officials, payers, and providers made it clear that this program would not have been possible without Dr. Rugge's vision and leadership.

The New York State DOH played an integral role in the development of the ADK Demonstration. Through an antitrust provision in the enabling legislation, the New York State DOH created a stakeholder engagement process, often referred to as "the table," that gave payers and providers an equal voice—something that had not happened before and was considered to be crucial to the success of the ADK Demonstration. Getting all of the original payers to the table was challenging, however, as some were not eager to participate. Although the program was not mandatory, the state used its influence to ensure that all of the region's major insurers participated in the program. One payer claimed, "This wasn't a voluntary program for us necessarily. But after getting into it, it has been very positive for us." One payer described the results of the stakeholder engagement process as "unbelievable," noting that payers were able to come together as a group and talk about ways to improve the quality of care without competition. Specific to the provider-payer relationship, one payer mentioned, "We are now a lot more collaborative [with providers] than we were a couple years ago." A state interviewee described the intention of the stakeholder engagement process as "trying to make the payers' problems the providers' problems and the providers' problems the payers' problems."

Because the ADK Demonstration is confined to one region and includes the region's dominant payers, other initiatives (including private payer medical home efforts and the statewide Medicaid-only PCMH program) do not have a real impact on the demonstration, except to the degree that they help to make PCMHs the prevailing style of practice in the state. However, because AHI was designated as a Medicaid Health Home through New York's first health home state plan amendment, participating practices will receive additional support for eligible Medicaid individuals with complex medical and behavioral health needs.

Evolution of Demonstration Implementation with Medicare's Entrance

Structural and organizational changes needed to accommodate Medicare. Adding Medicare as a payer to the ADK Demonstration did not require any structural, organizational, or programmatic changes. One state official described the addition of Medicare as "seamless." With New York's ADK Demonstration in operation for 18 months before Medicare's entrance, many of the obstacles of implementation had been overcome by the time Medicare joined.

Attribution and enrollment before and after Medicare's entrance. One payer described attribution as "one of the bigger challenges of the project," explaining that having everyone agree on a common methodology, timing, and frequency was difficult. The attribution

model caused a delay in initial payments (before Medicare began participating). One payer noted, “We dragged our heels initially getting the payments out. The reconciliation was the biggest challenge, getting providers to agree with plans [on who the attributed members were] for each cycle.” One Pod applauded Medicare’s patient assignment process, which allowed for faster payments to providers than commercial plans were able to accomplish at launch.

Despite the initial problems, payers noted that the process became easier over time. One stakeholder believes there is still room for improvement though, claiming that a centralized attribution process would increase the number of participants by 5%–10%.

Changes in resource allocation and financing as a result of Medicare’s participation.

During the development of the ADK Demonstration, stakeholders in New York agreed on the need to develop a single payment rate for all participating payers. Dr. Foster Gesten, the Medicaid Medical Director and state facilitator for the stakeholder group, was able to get payers and practices to compromise at \$7 PMPM. When Medicare entered the state initiative, CMS agreed to pay the same amount, which avoided the state having to make any changes to the payment methodology. This resulted in a sense of shared responsibility, or, to quote one payer, “We’re all in this together.” Despite the agreement, multiple interviewees representing the state and the Pods felt that the payment was lower than what practices need to invest in PCMH infrastructure and deliver enhanced care to all patients.

Payers and providers were far apart initially on the monthly payment amount. In the initial discussions, the providers requested between \$10–12 PMPM, while payers offered between \$2–3 PMPM. One payer quipped, “The meetings were a lot more fun before we started talking about money.” Payers challenged the higher payments, arguing that many of the practice transformation costs were “one-time capital investments.” One payer commented that it was reasonable to consider reducing the PCMH payments over time.

As described in *Section 3.1.1*, the payment methodology is undergoing some modification. From the \$7 PMPM, \$.50 will be set aside for a pay-for-performance program. However, one payer felt that performance-based payment modifications were premature without meaningful data showing a return on investment or improved health outcomes: “There’s been talk about a gain-sharing ability over the next year—we don’t even know where we are yet, so how can we give them gain-sharing?”

One payer expressed the concern that because the providers do not submit a claim for payments, the payments could be construed as administrative costs as opposed to medical costs. If the \$7 PMPM is deemed to be an administrative cost, this would negatively affect the payers’ ability to meet medical loss ratio requirements (to spend a minimum percentage of premiums on medical care) and could trigger mandatory penalty rebates to subscribers.

Spillover effects on Medicaid and private payers as a result of Medicare’s participation. Medicare’s entrance to the ADK Demonstration had a positive spillover effect on the region’s providers and Medicare beneficiaries. Payers (and practices) welcomed Medicare because Medicare was the only major payer in the region that was not already participating in the ADK Demonstration. Several stakeholders across all interviewee categories (state officials, practices, payers, and Pod staff) noted a significant morale boost that came with Medicare’s

participation. Stakeholders echoed three reasons to celebrate Medicare's joining. First, Medicare payments gave practices a substantial infusion of resources that allowed them to provide better care for a population that, on average, needs additional care management and coordination services. One payer estimated that Medicare accounts for nearly one-quarter of the patient volume in the participating Adirondack practices, so Medicare payments "provided [practices] with incredibly more resources." Second, Medicare payments provided sustainability. One practice commented, "There was a time when the demonstration was in jeopardy because Medicare was not in." Third, Medicare's participation engendered a feeling of confirmation. Having Medicare join "validated that what we're doing is seen as something worthwhile," according to one practice.

However, payers and providers were clear that Medicare Advantage is still noticeably absent, which they find problematic for several reasons. Practices and Pods commented that providers treat all of their patients the same, regardless of payer. This means that the practices and Pods are not being reimbursed for the enhanced care being provided to Medicare Advantage enrollees. Medicare Advantage plans cited financial concerns that they are unable to make the \$7 PMPM payments for their Medicare Advantage members without financial support from CMS. One payer noted that Medicare's participation for Medicare FFS enrollees is actually influencing physicians not to accept Medicare Advantage: "Providers won't join the Medicare Advantage program because the patients will transition from Medicare FFS to Medicare Advantage, and the providers will lose the \$7 PMPM."

Impact of data systems in the ADK Demonstration. The New York ADK Demonstration has benefitted from the state's substantial investment in supporting health IT through a series of capital grants authorized by the Health Care Efficiency and Affordability Law for New Yorkers (HEAL NY). One phase (HEAL 10) specifically supported the development of a health IT infrastructure to support PCMHs. As mentioned above, the ADK Demonstration received \$7 million in matching funds as part of this grant program.

All of the participating practices have implemented an EHR as part of the demonstration; however, payers, Pods, and practices all described interoperability issues. One Pod noted that their practices used six or seven different systems in total, and both Pods and practices recommended that the state either contract with one vendor or develop a single set of guidelines to ensure communication across systems. One Pod pointed to the vendors as the barrier to integration, stating "The EHR vendors need to get up to speed on what's happening and be more receptive to making changes in their software."

Stakeholders also expressed concerns about the data provided to practices through the data warehouse and APCD. Pods and providers felt that the quality and timeliness of data provided through these tools needed improvement. One Pod expressed that they "have better data than the quality data center will ever have." The Pod also stated that the data provided by Treo was "old," but nonetheless contained elements not available through the Medicare data available from the RTI web portal.

Impact of technical assistance to practices in the New York ADK Demonstration. New York and the three Pods have provided a great deal of technical assistance to participating providers, including access to a practice transformation consultant, annual medical home

summits, and regular meetings and conference calls. By the time Medicare joined the ADK Demonstration, the practices had already achieved the required NCQA PPC[®] PCMH[™] recognition, with all but one achieving the highest possible tier. Stakeholders did not indicate that Medicare's entrance into the Demonstration required any new or additional technical assistance. No problems were reported in the implementation or delivery of technical assistance before or after Medicare's entrance. One state official posited that the state's continued role in technical assistance will be focused on data and analytics.

3.1.4 Lessons Learned

Overall, the ADK Demonstration is viewed as a success. State leaders view the ADK Demonstration, and the medical home model as a whole, as an integral part of their overall health care transformation strategy. One state official noted that support within the state is bipartisan and crosses both the executive and legislative branches of government. The ADK Demonstration is often used as an example of the type of program that the state hopes to replicate statewide, and New York continues to find new avenues to do that.

Payers are noticeably frustrated with the lack of data showing either a positive return on investment or an improvement in health outcomes for participants compared to patients outside of the demonstration area, but they reported that they are not in a position to leave the demonstration early. For many payers, the decision to continue to support the model after the ADK Demonstration ends depends on cost savings and return on investment. However, at least one payer has faith that the PCMH model is an improvement over business as usual: "Conceptually, I think it will show positive results, but we needed the data earlier. We've made a lot of investment, but nothing has really come out of it yet."

Practices are taking a longer view, and many do not expect that outcomes will show measurable improvement before the end of the demonstration. One practice said, "I worry that it will come to the end of demonstration, and we won't have had enough time with a powerful enough intervention to show a big effect. The result will be that people will say it didn't work. This should be a longer term project than three years." A second practice urges everyone to "be patient," contending that "this could save a sizeable chunk of money in the long run, [but] the long run isn't going to be five years—it's going to be ten or fifteen years."

It remains to be seen what impact, if any, the new initiatives that New York is undertaking (particularly the CPC initiative and SIM initiative, if awarded) will have on the ADK Demonstration, but their effect will be tracked closely over the next two years. The implementation experience and impact of putting \$0.50 PMPM at risk in 2013 will also be of particular interest, especially with one payer claiming that its goal is to transition the entire PCMH payment to a risk-based arrangement.

3.2 Practice Transformation

This section seeks to answer evaluation research questions related to features of the practices participating in the ADK Demonstration, changes that practices made in order to take part in the ADK Demonstration and meet participation requirements, technical assistance to practices, early views on the payment model, and experiences with the demonstration thus far.

We rely upon findings from our initial site visit and secondary data provided by the state to answer these research questions.

3.2.1 Changes Practices Made to Join the Demonstration

In order to participate in the ADK Demonstration, practices had to make a number of changes related to NCQA PPC[®] PCMH[™] recognition, practice administration, and health IT.

PCMH recognition. Most practices believed they were providing at least some PCMH features before the ADK Demonstration began in 2010, yet none had NCQA PPC[®] PCMH[™] recognition and most had no clear resources for care coordination services. In January 2010, EastPoint Health was commissioned to survey the practices on behalf of the New York State DOH. At this time, just before the ADK Demonstration began, none of the practices met all of the NCQA “must pass” criteria for PPC[®] PCMH[™] recognition, only one practice met the access standard criteria, and only one practice was in compliance with coordination of care standards. The remaining practices scored particularly poorly in the coordination of care category, garnering only 34% of the potential points available. The relative bright spot was in regard to health informatics—all of the practices had high-speed internet access, 82% had a functioning EHR, and two-thirds were using e-prescribing.

Participation in the ADK Demonstration, therefore, entailed a great number of changes for most of the practices. For some, the largest change during the PCMH transformation was cultural. One provider told us, “The difficult part was the thought process changes that had to happen when you fully commit to the medical home process.” Similarly, another provider noted: “The main challenge two and half years into it was a change in culture and way of thinking.”

Achieving PCMH recognition was one of the largest challenges practices faced. The practice transformation consultant from EastPoint Health was key to helping practices make the transition to NCQA PPC[®] PCMH[™] recognition. As in other states, relative to large practices, the smaller practices struggled to meet PCMH expectations. One practitioner summed up the sentiments raised by many of the practitioners we spoke with: “Recertification [for NCQA] is a waste of my time. The cost of my staff time is what I look at. It kills morale to have staff worrying about this regulation when we really just want to take care of our patients. If we really believed it was a step toward helping patients, we would do it.”

Providing enhanced care management and coordination services was also a major change for all practices we spoke with, as was the incorporation of new EHRs into the practice workflow. Several practices also acknowledged that the new expectation to improve documentation and data capture was especially challenging. One practice explained: “What was the hardest part? Checking boxes; creating and entering data into data fields; that’s the hardest thing. It wasn’t working extended hours or coordinated care, although other practices were challenged in that area. For us it was the mechanics of data entry.” However, most practices quickly developed functional EHR systems and other health IT related to NCQA PPC[®] PCMH[™] recognition.

Administrative changes. Most practices redesigned staff roles, leading to role refinements, new assignments, and clarification of how the practice would function as a team. These changes encouraged staff to practice “at the top of their license.” Most practices had

started to use “team huddles,” and most increased the frequency of staff meetings. Many practices incorporated new processes of care, like using pre-visit planning or checklists, post-visit summaries, reminders to have laboratory tests done before the visit, and more comprehensive screening assessments during the visit.

Some of the practices had been able to incorporate staff to provide behavioral health care services, and one of the Pods employed a social worker who specialized in this area. The practices that lacked these resources mentioned that providing mental health services was an especially important element of providing comprehensive primary care, and they lamented that they were not able to meet this need.

Health information technology. All but one of the practices interviewed during the site visit had started using an EHR. The functionalities typically included the ability to e-prescribe, generate progress notes, place orders and consults electronically, and receive and monitor laboratory results.

In one Pod, the practices all used the same EHR, which successfully interfaced with the local hospital. This greatly facilitated sharing data between outpatient and inpatient sites; the ability to easily view notes and consultations and to check on the status of pending tests was especially important for care coordination. In the other two Pods, the practices had selected different EHRs, which seemed to hamper data sharing. In these Pods, patient data are transferred via fax.

More than one of the practices we spoke with cited a need for health IT support. As small practices, they were struggling to maximize their EHRs' functionality and lacked resources within their practices or Pods to help with this.

The practices we spoke with were all starting to use disease registries, typically generated by the reporting functionality of their EHRs. A pediatric practice, for example, tracks body mass index (BMI) in both individual patients and their entire patient population through their EHR reporting functionality. In addition to EHR-based disease registries, limited registry-type data are being provided by some of the commercial payers, and immunization data are provided through a state registry.

Some practices use Medicare beneficiary utilization files and quarterly practice feedback reports provided via the RTI web portal. The Medicare beneficiary utilization files provide beneficiary-level information on patient severity (using HCC scores), disease-specific quality of care measures and utilization information (including hospitalizations and ER visits). Practice feedback reports provide data on a quarterly basis related to quality of care, coordination and continuity of care, and Medicare payments for Medicare FFS beneficiaries assigned to a practice. Our site visit found providers generally favorable about receiving these reports. Practices were also starting to receive and use the Treo Solutions Dashboard. At the time of this annual report, New York was preparing the Quality Data Center, a repository for EHR-based clinical data that will contain quality-of-care metrics; it is anticipated to be operational in early 2014.

3.2.2 Technical Assistance

Practices in the ADK Demonstration received several different types of support and technical assistance. By far, the one judged most valuable by the practices we spoke with was the assistance they all received from the practice transformation consultant at EastPoint Health. Under this arrangement, the consultant visited each of the participating practices, supported their efforts to write their NCQA PPC[®] PCMH[™] recognition applications, and guided them step-by-step through the recognition process.

AHI has sponsored two annual Adirondack Medical Home Summits, which involved key stakeholders from state initiative leadership, providers, and payers. The summits have been used to review progress in the ADK Demonstration and to provide technical assistance to practices on PCMH-related activities. Providers perceived the summits as valuable. In addition, AHI recently received a grant from the New York State Health Foundation to support peer-to-peer coaching, where leaders from a practice will be able to visit other sites to share lessons learned and best practices.

3.2.3 Payment Supports

Funds from the ADK Demonstration were allocated in various ways, most commonly to support care coordination by hiring registered nurses (RNs) or medical assistants. One small solo practice had used the funds to help hire two physicians, without which the solo practitioner would have retired. The practices generally applauded the fact that nearly all payers in their region were participating in the demonstration. Medicare's participation in the ADK Demonstration was welcomed financially and it gave a large psychological boost to the practices. A provider emphasized the importance of the Medicare's financial support: "Without Medicare and any money that came with it, we would have run out of gas."

Although most practices interviewed during the site visit were satisfied with the PMPM (or other recurring payment) approach, most felt that the amount was not enough to fully support an ideal medical home practice. More than one practice expressed that they would have preferred to receive financial support through comprehensive primary care payment reform. Primary care payment reform was perceived as being more sustainable in the long run, and more satisfying in terms of recognizing the importance of primary care relative to subspecialty care.

A serious and universal concern was that the ADK Demonstration funding might end. Several practices expressed fears that the upstate medical system would collapse. One practice lead told us, "If the demonstration ends, and we don't have some version going forward of an agreement with the payers, there will be a mass exodus of physicians from this area."

Providers viewed the ADK Demonstration as an overwhelming success. Most felt that the demonstration had achieved one of its primary goals—helping attract and retain medical professionals in this underserved area of the state. One provider commented, "The whole health care system was on the verge of collapsing. We think we've done a real good job of stemming that."

More importantly, all of the practices relayed anecdotes of meaningful improvements in quality of care and patient and staff satisfaction. The ADK Demonstration helped practices in

the process of transforming into medical homes. One practitioner pointed out the benefits of redefining the roles of the staff in the practice: “Pros [of the demonstration] are better patient care, better staffing, getting people to work to the top level of their license so it is redistributing the workload. Physician and mid-level providers can focus on more serious patients, doing high-level medical care, and nurses can be doing mid-level care.” Another staff member pointed out how the demonstration helped to create a more optimistic outlook: “We are really working harder at keeping our patients healthy, looking at the bigger picture.”

3.2.4 Summary

Providers viewed the ADK Demonstration as an overwhelming success. Most felt that the demonstration had achieved one of its primary goals—helping attract and retain medical professionals in this underserved area of the state. The ADK Demonstration helped practices in the process of transforming into PCMHs. One practice staff member told us, “It was really fun because the benefits just slap you in the face.” Another practitioner pointed out the benefits of redefining the roles of the staff in the practice: “Pros [of the demonstration] are better patient care, better staffing, getting people to work to the top level of their license so it is redistributing the workload. Physician and mid-level providers can focus on more serious patients, doing high-level medical care, and nurses can be doing mid-level care.” A final comment summarized the change in viewpoint engendered by the demonstration: “We are really working harder at keeping our patients healthy, looking at the bigger picture.”

3.3 Quality of Care, Patient Safety, and Health Outcomes

3.3.1 Implementation of State Initiative and Practice Features Expected to Improve Quality of Care, Patient Safety, and Health Outcomes During Year 1

This section of the report focuses on evaluation research questions related to the level of evidence demonstrating that features of the ADK Demonstration have resulted in practice changes to improve the quality of care, patient safety, and health outcomes for Medicare and Medicaid beneficiaries. We describe findings from our initial site visit.

In the absence of demonstration-wide quality of care performance metrics, participating practices have been relying on EHR system capabilities to keep them apprised of their performance relative to quality of care processes, particularly in the context of care coordination and other initiatives to improve patient care across certain conditions (e.g., congestive heart failure, coronary artery disease, diabetes, chronic obstructive pulmonary disease). Practices hope to see more quality of care and health outcomes data in order to continue honing interventions and focusing resources on problem areas and complex patients. The Quality Data Center, still under development, is the tool that state leaders hope will provide all stakeholders with these missing data. State leaders, payers and providers are uniformly concerned that positive impacts on quality of care and health outcomes may not be realized immediately. Improvements could take several years, and in these early years when all payers are committed to the demonstration, improvements may be smaller than leaders, payers, and providers would like.

Practice activities expected to improve quality of care are mostly happening through the demonstration’s care management teams, staffed by advanced care nurses who are usually RNs or, occasionally, nurse practitioners (NPs). Care managers provide intense care management

support to patients, as well as assist patients in coordinating care across multiple providers and settings. Care managers typically cover several practice locations and work as a team with a practice's nurses, mid-level providers (NPs and physician assistants), and physicians to address the needs of patients with specific conditions.

Care managers see patient education as a critical piece of the PCMH model. Care managers educate patients with chronic conditions on self-management techniques, such as encouraging patients to initially call or seek care with their primary care doctor's office or clinic rather than show up at a hospital ER, follow through on their scheduled screenings (e.g., colonoscopy, diabetic foot and eye exams, HbA1c tests), and medication adherence.

Health IT capabilities and the existence of EHR systems in all demonstration practices allow for smaller-scale quality measure data collection and performance monitoring. One provider said that "there are distinct advantages to the medical home way of thinking—the notion that you can use health IT to better coordinate care and that quality metrics are being adhered to." Pod 2 leaders reported that their Athena EHR system is used to review physicians' adherence to evidence-based guidelines and chronic care protocols. Furthermore, the EHR's built-in alerts direct providers' attention during appointments to patients' needs for better prevention and monitoring of chronic conditions. For example, these alerts may include prompting providers to draw blood or conduct a foot exam for diabetics. Several providers reported that the EHR's care alerts were helpful in reminding them to complete steps in care.

Health IT also plays an important role for the ADK Demonstration in seeking to improve quality of care. In the demonstration's Guidelines for Participation, all providers agreed to participate in an organized disease registry and develop data reporting capabilities to enable reporting on access to care, clinical processes, clinical outcomes, and patient experience of care using common metrics and methods. Pods 1 and 3 have a data statistician who pools quality measures from the multiple EHR systems within the Pods to create a dashboard, which allows them to see if they are meeting their goals. Pod 2 has a contract with an EHR system provider to customize their EHR to help institute and make systematic improvements in advanced primary care delivery and care coordination.

Physicians also view the Medicare beneficiary utilization files and quarterly practice feedback reports they receive from RTI favorably and see them as a supplemental resource to their overall portfolio of both patient-level and practice-level data used for monitoring quality performance. The providers appreciate that they can view their practice's performance of quality of care measures for their Medicare FFS patients.

Improving medication safety has been one of the first steps to improve overall patient safety in the ADK Demonstration. Before the ADK Demonstration began, providers reported that medication reconciliation was performed on paper and was not standardized or accessible to all provider levels (i.e., nurses and mid-level providers). With EHR systems, providers can now easily find medication and patient formulary information, as well as alerts of potential drug interactions and medication adherence details. Through the EHR's e-prescribe capability, nurses and physicians can see which medications have been filled to monitor medication adherence and communicate with the patient about any issues during a clinic or office visit. In Pods 1 and 3, it was reported that up to 98% of practices were using e-prescribe capabilities by July 2010. While

not implemented specifically because of the ADK Demonstration, Pod 2 developed a Transitions Care program, whereby care managers perform medication reconciliation at discharge as patients leave the hospital and return to the community under the care of their primary care physician.

Several providers and Pod staff members reported positive impacts of the ADK Demonstration. One physician leader from Pod 2 commented, “Patients are doing so much better. They love it. You can tell by looking at numbers on paper, but looking at human beings you can really tell.” Another physician leader from Pod 3 said, “The demonstration has absolutely made a difference” in patient care. Several providers across Pods and a care manager from Pod 3 reported that, in their experience, medication reconciliations had prevented medication errors from occurring. Several Pod 2 providers and Pod leadership reported that readmissions to the local hospital had dropped, although a provider noted this may not be linked to the demonstration.

3.3.2 Impacts on Quality of Care, Patient Safety, and Health Outcomes

Quantitative data assessing the impacts of the ADK Demonstration on quality of care, patient safety, or health outcomes on Medicare beneficiaries are not yet available. Future annual analyses and reports will attempt to assess the impact on these outcomes. Beginning with the second annual report, we will include descriptive and, where appropriate, multivariate analyses of process of care quality indicators, EHR Meaningful Use rates, prevention quality indicators, as well as outcomes on mortality, and incidences of serious medical events, using Medicare data. We will also provide results on self-reported health status based on the PCMH-Consumer Assessment of Healthcare Providers and Services (CAHPS) survey.

3.4 Access to Care and Coordination of Care

3.4.1 Implementation of State Initiative and Practice Features Expected to Improve Access to Care and Coordination of Care During Year 1

This section of the report focuses on evaluation research questions related to the level of evidence that the ADK Demonstration has resulted in more timely delivery of health services, better or enhanced access to a medical home provider, and better coordination and continuity of care for Medicare and Medicaid beneficiaries. We describe findings from our initial site visit.

To improve access to care and coordination of care, participation in the ADK Demonstration required practices to achieve NCQA PPC[®] PCMH[™] Level 2 or Level 3 status within 12–18 months and several other specific measures targeting access, including requirements to provide 24/7 telephone access and same-day scheduling. During the Year 1 site visit, the state confirmed that all ADK Demonstration practices met the expectations regarding access and coordination. Importantly, all of the practices achieved NCQA PPC[®] PCMH[™] recognition, which implies compliance with the NCQA “must pass” elements regarding access during and after office hours, implementing a care management program, and tracking referrals and follow-up.

Before the ADK Demonstration, there was substantial variability in whether practices offered expanded access. Some practices had already implemented same-day access and after-hours coverage, as summarized by this practice interviewee: “Everything was already there.

Open access was already there and had been for years.” In contrast, there were several practices that had not considered expanding access until the ADK Demonstration required it.

Several practices, and the ADK Demonstration itself, had undertaken educational programs to inform patients about the expanded access opportunities available. Several practices commented on the need to educate patients on how to take advantage of the expanded access offered by the PCMH: “Part of it has been a community-wide blitz, to say you’re not going to get better care in the ER, we are open 7 days a week and have 24-hour access. Why would you go to the ER? That has had a big impact. We have been in practice 7 years and patients are still surprised when they hear we are open on Sundays.” Only a few practices had started patient advisory councils to help educate and get input from patients.

Practices expanded access through various modalities. Some of the adult practices improved on call rotations within the practice or across practices so that the night call burden was shared, but with the assurance that a physician was always available to receive calls from patients. One Pod has arranged an after-hours nurse-led phone triage system to expand evening access. The pediatric practices created a shared after-hours call portal allowing patients to reach a pediatric nurse, who had access to an on-call pediatrician. One of the pediatricians emphasized how novel this was for their practice: “The other thing we did is they [the Pod] hired an after-hour nursing triage service. Now we have a contracted pediatric nurse, and all pediatricians share on call, which is a miracle.” Despite these many advances, some sites, particularly the smaller practices, were still struggling with how to arrange access during the evening and night hours. Several practices relied on the availability of two urgent care clinics co-located in the county, but not affiliated with the ADK Demonstration, to provide expanded access for their patients.

Some practices implemented web-based patient portals that allow patients to schedule appointments, request medications, and participate in asynchronous “chats” with their providers. The practices reported surprisingly high participation rates among their patient base. One provider noted that caretakers used these resources even when the patient did not.

Some practices were taking advantage of ride vouchers and arranged transportation (coordinated through their Pod) to facilitate patient visits. In one region, a new transportation program provided no-cost rides to medical appointments for individuals aged 60 and older. The Pods were also able to offer limited support in other areas, including services from pharmacists, social workers, and behavioral health consultants. One Pod sponsored an online community health resource directory. During the period April–June 2012, the directory logged 820 online visits.

Many practices had starting using their care managers as another solution to expanding access. For the patients on their rosters, the care managers acts as a key medical intermediary, supplementing the relationship with the physicians. Similarly, practices expanded access by developing new roles for their office-based staff and encouraging everyone to practice “at the top of their license.” As noted above, an in-house, nurse-led phone triage system was adopted by one practice to maximize use of their nursing staff skills.

Most practices provided at least some internal care coordination before the ADK Demonstration, but the extent varied. Care coordination services were considerably enhanced by new care management and coordination programs coordinated by the Pods. The additional funding provided by Medicare joining the ADK Demonstration was critical in supporting the Pod-based care managers: “What Medicare joining did was the contribution of dollars for proper care coordination, both here and at the hospital and in the Pod, the pharmacist, etc. We couldn’t have done that without the dollars from Medicare.”

The care coordination program is centralized in one Pod (all of the care managers are based at the Pod office in the regional hospital), but decentralized in the other two. In the decentralized Pods, the care managers spend most or all of their time at each of their assigned practices. Although the services offered and their management and oversight varies in these different circumstances, the care coordinators generally provide a similar set of core services. One of these common services is to coordinate care for “transition” patients who were recently hospitalized or seen in the ER. Pod 2 reported that their care managers use the Care Transitions model designed by Eric Coleman to prevent 30-day readmissions.³³ Getting names of patients with high utilization rates on a timely basis depended on the hospital involved, but the care coordination program seemed to be working well at most sites. None of the sites had offered this type of care coordination before the state of New York entered the MAPCP Demonstration, and the practices generally felt that this program was going to be one of the keys to avoiding readmissions.

Despite the lack of a uniform quantitative approach to measuring access, the ADK Demonstration has prompted a number of changes designed to improve access by moving towards enhanced access (e.g., same day appointments), enhancing after-hours coverage, and establishing novel communication pathways (e.g., through patient portals or by using care managers). Smaller practices seemed to have struggled more with improving access and care coordination and were less successful compared to larger, integrated practices. We learned during the Year 1 site visit that some smaller practices did not have the resources to employ full-time or dedicated care coordinators that was more common among larger practices in Pods 1 and 3, and for all the practices within the Federally Qualified Health Center (FQHC) network that makes up Pod 2. A major challenge remains educating patients to take advantage of the enhanced access and other benefits of the medical home. One provider summarized the problem: “The community is overall unaware of the changes we’ve made. I don’t know if they know. Is their care coordination better? Absolutely. Are we following national guidelines closely? Yes. Do they know it? Probably not.”

Providing care coordination through the centralized regional resource seems to offer a number of attractive advantages relative to the decentralized model, in which care coordinators are embedded within the practices. A key advantage of the centralized model is the ability for the care managers to cross-cover each other. The centralized program is also able to provide

³³ The Care Transitions Program aims to improve quality and safety during times of care “hand-offs” by: (1) enhancing the role of patients and caregivers in improving the quality of their care transitions across acute and post-acute settings; (2) measuring quality of care transitions from the perspective of patients and caregivers; (3) implementing system-level practice improvement interventions and (4) using health information technology to promote safe and effective care transitions.

training programs for its staff, for example, on caring for patients with chronic obstructive pulmonary disease (COPD), end of life care, tobacco cessation, diabetes counseling, and motivational interviewing. Centralization also facilitates the development of standard policies and procedures for the care managers, and the use of standardized templates. Finally, the centralized resource is able to offer the same catalogue of services to all the practices in their area.

Some disadvantages of the centralized model were also pointed out. The care managers are not on-site at the practices, are not as well integrated into the practices, and are not always available to the practice or its patients (services are provided by appointment). One practitioner summed up the problems of using a care manager based elsewhere: “You can’t do care management unless it is tied to a trusted primary care provider. A phone call from a nurse in Kansas won’t do the job. We don’t know what we’re doing; we don’t know how many care managers we need.”

Care managers also focused on coordinating medical care for complex patients with multiple comorbidities and complex psychosocial needs. These patients were typically identified by the physicians at the time of the patient’s visit, but some practices were starting to use analytic approaches to identify these patients (e.g., data on Medicare beneficiaries’ utilization available through the RTI web portal). Other practices identified specific cohorts on which to focus, like diabetic patients with HbA1c values over 9.

Besides providing enhanced care coordination for patients with special needs, the Pod-based nurse coordinators helped with patient education, provided home visits for patients unable to make office visits, and in one Pod offered pre-visit coordination by ensuring all tests and consultations had been completed and all appropriate preventive health services had been addressed.

3.4.2 Impacts on Access to Care and Coordination of Care

Quantitative data assessing the impacts of the ADK Demonstration on access to care and coordination of care on Medicare beneficiaries are not yet available. Future annual analyses and reports will attempt to assess the impact on these outcomes. Beginning with the second annual report we will include descriptive and multivariate analyses of several indicators of access to care and coordination of care. Claims-based indicators will include primary care physician and specialist visit rates; ratio of primary care visits to total ambulatory care visits; percentage of discharges from the hospital for a medical admission with a follow-up visit within 14 days; rate of unplanned readmissions within 30 days after discharge; the percentage of ER visits that do not lead to a hospitalization; and a continuity of care index, which measures the concentration of visits among providers in the practice that is the beneficiary’s usual source of care or to whom the beneficiary was referred by a provider in that practice. In addition, we will analyze a measure of care coordination based on responses to the PCMH-CAHPS survey.

3.5 Beneficiary Experience with Care

3.5.1 Implementation of State Initiative and Practice Features Expected to Improve Beneficiary Experience with Care During Year 1

Several features of New York’s initiative were specifically intended to improve patient experience with care, including better access to and coordination of care, adequate time and guidance from providers during a patient’s scheduled appointment, assistance with self-management to empower patients to manage their health, support for prevention and wellness activities, and help with transitions of care between care settings and multiple providers.

Care managers play a major role in patient engagement and teaching self-management. Care managers in one Pod go through national health coaching certification. Instead of saying, “I’ll call the health center for you,” care managers are teaching patients the skills necessary to perform self-care activities for themselves.

Health IT also plays a role in patient engagement and self-management. EHRs provide patients with printed lists of “dos and don’ts” for a particular condition, literature about a disease/condition, and blurbs about their history, medication, and providers. Patient portals are used frequently in the practices to engage patients in their care, and providers report patient enthusiasm with this tool.

Most of the practices in Pods 1 and 3 do not conduct formal patient experience surveys. Pod 2 conducts in-house patient satisfaction surveys with all the health centers and shares results with lead physicians. In May through July 2011, AHI administered the CG-CAHPS survey to adult patients (including Medicare beneficiaries) and the parents or guardians of pediatric patients who had visited a practice in the ADK Demonstration within the past 12 months. While the survey report is not publicly available, the state did provide RTI with a copy of the 2011 Adirondack Medical Home Demonstration CAHPS Survey Report developed by their survey vendor – DSS Research. Furthermore, RTI will discuss results of their PCMH-CAHPS survey to be administered in early 2014 in future reports.

The survey conducted in Pod 2 found that health centers have problems with their after-hours access. Either the patients do not know there is an after-hours phone number or they do not get a response in a timely fashion. Pod 2 is using this feedback to improve after-hours access. Other than this, impacts of the state initiative on experience with care since Medicare joined in July 2011 are mostly anecdotal. The most useful features noted by the practices are the health IT tools, such as patient portals, and increased access to care made available to patients by the care managers. Additionally, one practice reported that their patients feel more knowledgeable and more in control of their care due to the self-management planning and education provided by the care managers.

Of importance to monitor over the next year is the new pay-for-performance plan, which will be based in part on patient experience scores—20% of the amount set aside for the performance-based bonus will be based on patient experience scores from the next round of the PCMH-CAHPS survey. One practice reported that providers are not enthusiastic about including a measure of patient experience in the performance metrics because they feel least in control of

this measure. The state evaluators plan to administer the next PCMH-CAHPS during the summer of 2013.

3.5.2 Impacts on Beneficiary Experience with Care

Quantitative data assessing the impacts of the ADK Demonstration on beneficiary experience with care are not yet available. In the second annual report, we plan to report our findings from the PCMH-CAHPS survey administered to Medicare beneficiaries.

3.6 Effectiveness (Utilization & Expenditures)

3.6.1 Implementation of State Initiative and Practice Features Expected to Affect Patterns of Utilization and Expenditures During Year 1

New York specified in their MAPCP Demonstration application that they expect significant reductions in inpatient and ER utilization, including hospital readmissions, by the end of the demonstration. The state similarly expects significant reductions in emergency room facility and professional expenditures over the period of the MAPCP Demonstration. New York forecasted 10% reductions in emergency room use and emergency room facility and professional expenditures. The state also anticipates 10% reductions in readmissions and ambulatory-sensitive or Preventable Quality Indicator hospital admissions. New York forecasted more modest reductions in expenditures for inpatient services and emergency room services – a 3.8% forecasted reduction in hospital facility and professional expenditures.

Provision of care management services aimed at altering patterns of utilization and expenditures has been a key feature of the ADK Demonstration since 2010. Pods use Medicare beneficiary utilization files accessed through RTI's web portal, ER visit and hospitalization reports from local hospitals, and, in some cases, practices identify patients in need of care management. Site visit interviewees from practices and Pods identified several challenges to effective implementation of these care management services, including how to determine which patients will benefit the most from care management and access to real-time, patient-level utilization data. In addition, the state has secured a contractor, Treo Solutions, to provide performance benchmarking utilization and expenditure data among Medicare and Medicaid beneficiaries and commercial payer patients assigned to each practice and provide feedback reports to the practices, Pods, and payers, including Medicare and New York's Medicaid program. Treo Solutions is using Medicare FFS claims provided by CMS, as well as FFS claims and managed care encounters from New York's Medicaid program and claims and encounters from the commercial payers. Beginning in the fall of 2012, Treo Solutions began collecting and analyzing utilization and expenditure data, and they will do so throughout the ADK Demonstration. In consultation with the participating payers, Treo Solutions will also add new utilization and cost measures.

Other initiatives implemented by Pods or practices to alter patterns of care include a program to reduce hospital readmission rates by providing support to patients transitioning from one care setting to another; open-access scheduling and extended days and times for patient access to the practice; and educational efforts to increase patient engagement in self-directing medical care. There were no unique initiatives implemented in conjunction with Medicare's joining the ADK Demonstration in 2011.

However, New York continues to explore mechanisms that will promote change. In 2013, the ADK Demonstration will implement a pay-for-performance component that puts a small portion of the medical home payment at risk based on utilization, quality, and patient experience metrics. The metrics will be monitored for Medicare, Medicaid, and commercial payer beneficiaries assigned to each practice.

Currently in New York, there are several initiatives underway that may also influence utilization and expenditures. As described earlier, New York's Medicaid program is operating a state-wide medical home incentive program for practices that receive NCQA medical home recognition; although practices participating in the ADK Demonstration are excluded, comparison practices may be participating and would be included in the "Comparison PCMH" comparison group of the Medicare analysis. In addition, New York received CMS approval to implement the Medicaid Health Home initiative, which was phased-in by county, and by the time roll-out was complete in 2012 all ADK Demonstration counties and comparison group counties had at least one health home provider. New York also has a growing accountable care organization (ACO) presence, and several provider groups and health systems located outside New York City are participating in CMS-led ACO initiatives. If an ADK Demonstration practice or comparison group practice is participating in a CMS-led ACO initiative, this will be accounted for in regression models. Furthermore, to better understand the environment in which primary care practices are providing care, ongoing or new initiatives that may influence patterns of care will be a point of discussion with providers and demonstration staff during subsequent site visits.

3.6.2 Year 1 Findings on Effectiveness

In this section, we present descriptive statistics and estimates of the demonstration effects from the quarterly fixed effects regression models (*Section 1.2.3, Equation 1.1*) for three Medicare expenditure outcomes (total expenditures, expenditures for short-stay, acute care hospitals, and expenditures for ER visits) and three utilization outcomes (all-cause, acute care hospitalizations, ER visits, and 30-day unplanned readmissions). The results are based on 26 quarters of data.

- Baseline period: January 2006–December 2009 (16 quarters). This is the period prior to the start of the ADK Demonstration in New York.
- Pilot period: January 2010–June 2011 (6 quarters). This is the period after the start of the ADK Demonstration but prior to Medicare joining this demonstration.
- Demonstration period: July 2011–June 2012 (4 quarters). This is the first year after Medicare joined the ADK Demonstration. In New York, all participating MAPCP Demonstration practices also participated in the ADK Demonstration.

The descriptive statistics reported here are weighted averages of the Medicare expenditure outcomes and utilization rates from 2006 through the first demonstration year. The averages are calculated separately for (1) beneficiaries assigned to ADK Demonstration practices, (2) beneficiaries assigned to PCMHs in the comparison group, and (3) beneficiaries assigned to non-PCMHs in the comparison group. The weights adjust the averages for

differences in demonstration eligibility and for observable differences in beneficiary-, practice-, and geographic-level characteristics.

The regression models (see *Section 1.2.3*) were estimated separately using two distinct comparison groups: (1) beneficiaries assigned to PCMHs in the comparison group, and (2) beneficiaries assigned to non-PCMHs in the comparison group. The regression results aim to answer two key evaluation questions:

1. Did the ADK Demonstration affect expenditures and utilization rates during the MAPCP Demonstration period? Specifically, was the ADK Demonstration associated with slower growth in Medicare expenditures or reductions in utilization, relative to beneficiaries assigned to comparison practices?
2. Did the demonstration effect differ, depending on whether beneficiaries assigned to practices participating in the state initiative were compared to either (1) beneficiaries assigned to PCMHs in the comparison group, or (2) beneficiaries assigned to non-PCMHs in the comparison group?

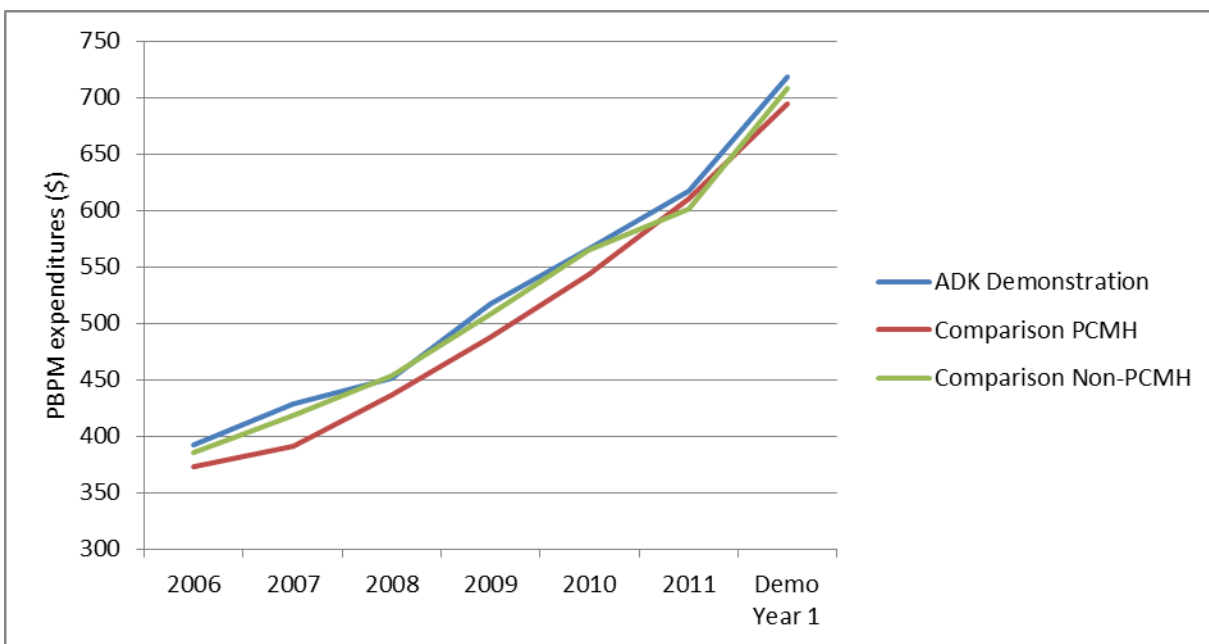
The regression tables presented below will help answer these questions. They contain estimates of the demonstration effects for each quarter, and their standard errors. For expenditures, these are “difference-in-differences” effects. Negative estimates indicate that the growth in expenditures was smaller for beneficiaries assigned to participating practices than for beneficiaries assigned to practices in the comparison group. Conversely, positive expenditure estimates indicate that the growth in Medicare expenditures was larger for beneficiaries assigned to participating practices than for beneficiaries assigned to practices in the comparison group. We also report the average demonstration effect over the entire first year of the demonstration, calculated as a weighted average of the four quarterly estimates (see *Section 1.2.3*).

For the rates (per 1,000 beneficiaries) of all-cause, acute care hospitalizations, ER visits, and 30-day unplanned readmissions, the quarterly demonstration effects represent, for each demonstration quarter, the (regression-adjusted) change in average utilization among beneficiaries assigned to participating practices, relative to beneficiaries assigned to comparison practices. Negative estimates suggest that during particular demonstration quarters the state initiative was able to lower the utilization rate for beneficiaries assigned to participating practices, relative to beneficiaries assigned to comparison practices. Conversely, positive estimates suggest that the state initiative was associated with increased utilization rates in certain quarters during the demonstration period. As with the expenditure outcomes, we also report the average demonstration effect for utilization rates over the entire first year of the demonstration, calculated as a weighted average of the four quarterly estimates.

Descriptive statistics. Average per beneficiary per month (PBPM) Medicare expenditures and average utilization rates (per 1,000 Medicare FFS beneficiaries) from 2006 through the first year of the MAPCP Demonstration are shown in *Figures 3-2 through 3-7*. Total Medicare expenditures (*Figure 3-2*) increased and showed similar trends for all three groups of beneficiaries. Expenditures for short-stay, acute care hospitals (*Figure 3-3*) also increased but were higher from 2009 onward for beneficiaries assigned to ADK Demonstration practices, relative to beneficiaries assigned to comparison practices. For beneficiaries assigned to ADK Demonstration practices, expenditures for ER visits (*Figure 3-4*) were higher and

showed a steeper trend, relative to beneficiaries assigned to the comparison group practices, especially since 2009. The rates of all-cause, acute-care hospitalizations (*Figure 3-5*) increased for all three groups and were fairly similar in 2011 and the first year of the ADK Demonstration. The rates of ER visits (*Figure 3-6*) increased between 2006 and the first demonstration year and they were somewhat higher for beneficiaries assigned to ADK Demonstration practices than for beneficiaries assigned to the comparison group practices. Finally, the rates of 30-day, unplanned readmissions (*Figure 3-7*) increased over time but starting in 2010 they were lower among beneficiaries assigned to ADK Demonstration practices.

Figure 3-2
New York: Trend in average total PBPM Medicare expenditures from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to ADK Demonstration practices, comparison PCMHs, and comparison non-PCMHs

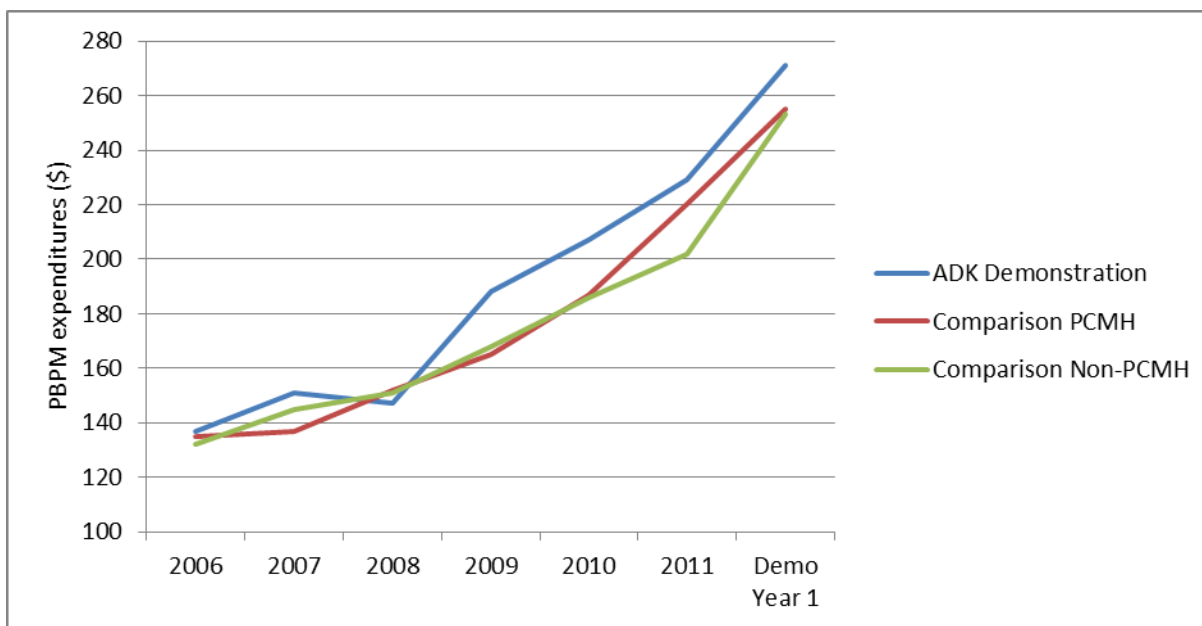


NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; PBPM = per beneficiary per month; ADK = Adirondack.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in New York started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012. These amounts do not include dollars paid by Medicare as a result of participation in the ADK Demonstration.

Figure 3-3

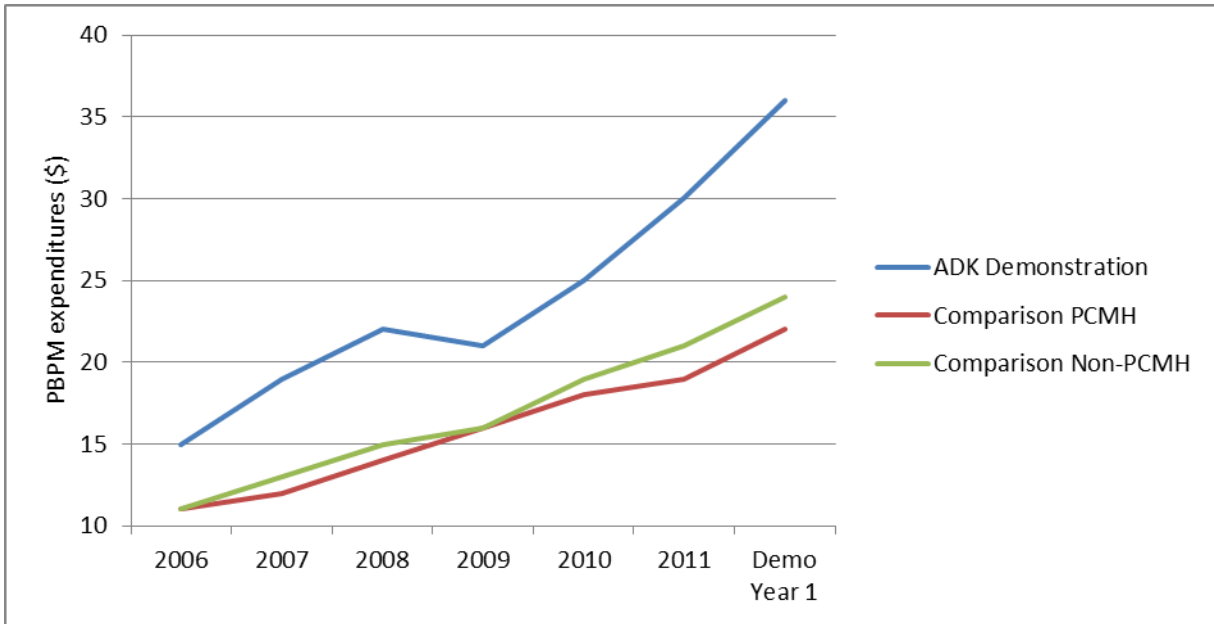
New York: Trend in average PBPM Medicare expenditures for short-stay, acute-care hospitals from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to ADK Demonstration practices, comparison PCMHs, and comparison non-PCMHs



NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; PBPM = per beneficiary per month; ADK = Adirondack.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in New York started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012. These amounts do not include fees paid by Medicare as a result of participation in the ADK Demonstration.

Figure 3-4
New York: Trend in average PBPM Medicare expenditures for ER visits and observation stays from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to ADK Demonstration practices, comparison PCMHs, and comparison non-PCMHs¹

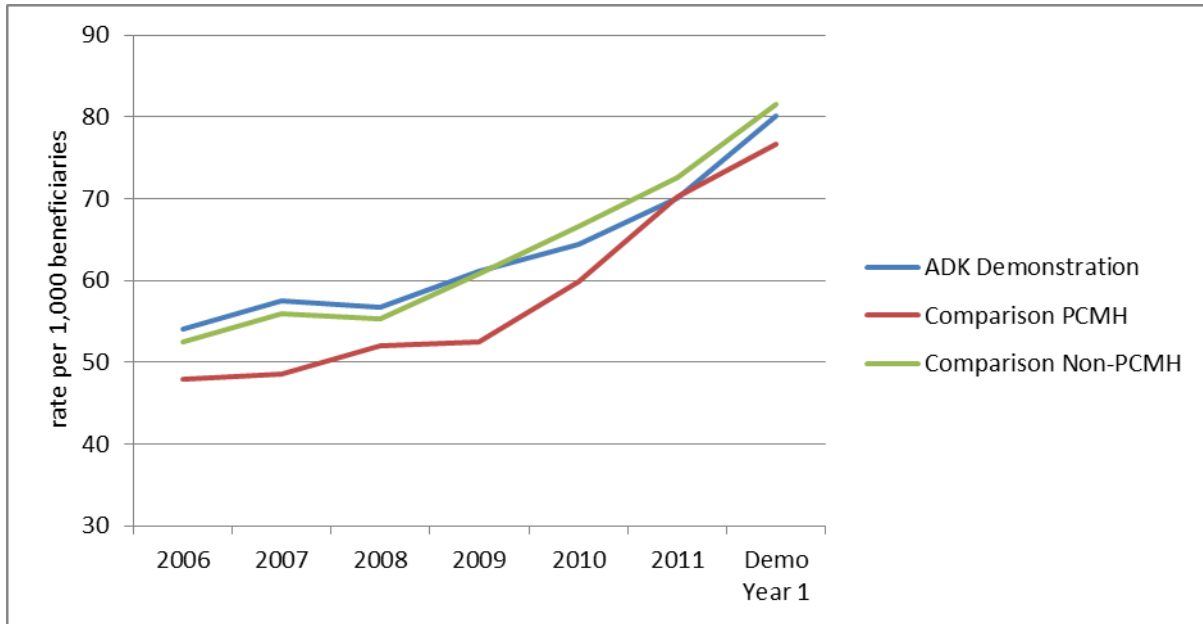


NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; PBPM = per beneficiary per month; ADK = Adirondack; ER = emergency room.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in New York started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012. These amounts do not include fees paid by Medicare as a result of participation in the ADK Demonstration.

¹This excludes Medicare expenditures for ER visits that led to a hospitalization.

Figure 3-5
New York: Trend in average rate of all-cause, acute-care hospitalizations per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to ADK Demonstration practices, comparison PCMHs and comparison non-PCMHs

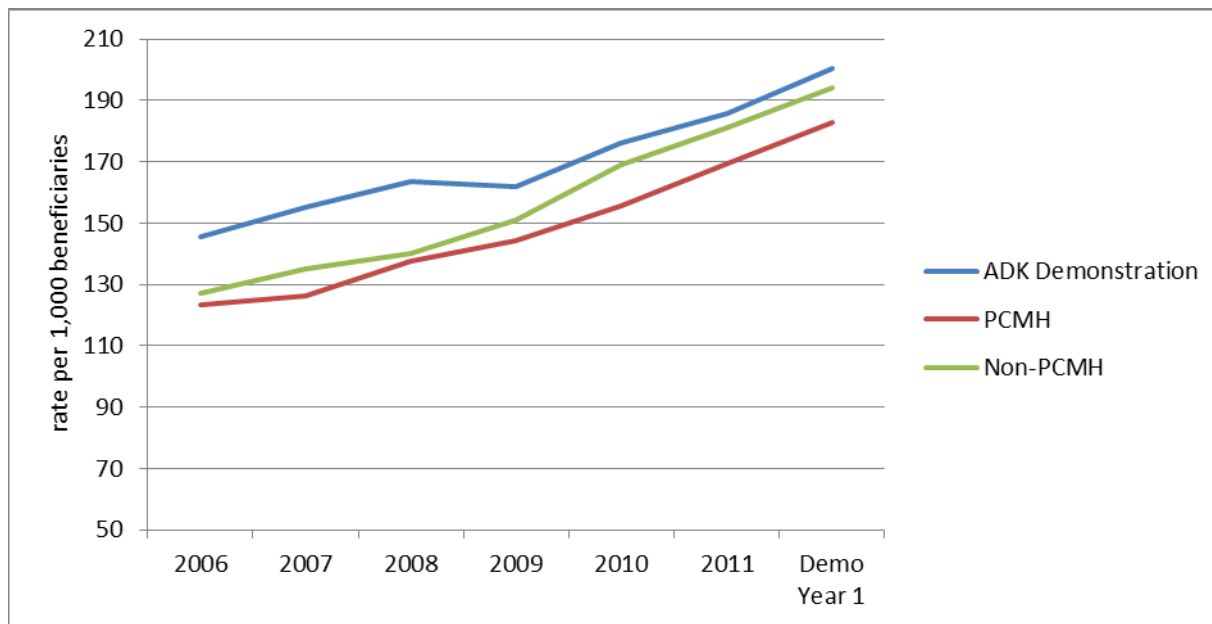


NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; ADK = Adirondack.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in New York started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012.

Figure 3-6

New York: Trend in average rate of ER visits and observation stays per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to ADK Demonstration practices, comparison PCMHs, and comparison non-PCMHs¹



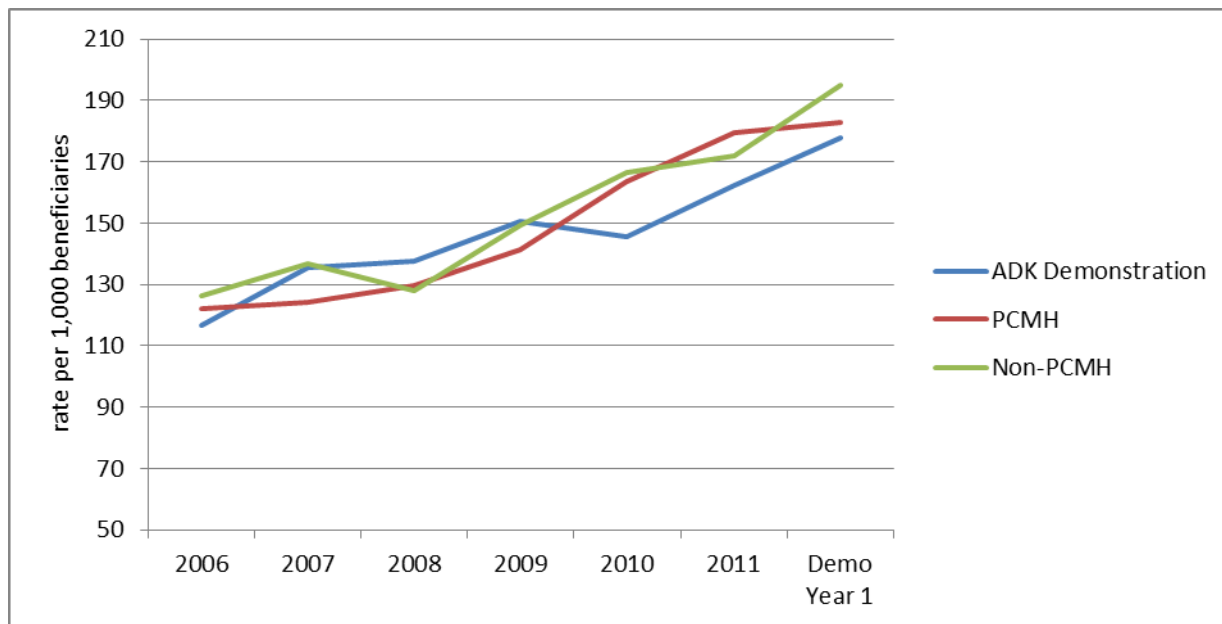
NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; ADK = Adirondack, ER = emergency room.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in New York started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012.

¹This includes ER visits that led to a hospitalization.

Figure 3-7

New York: Trend in average rate of unplanned hospital readmissions per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to ADK Demonstration practices, comparison PCMHs, and comparison non-PCMHs



NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; ADK = Adirondack.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in New York started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012.

Regression estimates. Quarterly difference-in-differences effects for Medicare expenditures, and their weighted average over the first year of the MAPCP Demonstration, are given in *Table 3-4*. Quarterly demonstration effects for the utilization rates, and their weighted averages, are given in *Table 3-5*.

Table 3-4
New York: Quarterly difference-in-differences estimates for PBPM Medicare expenditures during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to ADK Demonstration PCMHs vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Quarter	ADK PCMH vs. CG PCMH			ADK PCMH vs. CG Non-PCMH		
	Total (\$)	Acute Care (\$)	ER (\$)	Total (\$)	Acute Care (\$)	ER (\$)
Jul–Sep 2011	34.55* (18.49)	6.83 (13.35)	7.10* (2.63)	22.21 (22.40)	–1.79 (14.57)	7.64* (2.63)
Oct–Dec 2011	6.22 (18.18)	6.58 (12.92)	6.55* (1.98)	5.43 (23.21)	0.04 (17.86)	5.52* (1.96)
Jan–Mar 2012	2.42 (20.48)	3.21 (15.65)	4.99* (2.00)	18.42 (20.21)	8.84 (15.51)	5.33* (2.08)
Apr–Jun 2012	38.88* (20.38)	24.15 (15.54)	4.43* (2.01)	22.76 (19.12)	11.95 (14.95)	2.29 (2.17)
Average ¹	20.69* (11.85)	10.32 (8.95)	5.75* (1.44)	17.27 (12.75)	4.83 (8.96)	5.17* (1.53)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room; ADK = Adirondack.

The table contains the difference-in-differences estimates for Medicare expenditures during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

¹ This is a weighted average of the four quarterly difference-in-differences estimates, where the weights are the numbers of eligible beneficiaries who were assigned to an ADK Demonstration practice in each quarter.

* p<0.10

Table 3-5

New York: Quarterly demonstration effect estimates for utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to ADK Demonstration PCMHs vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Quarter	ADK PCMH vs. CG PCMH			ADK PCMH vs. CG Non-PCMH		
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)
Jul–Sep 2011	3 (2.4)	–1 (4.4)	19 (14.4)	3 (2.5)	4 (4.8)	16 (13.3)
Oct–Dec 2011	1 (2.7)	0 (4.8)	17 (14.6)	4 (2.5)	6 (7.8)	16 (12.9)
Jan–Mar 2012	2 (2.8)	–14* (6.1)	19 (13.8)	3 (2.5)	–6 (8.9)	12 (11.4)
Apr–Jun 2012	5 (3.6)	–1 (6.5)	7 (17.7)	6* (2.9)	–3 (5.9)	–2 (12.5)
Average ¹	3 (2.1)	–4 (3.1)	15 (11.4)	4* (1.8)	0 (5.2)	10 (7.3)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room; ADK = Adirondack.

The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

Due to the non-linearity of the regression models for utilization, the demonstration effect estimates do not have a difference-in-differences interpretation.

¹ This is a weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who were assigned to an ADK Demonstration practice in each quarter.

* p<0.10

From *Tables 3-4 and 3-5*, we reach the following conclusions about the impact of the ADK Demonstration on Medicare FFS beneficiaries during the first year of the MAPCP Demonstration.

- Between the baseline period and the first demonstration year, **total Medicare expenditures** (Part A and B) increased faster for beneficiaries assigned to ADK

Demonstration practices, relative to beneficiaries assigned to comparison PCMHs. This result was driven by the first and fourth demonstration quarters. The change in total Medicare expenditures among beneficiaries assigned to participating practices was not significantly different from the change among beneficiaries assigned to comparison non-PCMHs.

- The changes in **expenditures for short-stay, acute-care hospitals** between the baseline period and first demonstration year were similar for beneficiaries assigned to ADK Demonstration practices, comparison PCMHs, and comparison non-PCMHs.
- **Expenditures for ER visits and observation stays** increased faster for beneficiaries assigned to ADK Demonstration practices, relative to beneficiaries assigned to both PCMHs and non-PCMHs in the comparison group. However, the magnitudes of the estimates were small.
- The rate of **all-cause, acute-care hospitalizations** during the first year of the MAPCP Demonstration did not change significantly for beneficiaries assigned to ADK Demonstration practices relative to beneficiaries assigned to comparison PCMHs. However, the rate increased on average by 4 hospitalizations/1,000 beneficiaries for beneficiaries assigned to practices participating in the state initiative, relative to beneficiaries assigned to comparison non-PCMHs. The latter result was driven by the fourth demonstration quarter (April–June 2012).
- The rates of **ER visits and unplanned readmissions** during the first year of the MAPCP Demonstration year did not change significantly for beneficiaries assigned to ADK Demonstration practices relative to beneficiaries assigned to both comparison groups, PCMHs and non-PCMHs.

Cohort 1 analysis. The quarterly fixed effects model was also estimated using only data from the beneficiaries in “cohort 1.” In New York, these are beneficiaries who were first assigned to an ADK Demonstration practice or comparison practice during the first two quarters of the MAPCP Demonstration (July–December 2011); it does not include those beneficiaries who were newly assigned during the third and fourth quarters of the MAPCP Demonstration. As discussed in more detail in *Section 1.2.3*, the purpose of a cohort 1 analysis was to measure the demonstration effects on stable intervention and comparison groups. In the data used for this report, cohort 1 beneficiaries comprised 89% of the ADK Demonstration group, 85% of the PCMH comparison group, and 84% of the non-PCMH comparison group.

The full set of cohort 1 estimates for Medicare expenditures and utilization rates are given in *Tables 3A-1 and 3A-2* in *Appendix 3A*, respectively. For convenience, we repeat here the average estimates for the first MAPCP Demonstration year in *Table 3-6*. On comparing these with the ones for the full sample in *Tables 3-4 and 3-5*, we note the following differences and similarities.

- Unlike the corresponding estimate based on the full sample of beneficiaries, the rate of growth in **total Medicare expenditures** showed no difference between cohort 1 beneficiaries assigned to ADK Demonstration practices and cohort 1 beneficiaries assigned to comparison PCMHs.

- Similar to the estimates based on the full sample of beneficiaries, **expenditures for ER visits and observation stays** increased faster for cohort 1 beneficiaries assigned to ADK Demonstration practices than for cohort 1 beneficiaries assigned to comparison PCMHs and non-PCMHs, although the magnitudes of the estimates were small.
- Unlike the corresponding estimate based on the full sample of beneficiaries, the rate of **all-cause, acute-care hospitalizations** did not change significantly for cohort 1 beneficiaries assigned to ADK Demonstration practices, relative to beneficiaries assigned to non-PCMH comparison practices.

In sum, between the baseline and the first year of the MAPCP Demonstration, the growth in expenditures for ER visits was slightly higher among beneficiaries who were first assigned to ADK Demonstration practices during the first six months of the MAPCP Demonstration, relative to beneficiaries assigned to comparison PCMHs and non-PCMHs during the same time period. For this cohort of beneficiaries, there was no evidence that the remaining five outcome measures were affected during the first year of the MAPCP Demonstration.

Table 3-6
New York: Average demonstration effect estimates during the first year of the MAPCP Demonstration for Medicare expenditures and utilization rates, comparing performance for Medicare beneficiaries first assigned in July–December 2011 to ADK Demonstration PCMHs, comparison PCMHs and non-PCMHs

Outcome	ADK PCMH vs. CG PCMH		ADK PCMH vs. CG non-PCMH	
	Average effect	Standard error	Average effect	Standard error
Total expenditures (\$)	13.82	(11.73)	1.57	(14.59)
Acute care expenditures (\$)	4.23	(8.71)	-7.36	(10.16)
ER expenditures (\$)	7.46*	(1.4)	6.24*	(1.53)
All-cause hospitalizations (per 1,000 beneficiaries)	1	(2.3)	2	(2.0)
ER visits (per 1,000 beneficiaries)	-3	(3.3)	0	(5.7)
Unplanned readmissions (per 1,000 beneficiaries)	5	(9.8)	-2	(8.9)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room; ADK = Adirondack.

The table contains average demonstration effect estimates and standard errors for the first year of the MAPCP Demonstration, for Medicare expenditures and utilization rates. The average estimate is a weighted average of the four quarterly effects, where the weights are the numbers of demonstration-eligible beneficiaries in each quarter.

For Medicare expenditures, the demonstration effects can be interpreted as difference-in-differences.

* p<0.10

Summary of evaluation findings. Our analyses of Medicare expenditures and utilization rates during the first year of the MAPCP Demonstration provide some preliminary evidence about the effectiveness of the demonstration for Medicare FFS beneficiaries. The evidence can be summarized as follows.

- There is no evidence that the ADK Demonstration reduced the growth in total Medicare expenditures between the baseline period and the first year of the MAPCP Demonstration. In fact, total expenditures increased more for beneficiaries assigned to ADK Demonstration practices than for beneficiaries assigned to comparison PCMHs. This was not the case in the analysis of cohort 1 beneficiaries. Hence, practices participating in the state initiative were more effective at reducing the rate of growth in total Medicare expenditures for beneficiaries who entered at the start of the MAPCP Demonstration in contrast to those who entered later in the first year.
- There is no evidence that the ADK Demonstration reduced the growth in expenditures for ER visits between the baseline period and the first year of the MAPCP Demonstration. In fact, expenditures for ER visits increased faster for beneficiaries assigned to ADK Demonstration practices than for beneficiaries assigned to comparison practices (PCMH and non-PCMH). The effect estimates, though statistically significant, were small in magnitude (\$4 to \$8 PBPM).
- There is no evidence that the ADK Demonstration reduced the growth in expenditures for short-stay, acute-care hospitals between the baseline period and the first year of the MAPCP Demonstration.
- There is no evidence that the ADK Demonstration reduced the rate of all-cause, acute-care hospitalizations during the first year of the MAPCP Demonstration. In fact, the rate increased on average by 4 hospitalizations/1,000 beneficiaries for beneficiaries assigned to practices participating in the state initiative, relative to comparison non-PCMHs. This estimated effect, however, is small and was not present relative to comparison PCMHs.
- There is no evidence that the ADK Demonstration reduced the rates of ER utilization or unplanned readmissions during the first year of the MAPCP Demonstration.

3.6.3 Medicare Budget Neutrality in Year 1 of the ADK Demonstration

In this section, we present estimates of budget neutrality in the first year of the MAPCP Demonstration using the methodology described in *Section 1.2.3*. *Table 3-7* reports the estimated gross and net savings for New York during that year, relative to the PCMH comparison group. Results are presented separately by the four quarters and then summed to produce annual estimates of savings and fees as a whole.

Table 3-7

Estimates of gross savings, fees paid, & net savings, Year 1 of the MAPCP Demonstration, New York ADK Demonstration

Budget Neutrality Parameter	MAPCP Demonstration Quarter (Year 1)				Year 1 Total	90% Confidence Interval	
	Jul–Sep 2011	Oct–Dec 2011	Jan–Mar 2012	Apr–Jun 2012		Lower	Upper
Difference in quarterly expenditures per beneficiary	\$103.65*	\$18.66	\$7.27	\$116.64*	\$246.22	—	—
Eligible beneficiary quarters	19,013	18,993	19,060	19,734	76,800	—	—
Total gross savings	–\$1,970,697	–\$354,409	–\$138,566	–\$2,301,774	–\$4,765,447*	–\$9,312,785	–\$215,799
Total MAPCP Demonstration fees	\$397,268	\$392,000	\$394,239	\$411,432	\$1,594,939	—	—
Net savings	–\$2,367,965	–\$746,409	–\$532,805	–\$2,713,206	–\$6,360,386	—	—
Average expenditures (comparison group)	\$1,987	\$2,150	\$2,148	\$2,077	\$8,362	—	—
Total expenditures (comparison group)	\$37,778,831	\$40,834,950	\$40,940,880	\$40,987,518	\$160,542,179	—	—

NOTES:

MAPCP = multi-payer advanced primary care practice; ADK = Adirondack; PCMH = patient-centered medical home.

*p<.10; **p<.05; ***p<.01

Difference in quarterly expenditures per beneficiary: Estimated difference in average Medicare Part A and B expenditures between beneficiaries assigned to ADK Demonstration practices and those assigned to PCMHs in the comparison group, excluding beneficiaries with less than 3 months of demonstration eligibility.

Eligible beneficiary quarters: Sum of ADK Demonstration beneficiaries' fractions of quarters eligible to participate in the MAPCP Demonstration, excluding beneficiaries with less than 3 months of eligibility.

Total gross savings: Combined savings effect per beneficiary times the number of eligible beneficiary quarters. Savings are the negative of the expenditure difference. Positive savings indicate that the intervention group's expenditures increased less than the comparison group's expenditures. Negative savings indicate that the intervention group's expenditures increased more than the PCMH comparison group's expenditures.

Total MAPCP Demonstration fees: Sum of MAPCP Demonstration fees, excluding fees paid on behalf of beneficiaries with less than 3 months of eligibility.

Net savings: Gross savings minus total MAPCP Demonstration fees.

Average expenditures (PCMH comparison group): Medicare expenditures per beneficiary in the comparison group.

Total expenditures (PCMH comparison group): Average expenditures per beneficiary times the number of ADK Demonstration beneficiaries' eligible quarters.

SOURCE: Medicare Part A and B claims January 1, 2006–June 30, 2012.

Total gross savings to Medicare was $-\$4,765,447$, reflective of the findings reported earlier that the growth in Medicare expenditures was greater among beneficiaries assigned to ADK Demonstration practices compared to beneficiaries assigned to the PCMH comparison group practices. Total Medicare fees paid out based on eligible quarters were $\$1,594,939$. Medicare's net savings are estimated to be $-\$6,360,386$, or $-\$331.27$ per full-year eligible beneficiary. These findings indicate that the ADK Demonstration in New York did not generate cost savings in the first year of the MAPCP Demonstration.

3.7 Special Populations

3.7.1 Targeting of Special Populations and Tailored Interventions During Year 1

While New York did not specify in their application any special populations they would target, the ADK Demonstration region includes rural, low-income patients, many of whom have chronic conditions. Although care management activities within the three Pods thus far have not focused on one particular set of conditions, diabetes, COPD, and congestive heart failure (CHF) are three conditions in which the Pods and practices are placing care management resources. There has been a collective interest by the Pods and practices to identify people who are particularly high risk for one of the above conditions to determine what care is needed.

Pods are implementing initiatives to address the needs of patients with chronic conditions. For example, in Pod 2 Certified Diabetic Educators (CDEs) provide care to diabetic patients and conduct group counseling, hold community events, provide self-management planning, and educate patients on nutrition. The CDEs work in conjunction with the nurse care managers, who help patients reach their treatment goals. The CDEs also conduct group counseling, community events, and host a Diabetes Day.

The ADK Demonstration's intervention has not been tailored specifically to dual eligible or Medicaid-only beneficiaries. However, if a dually eligible or Medicaid-only beneficiary is identified as having a chronic condition or high risk of developing a chronic condition, they have access to the same interventions as other patients.

The Pods and practices are now utilizing data from Medicare, local hospitals, and practice's clinical records to identify patients with co-morbid conditions and those with the highest rates of ER and hospital use, which will enable interventions to be more targeted toward these patients. One Pod reported that the CDE runs reports on HbA1c levels through EHRs; diabetic patients with an HbA1c greater than 9 are targeted for care.

3.7.2 Impacts on Special Populations

Quantitative data assessing the impacts of the ADK Demonstration on special populations are not yet available. In future reports, we plan to report our findings on the impacts of the demonstration on special populations as defined by each state initiative or special populations of policy interest.

3.8 Discussion

The ADK Demonstration is an integrated effort to improve the way primary care is delivered in the region by implementing PCMH principles in 41 primary care practices. Providers, payers and the state government have been working together for several years to test the effect of implementing these advanced care practices in a rural and underserved region. The project is focused on improving access, quality and continuity of care for all patients, while reducing avoidable utilization and cost.

The ADK Demonstration, thanks largely to the funds provided through Medicare's participation, has substantially improved care coordination resources in this region. There is an ongoing, interesting experiment taking place: the three ADK Demonstration Pods were each allowed to structure their care management coordination services differently, leading to a "centralized" program in the one Pod versus a decentralized program in two Pods. The most notable initiative underway to improve patient experience and increase patient engagement and self-management is the use of care managers. Health IT tools, such as patient portals, were also noted as being helpful for patient engagement. Of importance to monitor over the next year is the new pay-for-performance plan, which will be based on performance meeting utilization rate targets and adherence to a performance improvement plan, but also patient experience scores—20% of the amount set aside for the performance-based bonus will be based on patient experience scores from the next round of the PCMH-CAHPS survey.

The New York ADK Demonstration has also benefited from the state's substantial investment in supporting health IT through a series of capital grants authorized by the Health Care Efficiency and Affordability Law for New Yorkers. All of the participating practices have implemented an EHR as part of the demonstration; however, payers, Pods, and practices all described interoperability issues. One Pod noted that their providers used six or seven different systems in total, and both Pods and practices recommended that the state either contract with one vendor or develop a single set of guidelines to ensure communication across systems.

Adding Medicare as a payer in the ADK Demonstration did not require any structural, organizational, or programmatic changes. Medicare's entrance to the ADK Demonstration had a positive spillover effect on the region's providers and Medicare beneficiaries. Payers and practices openly welcomed Medicare because it was the only major remaining payer in the region that was not already participating. Several stakeholders across all interviewee categories (state officials, practices, payers, and Pod staff) noted a significant morale boost that came with Medicare's participation.

Despite the structural changes that have been made within the participating practices and the health system that surrounds these practices to improve access to and continuity of care as well as patient engagement in self-management, these efforts have not translated into lower rates of growth in Medicare expenditures or acute care utilization to date nor budget neutrality. The state of New York had anticipated significant reductions in inpatient and ER utilization, including hospital readmissions, by the end of the demonstration.

Other payers also have not yet observed a positive return on investment or an improvement in health outcomes for participants compared to patients outside of the

demonstration area. Payers are noticeably frustrated with these findings but they reported that they are not in a position to leave the demonstration early. For many payers, the decision to continue to support the model after the ADK Demonstration ends depends on cost savings and return on investment. Providers are taking a longer view, and many do not expect that outcomes will show measurable improvement before the end of the demonstration.

Although Medicare losses in New York declined in Quarters 2 and 3, the fact that the largest loss occurred in the last quarter of Year 1 puts increased pressure on the ADK Demonstration to generate savings in future years. That said, during the Year 1 site visit, several providers and a provider support organization did caution us that the primary care transformation process occurring in the Adirondack region is huge, even “monumental”, so they anticipated it would be several years before positive change in terms of outcomes may occur. Providers expressed concern that anticipated savings may not occur until at least 3–5 years into the ADK Demonstration, which made them nervous that CMS and other private payers may not provide the ADK Demonstration, or in CMS’ case the MAPCP Demonstration, the necessary time to see positive and sustaining changes in outcomes.

CHAPTER 4 RHODE ISLAND

In this chapter, we present qualitative and quantitative findings related to the implementation of the Chronic Care Sustainability Initiative (CSI), Rhode Island's preexisting multi-payer initiative, which added Medicare as a payer to implement the MAPCP Demonstration. We report qualitative findings from our first of three annual site visits to Rhode Island, as well as quantitative findings using Medicare fee-for-service (FFS) claims data to report characteristics of beneficiaries and participating practices in the state initiative, descriptive statistics and estimates of the demonstration effects for Medicare payment and utilization outcomes, and estimates of budget neutrality.

For the first round of site visit interviews, which occurred from October 5 to October 9–11, 2012, three teams traveled across the state over 3 ½ days. The focus of the site visit interviews was on early implementation experiences and practice transformation activities that were necessary to join the MAPCP Demonstration. During the site visit, we interviewed providers, nurses, and administrators from participating patient-centered medical homes (PCMHs) to learn about the effects of the state policies on their practice transformation activities and the quality and effectiveness of the health care they delivered before and after Medicare's entrance. We met with key state officials and staff from the Rhode Island Quality Institute (RIQI) involved with the implementation of CSI to learn how the payment model and other efforts to support practice transformation were chosen and implemented and how specific performance goals were established. We also met with payers to hear their experiences with implementation and whether the payments to practices were effective in terms of producing desired outcomes or whether modifications are warranted. Last, we met with patient advocates and provider organizations to learn if they had observed an improved beneficiary experience with care and any changes to the way care is delivered.

This chapter is organized by major evaluation domains. *Section 4.1* reports state implementation activities and baseline demographic and health status characteristics of Medicare beneficiaries and characteristics of practices participating in CSI. *Section 4.2* reports practice transformation activities. The subsequent sections of this chapter report our findings for the five evaluation domains related to outcomes: quality of care, patient safety, and health outcomes (*Section 4.3*); access to care and coordination of care (*Section 4.4*); beneficiary experience with care (*Section 4.5*); effectiveness as measured through health care utilization, Medicare expenditures, and budget neutrality (*Section 4.6*); and special populations (*Section 4.7*). We conclude this chapter with a summary of early findings and discussion (*Section 4.8*).

4.1 State Implementation

In this section, we present findings related to the implementation of CSI and changes made by the state, practices, and payers when Medicare joined its ongoing multi-payer initiative. We focus on information related to a subset of the state implementation evaluation questions that lend themselves to being answered in the early part of the MAPCP Demonstration. Specifically, we address the following:

- What are the features of the state initiative?

- What changes did practices and payers make in order to take part in CSI and meet the participation requirements? What was involved in making these changes? What challenges did they face?
- What kinds of structural and organizational changes did the state, practices, and payers make to accommodate Medicare’s participation in CSI and to better serve the needs of Medicare beneficiaries? How did administrative burdens and resource allocations change as a result of Medicare’s participation?
- Does Medicare’s participation in CSI have any spillover effects on the state’s Medicaid program or private payers?
- What early lessons were learned?

The state profile in **Section 4.1.1** of this report draws on quarterly reports submitted to CMS by CSI project staff, monthly state/CMS calls, the site visit conducted in October 2012, as well as other sources, including news items and state and federal websites. **Section 4.1.2** presents a logic model that reflects our understanding of the link between specific elements of CSI and expected changes in outcomes. **Section 4.1.3** presents key findings gathered from the site visit and describes the implementation experience of state officials, payers, and providers. We conclude the State Implementation section with lessons learned in **Section 4.1.4**.

4.1.1 Rhode Island State Profile as of October 2012 Evaluation Site Visit

The overarching mission of CSI is to improve health outcomes—especially for those with chronic illnesses—by transforming primary care. The project began with a grant from the Center for Health Care Strategies in 2006 that enabled the Rhode Island Office of the Health Insurance Commissioner (OHIC) to convene stakeholders to conceptualize the project. Stakeholders agreed that a multi-payer PCMH model was ideally suited for advancing common goals around quality, access, and cost. CSI was launched in 2008, backed by nearly universal commercial and Medicaid managed care plan participation. Payers offer enhanced payment and other supports in exchange for practices meeting National Committee for Quality Assurance Physician Practice Connection Patient-Centered Medical Home (NCQA PPC[®] PCMH[™]) standards, quality improvement goals, and cost reduction goals. Rhode Island’s participation in the MAPCP Demonstration, and corresponding Medicare payments to CSI practices, began in July 2011; participating practices now have PCMH payment support for nearly all insured patients.

State environment. OHIC first convened CSI in June 2006. OHIC brought leadership to the initiative, offered anti-trust protection for payers to collaborate, and promoted a sense of common purpose among a diverse array of stakeholders. Stakeholders, including primary care providers, payers and purchasers, state agencies, and independent experts, helped OHIC plan, design, and implement CSI. In 2009, OHIC used its leverage to establish four “affordability standards” for commercial health insurers. The standards went into effect in 2010, two years after the launch of CSI. The first standard, known as the primary care spend standard, directs carriers to increase the proportion of their total health care expenditures on primary care by one percentage point per calendar year from 2010 through 2014. The standard emphasizes innovative payment models and infrastructure investment rather than FFS primary care rate

increases; CSI is one mechanism by which insurers have increased spending on primary care toward fulfilling this requirement. The second standard requires insurers to participate in CSI. The third and fourth standards require insurers to contribute financial support to CurrentCare, Rhode Island's health information exchange (HIE), and to participate in state payment reform efforts (State of Rhode Island Office of the Health Insurance Commissioner, 2012).

Elected officials have been broadly supportive of CSI. In 2011, Rhode Island enacted the Rhode Island All-Payer Patient Centered Medical Home Act to codify much of CSI's work. The legislation also required the future participation of state-regulated health insurers. In addition, the Medical Home Act elevated the Rhode Island Executive Office of Health and Human Services to the position of co-convenor of CSI.

Several relevant programs operating in the state may influence outcomes for participants in CSI and the comparison group population:

- RIQI was awarded a \$15.9 million Beacon Community grant in July 2010. Beacon and CSI are closely aligned and all CSI practices are represented in the 50 practices receiving support from Beacon. The initiatives have combined some committees and work groups and have harmonized quality measures to enhance coordination. Beacon provides significant data collection (including creation of an interim data warehouse until construction of an all-payer claims database [APCD] is completed), analysis, and reporting support to CSI, as well as practice transformation support to CSI and Beacon practices. RIQI also operates Rhode Island's Regional Extension Center, which supports Rhode Island providers in adopting health information technology (IT).
- Rhode Island has obtained approval for two Section 2703 Health Homes State Plan Amendments (SPAs). The target population for the first SPA, approved November 2011, is children with special health care needs; the target providers are Rhode Island's Comprehensive Evaluation, Diagnosis, Assessment, Referral, and Re-evaluation (CEDARR) Family Centers. The target population for the second SPA, also approved November 2011, is persons with serious and persistent mental illnesses; the target providers are community mental health centers.
- Coastal Medical, a large group practice with two practice sites participating in CSI, was selected to participate in the Medicare Shared Savings Program in July 2012.
- Blue Cross Blue Shield (BCBS) of Rhode Island operates an independent PCMH program. In addition, BCBS of Rhode Island has provided grants to some practices to support implementation of electronic health records (EHRs).
- Medicaid FFS operates a primary care case management program, Connect Care Choice, for beneficiaries with chronic illnesses; three CSI practices participate.

Demonstration scope. In 2008, CSI began payments to five pilot practices located throughout the state, with an expectation that each practice would focus primarily on improving care for adults with chronic conditions. Through a competitive application process, the initiative

expanded to include 11³⁴ additional practices in April 2010. *Table 4-1* shows participation in CSI at the end of the first year of the demonstration (June 30, 2012): 16 participating practices with attributed Medicare FFS beneficiaries, and 73 providers. The cumulative number of Medicare FFS beneficiaries that had ever participated in the demonstration for three or more months was 7,912. In its application to join the MAPCP Demonstration, the state estimated 9,600 Medicare beneficiaries would participate.

Table 4-1
Number of practices, providers, and Medicare fee-for-service beneficiaries in the Rhode Island Chronic Care Sustainability Initiative (CSI)

Participating Entities	Number as of June 30, 2012
CSI practices ¹	16
Participating providers ¹	73
Medicare fee-for-service (FFS) beneficiaries ²	7,912

NOTE: CSI practices include only those practices with attributed Medicare FFS beneficiaries, and participating providers are the providers associated with those practices. The numbers of Medicare FFS beneficiaries are cumulative, representing the number of Medicare FFS beneficiaries that had ever been assigned to participating CSI practices and participated in the demonstration for at least three months.

SOURCES: ¹ARC MAPCP Demonstration Provider File; ²ARC Beneficiary Assignment File (SAS Output tab52c.xls 07/30/2014). (See chapter 1 for more detail about these files).

Five payers are participating in CSI: Medicare FFS, BCBS of Rhode Island, Neighborhood Health Plan of Rhode Island, Tufts Health Plan, and United Healthcare. The latter four participate with all of their business lines: BCBS of Rhode Island, Tufts, and United each have commercial and Medicare Advantage products; Neighborhood and United have Medicaid managed care products. There are relatively few self-insured employers in Rhode Island; however, 100% of the state’s administrative services-only purchasers participate in CSI, including the state employees’ health plan. Though Medicaid FFS does not participate in CSI, in July 2010, Medicaid required that new contracts with managed care plans include participation in CSI; these new contracts went into effect in September 2010. Most Rhode Island Medicaid beneficiaries are enrolled in managed care.

As of June 30, 2012, the state reported 46,212 all-payer patients participating in CSI. Although children are generally excluded from the initiative and pediatricians are not eligible to receive payments, family medicine physicians do receive payment for both adults and children. Program leaders and stakeholders are considering expanding the program to include pediatrics.

Table 4-2 displays the characteristics of the PCMHs participating in CSI as of June 30, 2012. There were 75 participating PCMHs with an average of five providers per practice. All of these practices were either office-based (87.5%) or federally qualified health centers (12.5%).

³⁴ Four of the expansion practices are legally independent, but are co-located and share administrative support and resources. Although they are counted separately for purposes of measuring participation in CSI, they are counted as a single entity in state-reported quality and beneficiary experience of care measures.

There were no critical access hospitals or rural health clinics. All practices were located in three metropolitan counties.

Table 4-2
Characteristics of practices participating in the Rhode Island Chronic Care Sustainability Initiative as of June 30, 2012

Characteristic	Statistic
Number of practices	16
Number of providers	73
Average number of providers per practice	5
Practice type (%)	
Office based	87.5
Federally qualified health center	12.5
Critical access hospital	0
Rural health clinic	0
Practice location type (%)	
Metropolitan	100
Micropolitan	0
Rural	0

SOURCES: ARC Q4 MAPCP Demonstration Provider File and SK&A office-based physician data file. (See chapter 1 for more detail about these files).

The demographic and health status characteristics of Medicare FFS beneficiaries who were assigned to participating CSI practices during the first 12 months of the demonstration are reported in **Table 4-3**. Beneficiaries with less than three months of eligibility for the demonstration are not included in our evaluation or this analysis. Twenty-nine percent of the beneficiaries assigned to CSI practices during the first 12 months of the demonstration were under the age of 65 and 35% of beneficiaries were originally eligible for Medicare due to disability. Beneficiaries had a mean age of 68 and were mostly White (90%), and all lived in urban areas. Fifty-nine percent of beneficiaries were female, and 28% were dually eligible for Medicare and Medicaid. Few had end-stage renal disease (0.5%) or resided in a nursing home (0.6%) during the year prior to their assignment to a CSI practice.

Table 4-3
Demographic and health status characteristics of Medicare fee-for-service beneficiaries participating in the Rhode Island Chronic Care Sustainability Initiative from July 1, 2011, through June 30, 2012

Demographic and health status characteristics	Percentage or mean
Total beneficiaries	7,912
Demographic characteristics	
Age < 65 (%)	29
Ages 65–75 (%)	38
Ages 76–85 (%)	22
Age > 85 (%)	11
Mean age	68
White (%)	90
Urban place of residence (%)	100
Female (%)	59
Medicaid (%)	28
Disabled (%)	35
End-stage renal disease (%)	0.5
Institutionalized (%)	0.6
Health status	
<i>Mean Hierarchical Condition Category (HCC) score groups</i>	1.04
Low risk (< 0.48) (%)	26
Medium risk (0.48–1.25) (%)	48
High risk (> 1.25) (%)	26
<i>Mean Charlson Index score</i>	0.74
Low Charlson Index score (= 0) (%)	64
Medium Charlson Index score (≤ 1) (%)	18
High Charlson Index score (> 1) (%)	18
Chronic conditions (%)	
Heart failure	3
Coronary artery disease	12
Other respiratory disease	11
Diabetes without complications	15
Diabetes with complications	4
Essential hypertension	31
Valve disorders	2

(continued)

Table 4-3 (continued)
Demographic and health status characteristics of Medicare fee-for-service beneficiaries participating in the Chronic Care Sustainability Initiative of Rhode Island from July 1, 2011, through June 30, 2012

Demographic and health status characteristics	Percentage or mean
Chronic conditions (%) (continued)	
Cardiomyopathy	1
Acute and chronic renal disease	4
Renal failure	3
Peripheral vascular disease	1
Lipid metabolism disorders	15
Cardiac dysrhythmias and conduction disorders	9
Dementias	1
Strokes	1
Chest pain	4
Urinary tract infection	4
Anemia	5
Malaise and fatigue (including chronic fatigue syndrome)	2
Dizziness, syncope, and convulsions	5
Disorders of joint	5
Hypothyroidism	4

NOTE: Percentages and means are weighted by the fraction of the year that a beneficiary met MAPCP Demonstration eligibility criteria. Demographic and health status characteristics are calculated using the Medicare Enrollment Data Base (EDB) and claims data for the one-year period prior to a Medicare beneficiary first being attributed to a PCMH after the start of the MAPCP Demonstration. Urban place of residence is defined as those beneficiaries living in Metropolitan or Micropolitan Statistical Areas defined by the Office of Management and Budget (OMB).

SOURCE: SAS Output tab52c.xls 07/30/2014.

The mean HCC score was 1.04, meaning that Medicare beneficiaries assigned to a CSI practice in the first year of the MAPCP Demonstration were predicted to be 4% more costly in the subsequent year than an average Medicare FFS beneficiary. Beneficiaries' average score on the Charlson Comorbidity Index was 0.74; just under two-thirds (64%) of beneficiaries had a low (zero) score, indicating that these beneficiaries did not receive medical care in the year prior to their entrance into CSI for any of the 18 clinical conditions contained within the index. The most common chronic conditions diagnosed (from a set of 22 chronic conditions that are common to Medicare FFS beneficiaries) among assigned Medicare FFS beneficiaries were hypertension (31%), diabetes without complications (15%), lipid metabolism disorders (15%), and coronary artery disease (12%).

Practice expectations. All CSI practices are required to meet NCQA PPC[®] PCMH[™] standards. Whether 2008 or 2011 PCMH standards are required depends on when the practice signed its CSI contract and the timing of the recognition requirement based on the contract date.

Practices had six months from execution of their initial contract to meet Level 1 standards. Practices must achieve Level 3 recognition to continue participating in CSI after their initial two-year contract ends. As of the third quarter of 2012, all participating practices had attained Level 3 recognition.

CSI requires practices to meet additional criteria beyond those specified in the NCQA PPC[®] PCMH[™] recognition program. These additional criteria include:

- provision of nurse care manager services;
- participation in one year of practice transformation training; and
- use of an electronic registry and identification of patients with diabetes, coronary artery disease, or depression.

After the expiration of the initial contract, CSI practices are subject to additional conditions of a “renewal contract”:

- regular generation of quality reports using a set of standard metrics and achievement of specified scores;
- measurement of patient satisfaction and achievement of specified scores;
- achievement of specified utilization changes;
- expanded access to care outside of normal business hours;
- adoption of “best practices” for care transitions between hospital and outpatient settings, which includes recommendations for communication of key information between hospitals and community physicians at intake, during the hospitalization, at discharge, and after discharge; and
- establishment of compacts with at least four specialists, including at least one hospitalist.³⁵

The first two cohorts of CSI practices (five pilot practices and the first eleven expansion practices) transitioned to the renewal contract when their original contracts expired in April 2011 and April 2012, respectively; practices joining in October 2012 will also be required to meet the terms of the renewal contract at the end of their initial two-year contract.

Support to practices. CSI practices receive enhanced reimbursement in exchange for meeting the agreed upon PCMH recognition standards and other program requirements. Between July 1, 2011 (when Medicare joined CSI) and June 30, 2012, CSI practices received a total of \$440,987 in payments from Medicare for beneficiaries assigned to their practices during the first year of the demonstration.

³⁵ Compacts are to be modeled on the Colorado Primary Care-Specialty Care Compact (Colorado Patient Centered Medical Home Initiative, 2011) and similar recommendations from the American College of Physicians Council of Subspecialty Societies (CSS) PCMH Workgroup (American College of Physicians, 2013).

The enhanced reimbursement methodology changed with the implementation of the renewal contract in April 2011 (five pilot practices) and April 2012 (first 11 expansion practices): practices now receive a base payment of \$5.50 per member per month (PMPM), an increase from \$3.00 base PMPM plus \$1.16 PMPM earmarked for nurse care management in the initial CSI contract. After the first year of the renewal contract, the PMPM payment depends on achieving performance targets related to utilization reductions, quality and member satisfaction improvement, and process improvement. Practices receive:

- \$5.00 PMPM if 0 or 1 of the three specified performance targets is achieved;
- \$5.50 PMPM if the CSI-wide utilization performance target and one other performance target are both achieved; or
- \$6.00 PMPM if all three specified performance targets are achieved.

The utilization target is based on hospital admissions and emergency room (ER) visits. The quality target is based on seven clinical quality indicators³⁶ and the member satisfaction target is based on the results of a member satisfaction survey. Process improvement metrics include adopting a protocol for after-hours care, establishing compacts with high-volume specialists, and complying with best practices for transitioning patients from the hospital to the community.

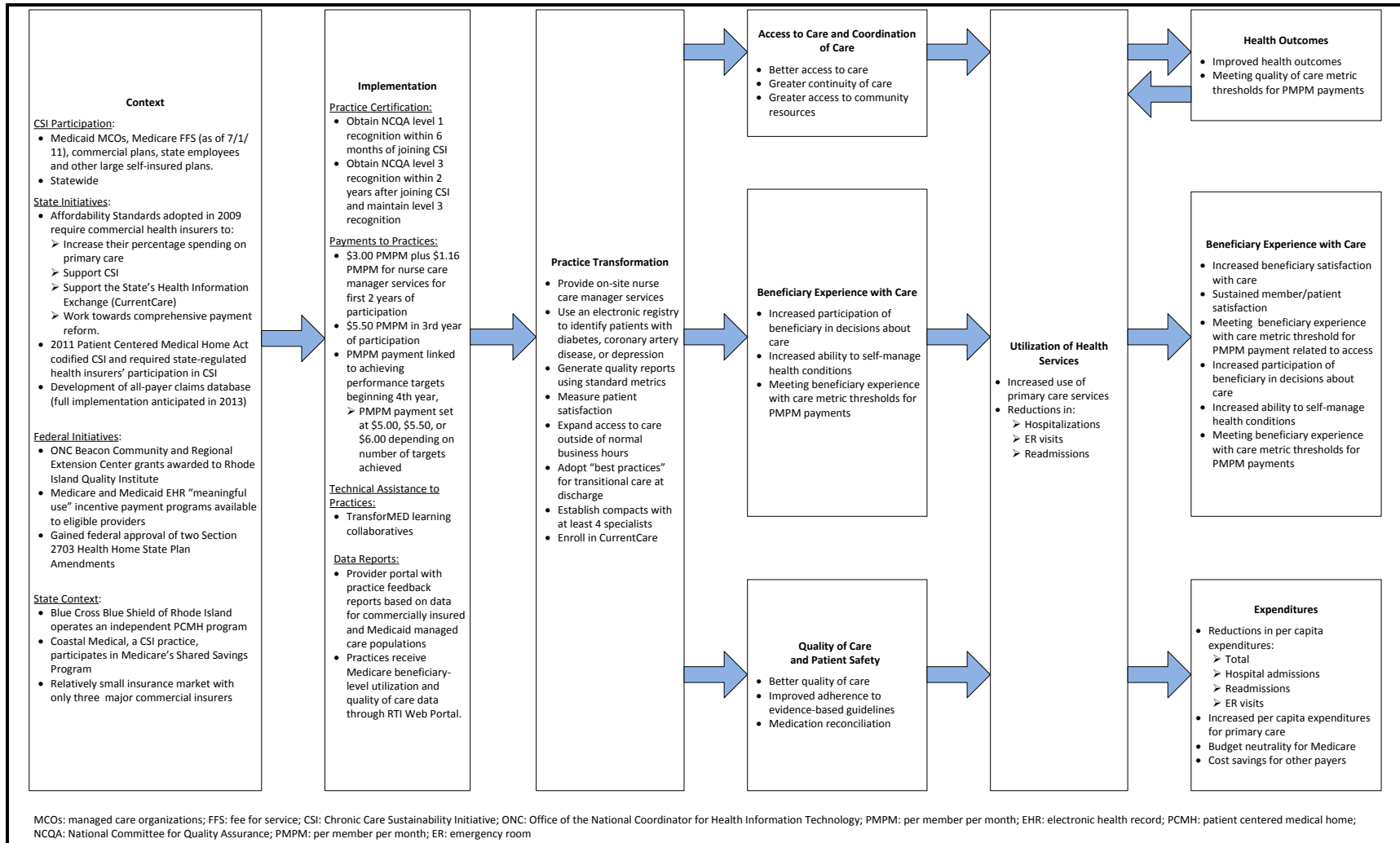
To enhance the ability of providers to capitalize on these resources, CSI offers practice coaching (through TransforMED), hosts in-person trainings, and convenes key practice staff for monthly videoconferences. Many of these activities are offered in conjunction with Rhode Island's Beacon program. Practices also receive performance feedback reports for quality improvement purposes. In addition, practices are beginning to use CurrentCare, Rhode Island's HIE, to share timely clinical information with hospitals.

4.1.2 Logic Model

Figure 4-1 portrays a logic model of CSI. The first column describes the context for the demonstration, including the scope, other state and federal initiatives, and the key features of the state context that affect the demonstration. The next two columns describe the implementation activities to promote transformation of practices to PCMHs. Successful interventions should promote more efficient utilization patterns, including increased use of primary care services and reductions in hospital admissions, hospital readmissions, and ER visits. These changes in utilization patterns are expected to produce improved health outcomes, greater beneficiary satisfaction with care, changes in expenditures consistent with utilization changes, and reductions in total per capita expenditures, resulting in budget neutrality for the Medicare program and cost savings for other payers involved in CSI.

³⁶ Practices originally reported six quality indicators. The number of indicators and the specific indicators reported changed in 2012 with the adoption of measures harmonized with the Beacon Community initiative.

**Figure 4-1
Logic Model for Rhode Island Chronic Care Sustainability Initiative**



4.1.3 Implementation

This section uses primary data gathered from the site visit to Rhode Island in October 2012 and presents key findings from the implementation experience of state officials, payers, and providers to address the evaluation questions described in *Section 4.1*.

External Factors Affecting Implementation

Since its launch in 2008, CSI has benefitted from a stable political environment and a high level of enthusiasm and support among stakeholders, including state officials, payers, and participating practices. Medicare entered into an initiative that has benefitted from strong strategic leadership and program management. Though several core leaders have transitioned to different roles or agencies during this time, they remain involved in and supportive of CSI and hold important institutional knowledge. State officials and payers point to the leadership provided by Chris Koller, Rhode Island's Health Insurance Commissioner, as key to building stakeholder consensus for CSI prior to program launch. As one payer put it, "This never would have gotten off the ground without the full weight of his [Chris Koller's] office." Though other areas of state government have been supportive of the initiative, state officials and payers noted that, outside of OHIC, state government has not played a significant role in shaping CSI. As one state official said, "This has been driven by a shared governance model between the primary care docs and the health plans." One state official described how Rhode Island state politics have evolved to support delivery system reform: "We've been lucky in Rhode Island with how politics has broken. In 2008 when this was starting, the Health Insurance Commissioner was a lone voice in the wilderness. After ACA [the Affordable Care Act] passed, we had a Lieutenant Governor [Lt. Gov. Elizabeth Roberts, elected in 2007] who started convening a health care reform initiative, but we had a governor [former Governor Donald Carcieri, elected in 2003] who didn't believe in it. When Governor [Lincoln] Chafee was elected [in 2010], all of a sudden we had a Secretary of Health of Human Services [Secretary Steven Costantino] who believed in it." Despite significant budget shortfalls in the state, budget pressures have not had a discernible impact on implementation.

Many of the payers agreed prior to launch that delivery system transformation was necessary and they began to look for avenues to invest in primary care. Respondents generally agreed that the small size of the state has encouraged an atmosphere of collaboration, trust, and cooperation since the early days of the initiative. Several payers mentioned that the state's payer community had a history of collaboration on quality initiatives. One state official noted that Rhode Island's relatively small insurance market simplified the process of convening payers and building consensus.

Implemented shortly after the launch of CSI, OHIC's Affordability Standards, specifically the requirements to increase primary care spending and provide financial support for CSI, were nearly unanimously viewed as a strong incentive for payers to invest in primary care and in CSI in particular. Most believe that CSI would continue without the Affordability Standards, but agree that the requirements help ensure its viability. One payer stated, "I think [CSI] would continue without the Affordability Initiative, but having that in place mandated by the person [Chris Koller] that convened this initiative puts a mark on it that it has to continue." Though Rhode Island's All-Payer Patient Centered Medical Home Act, passed in 2011, codified CSI's work and mandated participation of state-regulated health insurers going forward,

interviewees did not indicate that the law had a strong impact on implementation as payers were already participating in the initiative.

Many state officials, payers, and providers indicated that the Beacon-funded IT infrastructure, data systems, and analyses have been a tremendous boon to participating practices. The \$15.9 million Beacon Community grant provides extensive support and education to demonstration and non-demonstration practices. Funding for the Beacon grant will end in 2013, and state officials report that CSI leadership is working with RIQI to determine which aspects of the Beacon program will continue after funding ends. Each participating payer will be assessed \$1 PMPM to contribute to long-term sustainability of a number of Beacon initiatives.

Evolution of Pilot Implementation with Medicare's Entrance

Structural and organizational changes needed to accommodate Medicare. The addition of Medicare to CSI has gone relatively smoothly. Interviewees reported minimal structural, organizational, or programmatic changes to accommodate Medicare's participation.

Attribution and enrollment before and after Medicare's entrance. State officials and payers report that attribution was a contentious issue for payers and practices during the initial stages of CSI implementation before Medicare joined. They had devoted substantial energy to improving the patient attribution, and most report that stakeholders have accepted the current system. As one payer noted, "There has been some back and forth about the attribution and how accurate it is but it is the best we have at the moment. Sometimes your practices say that they feel like they have members they aren't getting credit for and the plans feel like they are paying for members you [the practices] don't have anymore. We work under the assumption that that balances out across the board."

State officials, payers, and practices reported some challenges with Medicare's patient attribution methodology. Practices that had done detailed patient attribution reconciliations said they always found more Medicare patients in their practices than they were getting paid for. In the words of one state official: "It's fascinating to look at what practices attribute and what Medicare attributes. ...It's completely unpredictable."

Changes in resource allocations and financing as a result of Medicare's participation. Medicare adopted the CSI payment methodology when it joined as a payer in July 2011 and no change occurred in the payment model as a result of Medicare's participation. In addition to making enhanced payments to practices, Medicare (along with all other participating payers) contributes to funding CSI's management functions based on the number of members participating in the program. OHIC and Lifespan, a major health system in the state that participates in CSI as a self-insured employer, also contribute to support project management.

Payers and state officials reported that they are largely satisfied with the methodology for making payments to practices and the payment amounts. A few mentioned that the initiative's original payment model, which paid practices \$3.00 PMPM plus \$1.16 to fund nurse care manager positions, was not enough to cover participating practices' transformation costs. As described in **Section 4.1.1**, CSI phased in a new payment model, implemented for the initiative's five pilot practices in April 2011 and the first 11 expansion practices in April 2012. This new

payment model was incorporated in the terms of renewal contracts. Although it coincided with Medicare joining CSI, the decision to adopt this model was independent of Medicare's entry. The new payment model provides higher PMPM amounts of \$5.00–\$6.00 that include the funding for nurse care manager positions. Though most state officials and payers believe that this amount is enough to support practice transformation and incentivize continuous improvement, others believe payments are still not enough: "They [practices] don't have enough money; they are doing this by the skin of their teeth." As noted in **Section 4.2**, a number of practices interviewed during the site visit indicated that the payments are not adequate to cover their costs.

In the first year of the renewal contracts, practices are paid \$5.50 PMPM; subsequently, payments to practices may increase or decrease by \$0.50 depending on achievement of key performance metrics. Some performance goals in the renewal contract were set without the benefit of benchmark data and some state officials believe that, in hindsight, goals for reduced hospital admissions and emergency room (ER) utilization were too high of a bar for practices to reach. Slow data reporting from health plans has limited practices' ability to meet goals in these areas: one state official, speaking about the challenges of meeting utilization targets set in the new contract, remarked, "The primary care practices were really engaged and thought they could do it. They didn't realize health plans were going to be slow with the data reporting." In 2012, the first year that pilot practices were subject to performance-based payments, the CSI steering committee chose not to reduce payments to pilot practices and payments will remain at \$5.50 PMPM until April 2013 despite their failure to meet the utilization performance targets.

Despite this, implementation of the new payment methodology has largely gone smoothly and performance-based payments have been accepted by payers and providers. One state official described the process of renegotiating the contract between providers and plans: "On the provider side we want more money, on the health plan side we want to see results. That made for a trade." Payers expressed satisfaction with the new model: "I think having performance incentives around quality and utilization makes inherent sense in the long run." Looking ahead, state officials hope to bring all participating practices onto a single "development contract" that will specify different requirements for practices at different stages of participation in CSI. State officials intend for this contract model to accommodate new practices if the program expands in the future.

Spillover effects on Medicaid and private payers as a result of Medicare's participation. Medicare's participation has had positive spillover effects on Rhode Island's Medicaid program and private payers. Payers welcomed Medicare's entrance into CSI, noting that this not only offers additional revenue for practices, but also validates CSI's efforts: "It was a feather in our cap, and it made the health plans feel better that a major payer was paying their fair share."

However, several interviewees asserted that Medicare is benefitting from the payment model at the expense of practices and other participating payers. One payer believes that the new payment model should have included a risk or patient complexity adjustment, and that Medicare benefits unjustly from the current payment structure. Some state officials indicated that Medicare payments should be higher based on amounts paid in other state medical home initiatives and in CMS's Comprehensive Primary Care Initiative (CPCI): "In Rhode Island, we

feel like we were handicapped by CMS when the CPCI call came out. We were early adopters and we accepted a lower rate of payment, and now you have an initiative for later adopters and they are getting more money.” A smaller number of state officials indicated they believe that Medicare’s contribution is appropriate.

Impact of data systems in CSI. RIQI administers CurrentCare, Rhode Island’s HIE, which allows participating providers and hospitals to share patient-level clinical information. State officials, provider associations, and other stakeholders reported that CurrentCare has struggled to engage a critical mass of providers and patients in Rhode Island. Stakeholders identified CurrentCare’s “opt-in” enrollment model as a key barrier to uptake; patients must agree to join the system rather than being enrolled automatically. During the site visit, few practices mentioned working actively to get patients to opt-in to CurrentCare. As of October 2012, only 25% of Rhode Islanders were participating in CurrentCare despite the fact that the Beacon program pays participating practices a \$3 per-patient incentive for every new patient enrolled. In addition, providers are reluctant to use a system that requires log-in to a portal outside of their EHRs. State officials noted that although uptake has been slow, CurrentCare continues to enroll patients and works to engage providers. Others noted that the opt-in model has in some ways been a boon to CurrentCare, allowing providers to exchange information that would otherwise not be permissible, such as information about mental health and substance abuse. Stakeholders noted that Lifespan, a major delivery system in the state, has an HIE that is separate from CurrentCare; some believe this may be discouraging Lifespan-affiliated providers from enrolling in CurrentCare.

Lack of timely, patient- and practice-level data has hindered CSI. In the words of one state official: “Feedback to docs was the area where I think everyone would say we need more improvement.” Rhode Island is currently working to build an APCD to support CSI and other initiatives, although progress toward completion of the database has been slower than expected. In the interim, RIQI is using Beacon grant funds to build a data warehouse and web portal that is being used to collect and analyze multi-payer data until the state-run APCD is ready to launch. The data warehouse currently includes data from all participating CSI payers except Medicare, although RIQI is working to incorporate Medicare data. The data warehouse is used to generate utilization measures for CSI practices. CSI practices upload required quarterly reports on clinical quality measures through the RIQI web portal. Participating practices have access to performance reports tracking their progress on clinical quality and utilization measures through the web portal and they can compare their performance to that of other participating practices. These clinical quality and utilization measures are also used to determine whether practices have achieved the targets for performance-based PMPM payments. Some stakeholders do not believe providers are using the reports as much as they could or should to inform continuous quality improvement: “We still have some practices that, even though they’re being paid on this, don’t look at their own data.” Others question the utility of the reports themselves, noting that payer data is often weeks old by the time it comes to providers, and that many providers have scant time or resources to perform the necessary analysis.

Since Medicare joined CSI, practices have access to Medicare data through a separate portal created by RTI for the MAPCP Demonstration, but the data have been of variable use to practices. Some interviewees identified the fact that it must be accessed through a separate portal as a significant barrier to using these reports to inform quality improvement; others

identified limited time and human resources for data analysis as a factor impacting practices' use of Medicare data.

Impact of technical assistance to practices in CSI. CSI is able to leverage funding from the Beacon grant to support a range of technical assistance to practices, including health IT and data support and education and coaching for practices. The Beacon program contracted with TransforMED to provide education and coaching for practices. Many state officials found that this technical assistance was too basic for practices that had already had transformation efforts underway. One state official pointed out the difficulty of TransforMED's charge because the practices varied so substantially in their needs. Interviewees agreed that education for practices must be addressed. Feedback had been provided to TransforMED and state officials believed the quality of support was improving. Among short-term priorities is the need to focus on internalizing quality improvement measurements.

4.1.4 Lessons Learned

State officials, providers, and payers unanimously agreed that the most important feature of CSI has been the practice-based nurse care managers. CSI's emphasis on financing nurse care management was considered to be a key driver of success in terms of practice transformation and improvements in clinical care: "The nurse care manager seems to be the special sauce for this program, and seems to be generating dividends more than we thought."

The lack of hospital involvement in CSI is a weakness identified by state officials, payers, and provider associations, and has resulted in challenges around data sharing and coordinating care transitions. Hospitals were not viewed as critical players because CSI was conceived of as a primary care provider initiative and much of the initial focus has been on internal practice transformation activities. A number of state officials discussed seeking ways to improve relationships between primary care providers and hospitals around these and other capabilities. The exception is the group of four small practices that receive practice supports from the local hospital (South County Hospital). One state official noted that they were intentionally brought into CSI "so we could learn about how a hospital could play a role in integrating those practices."

There is minimal behavioral health integration and variable access to other community-based services. Medicaid has plans to pilot community health teams (CHTs) as a means of providing shared supports to practices. In September 2012, Rhode Island submitted a Model Design application for the CMS State Innovation Models (SIM) initiative to support the state's PCMH work. South County Hospital, which has been a willing partner in CSI, provides a good base to build community-based services and is the likely site to pilot the CHT model.

There is a strong sense of optimism among stakeholders in Rhode Island. They feel that CSI is improving Rhode Island's health system, contributing to better outcomes for patients, and building a better practice environment for physicians. Though Rhode Island payers reported that CSI has produced limited data to demonstrate that practices improved quality or reduced costs, all indicated that their support remains strong. Payers repeatedly stated that they believe they are seeing, or that they will see, returns on their financial investment in CSI. Stakeholders also indicated that they believe CSI is meeting other goals of the initiative. In the words of one payer,

a former practicing primary care physician: “I think all these things put into the practices give them [practices] a sense they can do something they really would like to be doing. Most of us went into medicine to make things better for our patients and the population, and I think that most doctors don’t feel they can do that within the current payment structure. It’s a new hope and new way to do things. I’ve never seen such excitement about practicing [medicine], comparing now to pre-PCMH days. Doctors are pretty excited about what they’re doing. That’s pretty invigorating.”

State officials and payers emphasized that CSI needs increased emphasis on performance measurement and patient engagement at the practice level. State officials and payers identify CSI as both a step in the right direction and a base upon which further efforts, such as accountable care arrangements, can and will build.

4.2 Practice Transformation

This section seeks to answer evaluation research questions related to describing the features of the practices participating in CSI, identifying the changes that practices made in order to take part in the demonstration and meet participation requirements, describing TA to practices, summarizing early views on the payment model, and giving an account of experiences with the demonstration thus far. We rely upon findings from our initial site visit and secondary data provided by the state to answer these research questions.

4.2.1 Changes Practices Made to Join the Demonstration

Practices are making a number of changes related to NCQA PPC[®] PCMH[™] recognition, administrative issues, and health IT in order to participate in CSI.

PCMH recognition. Although none had NCQA PPC[®] PCMH[™] recognition before joining CSI and few had EHRs, most practices reported that they were already functioning like a medical home, at least in terms of providing enhanced access, offering weekend and evening hours, and, for some, same day appointments. A common sentiment was reflected in the comments of one practitioner: “Our practice was already doing many of the practice requirements before it joined CSI. The only change was that we had to document it for NCQA recognition.” Another provider said: “We were doing many of these things [medical home related changes] all along, but we just weren’t doing them well.” An evaluation of the CSI pilot period sponsored by the Commonwealth Fund found substantial improvements from a pre-CSI baseline in practices’ performance on NCQA PPC[®] PCMH[™] standards (Rosenthal, 2012). A physician and practice staff survey conducted as part of that evaluation also found improvements in job satisfaction and in perceived ability to provide high quality care. However, ratings of communication with specialists declined (Rosenthal, 2012).

Essentially all of the practices interviewed during the October 2012 site visit believed they had met the expectations of the CSI program. All acknowledged that this involved a wide range of transformative changes. The most challenging assignment, by far, was achieving NCQA recognition as a PCMH. Although all of the five pilot practices and the first 11 expansion practices have achieved the Level 3 status required for continued participation in CSI, the individuals interviewed at practices commented that the recognition process was difficult, annoying, and a distraction from clinical care activities. One practice lead characterized it this

way: “It is bureaucracy and nothing else. I remember thinking I would rather be audited by them so we could physically show them what they want. Some of it is just the silly way they ask for things and it’s not user friendly. It was really painful and we’re afraid just thinking of the next step. It’s not clinical stuff by any means; it’s bureaucratic.... You could do all of the things they ask for in Level 3 but take really poor care of your patients.”

Administrative changes. Most practices reported only minor changes in their administrative structures or relationships. Many of the practices, however, carefully reexamined how to optimally use their existing staff to improve care, leading to role refinements, new assignments, and clarification of how the practice staff would function as teams. Several of the practices had hired new staff (especially medical assistants). Most practices had started or increased the frequency of staff meetings.

Many practices have incorporated novel processes of care, like using pre-visit planning or checklists, post-visit summaries, reminders to have laboratory tests done before the visit, and more comprehensive screening assessments as part of the visit. Several practices had improved their ability to provide patient education materials during the encounter. A few practices had activated web-based patient portals to improve access. One large practice claimed 40% of its patients were enrolled in its patient portal, but utilization seemed to be rather limited in other practices.

A challenge for many of the practices was the expectation for them to acquire, review, and use quantitative data to improve performance. As discussed below, this typically involved using registry-type data to monitor quality metrics in key disease states (e.g., diabetes, hypertension), and to monitor compliance with recommended screenings for depression, tobacco and alcohol use, and cancer. Also new to the practices was the use of “plan-do-study-act” performance improvement cycles to target key performance areas.

As of the fourth quarter of 2011, each of the five pilot practices had met the requirement to establish four compacts with key specialist consultants and hospitalists. By the second quarter of 2012, the first 11 expansion practices had each established compacts with two specialists and were expected to reach the required four compacts by the end of the year.

One practice had expanded and relocated during their transition to becoming a PCMH, and had incorporated many interesting and unique architectural features in their new building. These were designed to enhance PCMH performance, work flow, and patient and provider satisfaction. Features included open-air computerized kiosks for check-in (similar to airports) to reduce lines, color-coded areas that designated different care teams, and conferencing space to accommodate micro-team meetings.

Health information technology. All of the practices interviewed during the site visit were using an EHR, typically obtained through funding from a BCBS Rhode Island grant, a grant from Rhode Island’s Regional Extension Center program, or both. MAPCP Demonstration funding, therefore, was not used to secure their original IT resources or EHRs. With these EHRs, the practices could e-prescribe; generate progress notes, orders, and consultation requests electronically; and see and track laboratory test results. The practices agreed that having an EHR

had facilitated compliance with providing preventive services (e.g., vaccinations, screenings for cancer, hypertension, depression, or alcohol abuse).

The functionality, ease of use, and user satisfaction varied considerably from one EHR to another. Each practice used a different EHR and they generally did not allow information sharing across practices or with the local hospital. When patient data needed to be shared, it was sent by Health Insurance Portability and Accountability Act (HIPAA)-compliant fax. Some of the EHRs allowed tracking of requested laboratory tests and consults, while others did not.

All of the practices were using disease registries, typically generated by the reporting functionality of their EHRs, to identify patients with diabetes, depression, coronary artery disease, and other chronic conditions. Registry-type data were also obtained for some patients through other means, such as from some commercial insurers and from the RTI-operated MAPCP Demonstration portal. In one large practice, high-risk patients were identified systematically using information on disability status, utilization data, and reports from commercial insurers on high-cost patients. In smaller practices, the physicians typically simply identified patients with special needs as they were seen.

4.2.2 Technical Assistance

During CSI's pilot period, technical support was provided through learning collaboratives initially funded through a grant from the Centers for Disease Control and Prevention (CDC) to the state Health Department and then through a grant from the Rhode Island Foundation. The practices valued these day-long learning collaboratives and several other support services provided by the state, including monthly teleconference calls and opportunities to learn from peer practices through a "buddy system."

The state now uses funding from a Beacon Community grant to contract with TransforMED to provide practice coaching, counseling, and education. Practices first complete an on-line readiness assessment, which TransforMED uses to develop a practice transformation plan in conjunction with each practice. Support would then continue through practice coaching and a series of learning sessions.

Some practices perceived TransforMED's support as useful. TransforMED had provided metrics for assessing access and patient experience for one practitioner and had conducted a cycle time analysis for another practice. However, other practices felt that the level of technical assistance was not appropriate to the degree to which the practice had already transformed. Several practices thought TransforMED lacked credibility, for example, compared to getting advice from other professionals or other PCMH practices.

In addition to receiving support and advice from the state and peers, some practices received PCMH advice and technical assistance from private insurers that are also promoting PCMH initiatives, particularly BCBS. More than one practice mentioned the need for a formal training program for nurse care managers.

4.2.3 Payment Supports

CSI practices are expected to use a portion of the payments they receive to cover the salary of an “embedded” nurse care manager. Beyond paying for nurse care managers, practices use the payments they receive for a wide variety of purposes, for example, to hire physician aides, or simply to support the “bottom line.” In general, practices reported that the payment system was working well. However, performance-based payments had only recently been implemented for the pilot practices and, as described in *Section 4.1.3.2*, the CSI Steering Committee chose not to reduce payments to pilot practices despite their failure to meet the utilization performance targets.

The practices interviewed during the site visit felt that the CSI payments were not meeting all of their needs relative to delivering optimal PCMH services. Practices with a larger fraction of uninsured patients felt this most acutely. One provider explained, “The payments we get for care management are limited to the insured population so we do not have enough care managers. The portion that we get paid for doesn’t cover our whole population.” Another provider summarized his perceptions: “The medical home is the stepping stone to accountable care. I also think that accountable care becomes the business model for sustaining medical homes.... While they provide reasonable financial support for this kind of work, the current CSI payment is insufficient to drive a full evolution of delivery to accountable care by medical homes. It’s not sufficiently robust to be able to really fully realize the model, whereas I think a shared savings model could get us there....I would say we’re about 40–50% to where we want to be.”

Medicare’s joining CSI was welcomed by all of the practices, both financially and psychologically. A common sentiment was that the Medicare patients had received the benefits of the CSI initiative all along, but now the practices were being more appropriately compensated for this. For some practices with smaller Medicare populations, the financial benefit was minimal. Generally, the additional funds generated when Medicare joined were used to expand support for care managers or quality review staff. In some cases practices were able to add part-time staff to help with PCMH functions, or allow existing staff to devote more of their time to these activities. One very small practice that used the Medicare payments to pay his taxes commented, “We apply it to our bottom line and it helps us stay afloat.” The most commonly mentioned concern was that funding for the initiative might end someday. Practices felt that this would be a crippling outcome, and would likely undo much of the progress that had been made in becoming a medical home.

4.2.4 Summary

Generally, the participating sites were delighted with CSI and with the many improvements that their practices had realized through participation, despite the challenges presented by the practice transformation experience (obtaining NCQA PPC[®] PCMH[™] recognition, using a new EHR, developing a host of new policies and practices, improving access and coordination, using data to improve performance). Going forward, the practices expressed hope that the PCMH programs would continue to grow and expand to other primary care practices in the state. As one provider said, “I think CSI has been very successful....I’m completely sold on this whole concept.” Another voiced support in this way: “I would like to see CSI expand out into the state much more aggressively and rapidly.” One practice lead

expressed his hope that the PCMH practices would be used as training sites for medical residents, as a way to ensure that physicians entering practice would be familiar with the benefits of the PCMH model.

Most expressed the feeling that CSI allowed them to provide high-quality and coordinated care. In the words of one provider, “I know we are doing a better job because I see the numbers going up and I can see how care is improving. We are now missing less A1Cs than we were missing before and it is definitely good to be part of something that is improving care. We always talked weight, but now we are measuring it and we need to get credit for it. Now we get credit for asking people to stop smoking.”

4.3 Quality of Care, Patient Safety, and Health Outcomes

4.3.1 Implementation of State Initiative and Practice Features Expected to Improve Quality of Care, Patient Safety, and Health Outcomes During Year 1

Rhode Island requires CSI practices to report on quality measures on a quarterly basis. Practices have been reporting quality measures since CSI began in 2008, although the measures have changed somewhat over time based on feedback from the CSI steering committee. In 2012, CSI modified its quality measure reporting requirements to harmonize them with other initiatives in the state, including the Beacon Communities program. CSI practices submit their data to a web portal developed using Beacon Community grant funds. Once submitted, the data are compiled by RIQI and shared with all CSI practices through the web portal.

Quality is one of the metrics used to establish performance-based PMPM payments in renewal contracts. In 2012, practices subject to performance-based payments (the five pilot practices) had to meet or exceed the target threshold (or reduce the distance between their baseline performance and the threshold by at least 50%, but a minimum of 2.5 percentage points) for at least three of six quality measures:

- HbA1c control of 8.0% or less in diabetic patients
- blood pressure control (< 130/80) in diabetic patients
- LDL control (< 100) in diabetic patients
- beta blocker prescribed for coronary artery disease patients
- depression screening
- tobacco cessation intervention

All five pilot practices satisfied the requirement to meet the threshold or reach 50% of the way from their baseline to the target threshold for three of the six measures.

In 2013, practices receiving performance-based payments (the five pilot practices and the first 11 expansion practices) will be required to meet or exceed the target threshold (or decrease the gap between their baseline value and the threshold by a minimum of 50%, but at least 2.5

percentage points) for four of seven harmonized metrics shown in *Table 4-4*. Practices report five additional quality measures, but these are not used to determine PMPM payments:

- depression screening
- poor control of HbA1c (> 9.0%) in diabetic patients
- good blood pressure control in diabetic patients (< 130/80)
- tobacco use assessment
- blood pressure measurement for hypertensive patients

Table 4-4
Quality performance metrics, 2013

Measure	CSI threshold (% of patients satisfying)
BMI assessment in adults 18–64 years of age	50
BMI assessment in adults 65 years or older	50
HbA1c control of 8.0% or less in diabetic patients	67
Blood pressure control (< 140/90) in diabetic patients	75
LDL control (< 100) in diabetic patients	50
Tobacco cessation intervention	85
Blood pressure control in hypertensive patients (< 140/90)	68

NOTE: BMI=body mass index; CSI=Chronic Care Sustainability Initiative; HbA1c=hemoglobin A1c; LDL=low-density lipoprotein.

Practices have found reporting quality metrics for CSI beneficial because they consistently track their performance on these measures and they spend more time on quality improvement activities, including creating reports and having meetings to determine actionable steps to improve their performance. Practices typically use the nurse care managers or additional quality staff to create and analyze the quality reports. Practices valued meetings of staff at CSI practices organized by the state because they could hear how other practices were changing their processes or redesigning workflows in order to improve their performance on quality measures. Nonetheless, practices reported that it was more difficult to change health outcomes such as HbA1c results or low-density lipoprotein (LDL) results than it was to make improvements in process measures as many factors outside of the practices’ control (e.g., patient behavior modification) affect these health outcomes. As one provider highlighted, “We can get a machine to do a fingerstick when they [diabetic patients] walk in the door but to actually improve that number [HbA1c] is more challenging.”

Practices have also used registries generated by their EHR to improve care quality by targeting patients. A few practices use their EHR to generate lists of patients with high rates of

service use or complex service needs who are provided additional care management. Other practices use registries to identify patients who are due for preventive services such as flu shots and cervical cancer screenings. Some practices reported that evidence-based guidelines are embedded in their EHR. However, it was unclear how much this functionality is being used. Providers at one practice have access to Up-to-Date, a medical knowledge and evidence-based guidelines resource, through their EHR.

Technology plays a significant role in improving patient safety within Rhode Island's CSI practices. Most CSI practices reported receiving laboratory and diagnostic results electronically from large hospitals and laboratories, which reduces the chance for error in reporting and duplication of laboratory and diagnostic testing. CurrentCare, Rhode Island's state-wide HIE, could assist in eliminating duplicate tests; however, use by practices and hospitals is limited. Most practices have enhanced patient-provider communication and education by providing education materials at the point of care through their EHR. Additionally, some practices have a patient portal where patients can access up-to-date medical records. One practice coordinates group visits for patients with certain chronic conditions (e.g., people with diabetes and people with chronic pain). The group visits are used to educate patients about their condition, teach them about self-management, and allow them to share experiences and learn from one another. All practices have the capability to e-prescribe and most have an EHR with the capability of identifying drug interactions.

Nurse care managers working within CSI practices also enhance patient safety through intensive care coordination, medication reconciliation, and patient education. Some practices reported that their nurse care manager conducts medication reconciliation with patients after a care transition, such as a discharge from the hospital, or as part of managing patients with multiple medications. In addition, while having a pharmacist on-site is not a key component of CSI, a few practices reported that they had an on-site pharmacist doing these reconciliations with patients.

Many of the activities in practice transformation, patient safety, and quality of care have the goal of improving beneficiary health outcomes by reducing acute and preventable events. By coordinating patient care, CSI practices believe nurse care managers have been able to keep patients out of the ER and hospitals and improve health outcomes. Regarding the importance of the nurse care managers, one interviewee stated, "These nurse care managers, in my opinion, are on the absolutely ground floor, cutting edge paradigm of how we're delivering care in this part of the state. They have had a huge impact on the quality and outcomes of patients that typically fell through the cracks and had a lot of admissions."

4.3.2 Impacts on Quality of Care, Patient Safety, and Health Outcomes

Quantitative data assessing the impacts of CSI on quality of care, patient safety, or health outcomes on Medicare beneficiaries are not yet available. Future annual analyses and reports will attempt to assess the impact on these outcomes. Beginning with the second annual report, we will include descriptive and, where appropriate, multivariate analyses of process of care quality indicators, EHR Meaningful Use rates, prevention quality indicators, as well as outcomes on mortality, and incidences of serious medical events, using Medicare data. We will also

provide results on self-reported health status based on the PCMH-Consumer Assessment of Healthcare Providers and Services (CAHPS) survey.

4.4 Access to Care and Coordination of Care

4.4.1 Implementation of State Initiative and Practice Features Expected to Improve Access to Care and Coordination of Care During Year 1

Many of the requirements for the practices to participate in CSI promote access to care and coordination of care, including NCQA PPC[®] PCMH[™] recognition, which has several “must pass” elements related to care access and coordination; and renewal contract requirements for an after-hours protocol, compacts with high volume specialists, and compliance with best practices for care transitions.

Participating practices are required to hire nurse care managers and the contracts with CSI practices delineate a number of responsibilities for nurse care managers related to access to care and coordination of care. These include:

- using a multi-disciplinary team approach to address opportunities to plan and coordinate care;
- helping to arrange contact with ancillary personnel;
- coordinating care and communicating with multiple providers, both within and external to the practice;
- identifying and utilizing cultural and community resources;
- ensuring open communication regarding patient status with physicians and office staff;
- acting as liaison to hospital, long-term care, specialists and home health representatives; and
- interacting and coordinating with hospital and other provider staff.

Practices interviewed during the site visit indicated that they had made changes to increase access before the CSI pilot began. A few practices reported that they further expanded office hours or improved telephone access after joining CSI. Many sites had activated online web-based patient portals. One practice opened a new walk-in clinic and another large practice group arranged for one of their practice sites to be open every day to provide 365-day-per-year access. However, one individual representing a practice called same-day access the practice’s greatest “bugaboo” and described challenges in monitoring how long patients are left on hold when they telephone the practice. Some of the solo practitioners were still struggling with how to provide after-hours access. One respondent questioned the efficiency of small practices providing after-hours care and suggested it might be preferable to centralize that care at a hospital, for example.

All practices have at least one embedded nurse care manager, who is usually employed by the practice. At four smaller practices, the nurse care manager is employed by the local hospital. This was partly a pragmatic decision because, based on their patient load, these practices only received funding for a portion of a nurse care manager's salary. Most stakeholders identified nurse care managers as key to improving accessibility and coordination of care. One physician at a CSI practice described the nurse care manager as the "red carpet to the practice" for complex and vulnerable patients.

Efforts to improve care coordination varied considerably across practices. A major focus of most nurse care manager activities was on facilitating care transitions for patients recently seen in the ER or recently discharged from the hospital. In addition, most nurse care managers focus on complex patients with multiple comorbidities and complex psychosocial needs. These patients are typically identified by the physicians caring for them; few practices were using analytics to target them. Nurse care managers are also involved in medication reconciliation. At some practices, nurse care managers have been involved in NCQA recognition and data reporting, which has taken away from their time for care coordination. Some interviewees identified a need for staff to focus on data analysis so nurse care managers could be freed up for patient-centered activities.

Some practices receive real-time lists of patients recently discharged from the hospital or patients seen in an ER. Whether practices receive these lists depends on the local hospital. In addition, some payers provide practices with lists of high ER users, but these lists are provided independent of CSI. A few practices reported receiving electronic faxes of consultation notes from specialists. Variability in communication between hospitals and practices about patients seen in the ER or discharged from the hospital was noted as a barrier to promoting care coordination.

Practices varied in their assessment of whether the required compacts with specialists were meaningful. While compacts can be a good starting point and they promote conversations with specialists, an interviewee at one practice stated that "there needs to be more on the line than just having an agreement." In many cases, practices already had strong relationships with these specialists. Although the practices interact with dozens of specialists, the practices commented that they generally enjoyed longstanding and cordial relationships with their specialist consultants and that they received prompt service and timely reports from these consultants even before entering into compacts, implying that not having a service agreement with specialists was not a major problem. In contrast, several practices commented on the critical need to have an effective working relationship with hospitalists caring for their patients, and that the requirement to establish service agreements had initiated valuable discussions with these providers.

Practices reported that changes related to improving access and coordination preceded the start of the MAPCP Demonstration and there were no important changes after Medicare joined. Because practices do not differentiate their care of patients by payer, Medicare beneficiaries already benefitted from these changes before Medicare joined. However, Medicare's entry provided more resources to support these activities. For example, some practices were able to increase their nurse care manager staffing.

Interviewees did not mention specific plans to further improve access to care and coordination of care. Coordination of care could be promoted if Rhode Island's HIE, CurrentCare, becomes more established and expands to include a larger share of the population.

Although Rhode Island's MAPCP Demonstration application describes several community-based resources to which nurse care managers could link patients, CSI does not include specific components to improve these linkages and community resources were mentioned rarely in practice interviews. A few practices described working with the visiting nurse association to provide home care services. A few interviewees mentioned the possibility of incorporating CHTs in CSI in the future, particularly to support small practices. Several interviewees noted that practices need to develop approaches for integrating behavioral health services.

4.4.2 Impacts on Access to Care and Coordination of Care

Quantitative data assessing the impacts of CSI on access to care and coordination of care on Medicare beneficiaries are not yet available. Future annual analyses and reports will attempt to assess the impact on these outcomes. Beginning with the second annual report we will include descriptive and multivariate analyses of several indicators of access to care and coordination of care. Claims-based indicators will include primary care physician and specialist visit rates; ratio of primary care visits to total ambulatory care visits; percentage of discharges from the hospital for a medical admission with a follow-up visit within 14 days; rate of unplanned readmissions within 30 days after discharge; the percentage of ER visits that do not lead to a hospitalization; and a continuity of care index, which measures the concentration of visits among providers in the practice that is the beneficiary's usual source of care or to whom the beneficiary was referred by a provider in that practice. In addition, we will analyze a measure of care coordination based on responses to the PCMH-CAHPS survey.

4.5 Beneficiary Experience with Care

4.5.1 Implementation of State Initiative and Practice Features Expected to Improve Beneficiary Experience with Care During Year 1

CSI does not include features specifically designed to improve beneficiary experience with care, although PCMHs generally are expected to improve beneficiary experience, increase beneficiary participation in decisions about their care, and increase their ability to self-manage care. The CSI renewal contract requires practices to conduct a member satisfaction survey. The performance metric for determining PMPM payment rates related to beneficiary experience with care in the renewal contract requires practices to achieve at least 80% satisfied on a validated patient satisfaction survey. This was operationalized as having 80% of patients "usually" or "always" satisfied based on the composite measures for the Office Staff and Provider Communications domains of the PCMH-CAHPS survey. In 2012, rather than having each practice field its own survey, Beacon grant funds sponsored administration of the PCMH-CAHPS by a NCQA-approved vendor. As required by their contracts, all pilot practices participated in this round of surveys; six of the original 11 expansion sites participated voluntarily and one of the pilot practices fielded its own CAHPS survey. Practice patients were sampled regardless of payer type, but information on payer was not collected so results could not

be reported separately for Medicare and Medicaid beneficiaries. All five of the pilot practices met the performance metric for patient satisfaction in 2012.

The PCMH-CAHPS survey will be administered in 2013, again using Beacon grant funds. All practices, including the original expansion practices, will be required to participate and practices will be assessed against benchmarks for the Access domain (53% responding “always”), as well as the Office Staff (72% responding “always”) and Communication (80% responding “always”) domains. Practices must satisfy the Access domain benchmark and the benchmark for either the Office Staff or Communication domain to satisfy the beneficiary experience of care component of the performance metrics for PMPM payments in 2013. Practices that do not exceed these benchmarks can satisfy the metric by improving their performance and reducing the gap between their score and the benchmark by 50%, but at least 2.5 percentage points. The 2013 benchmarks are the median practice result for the percentage of patients responding “always” for these composite measures in the 2012 survey.

Interviews with physicians and office staff in several participating practices indicated that many practices are implementing changes that are intended to improve beneficiary experience of care or patient engagement and self-management. Practices reported an increased focus on self-management, through nurse care managers’ work, coaching and education from medical assistants, and the availability of self-management classes. Additionally, the Department of Health offers self-management classes funded by other initiatives, although only one practice mentioned these as a resource, and one state official reported that referrals to those classes from CSI practices have not increased. Several interviewees indicated that they would like to pay more attention to beneficiary experience of care in the future. Interviewees at practices noted several changes they would like to make, such as increasing same-day access and getting patient input as they make practice improvements. Another interviewee reported that practices needed more help with improving patient engagement, and that it should be a learning collaborative topic.

In general, interviewees had divided opinions on the extent to which beneficiary experience of care and engagement was addressed at the initiative level, even with the incorporation of related performance metrics in the renewal contract. From one interviewee’s perspective, CSI “has not focused enough on what the patient experience is and it focuses on the practice. It [PCMH] is a cultural issue within the practice, it’s an administrative issue within the practice, but it has very little to do with what the patient experience.” Several interviewees noted that there are no patients involved in the governance of CSI, and that practices’ attention to patient engagement and participation in decision making was mixed and at times limited to gestures such as providing informational brochures. One provider identified the lack of patient engagement as a potential barrier to the success of CSI; patients do not understand PCMH model or how to take advantage of it. Interviews with payers revealed that they do not generally look at patient satisfaction data nor do they hear from their members about features like access. A few patient advocates mentioned that using the Beacon grant to fund administration of PCMH-CAHPS in CSI practices could turn practices’ attention to beneficiary experience of care more consistently and reliably than if a standardized instrument was not required, as was originally planned. Some interviewees suggested that there are opportunities for the broader health care system to support changes to improve beneficiary experience and self-management, and to

increase beneficiaries' use of CSI resources. Furthermore, one state official suggested that the state needed to make it easier for practices to refer patients to self-management classes.

4.5.2 Impacts on Beneficiary Experience with Care

Quantitative data assessing the impacts of CSI on beneficiary experience with care are not yet available. In the second annual report, we plan to report our findings from the PCMH-CAHPS survey administered to Medicare beneficiaries.

4.6 Effectiveness (Utilization & Expenditures)

4.6.1 Implementation of State Initiative and Practice Features Expected to Affect Patterns of Utilization and Expenditures During Year 1

CSI incorporates a number of features that are expected to reduce utilization and expenditures, including

- nurse care managers embedded in PCMH practices;
- activities to expand access to care, including having an approved after hours protocol;
- activities to better manage care transitions, including entering in to compacts with high volume specialists; and
- technical assistance to practices through learning collaboratives.

There are no features that specifically target Medicare or Medicaid beneficiaries. However, to the extent that they are in poorer health and more likely to have multiple chronic conditions compared to the commercially insured population, Medicare and Medicaid beneficiaries may disproportionately benefit from CSI and there may be greater impacts on their utilization and expenditures.

Practices have only recently begun receiving data on utilization and expenditures for their patients. A few practices reported using data for Medicare beneficiaries provided through the RTI-operated portal for the MAPCP Demonstration. Private insurers have not routinely provided practices with data on utilization rates for their members (which include their commercial, Medicare Advantage, and Medicaid managed care lines of business), although they have provided reports that practices can use to target patients, including lists of high ER users, patients with a hospital admission during the past week, and patients with an ER visit during the past week. Practices report that the lack of information about utilization has been challenging. Through an initiative supported by the Beacon grant, practices are now receiving reports on patient utilization aggregated across all commercial payers and across all lines of business that is derived from the multi-payer data warehouse described in *Section 4.1.3*. FFS Medicare claims have not yet been incorporated in the data warehouse used to generate these reports because of delays in signing a Data Use Agreement with CMS, but efforts are underway to include Medicare data. Although 63% of CSI practices had at least one user access the RTI-operated MAPCP Demonstration portal from October–December 2012 (see *Section 2.3.3*), during the site

visit only a few practices reported using data from the portal for Medicare beneficiaries. Having consistent data across payers was considered more valuable than payer-specific reports.

As described in *Section 4.1.1*, hospital admission and ER visit rates is one of the metrics used to determine practices' PMPM payment rates in renewal contracts. These rates are calculated from the multi-payer database described above, which includes data from commercial payers, including Medicaid managed care and Medicare Advantage products. As noted above, FFS Medicare data are not included in the multi-payer database currently, but they are expected to be included in the future. The metric requires CSI practices to achieve a 5% reduction in overall hospital admissions (not specifically for the admissions related to the respiratory, circulatory, and endocrine systems) and a 10% reduction in ER visits relative to similar, non-PCMH practices. Although CSI practices are expected to meet the goal for both hospital admissions and ER visits, if one of these utilization goals is not met, practices are still considered to satisfy the metric if they achieve at least 75% of the goal and exceed the other goal by one percentage point or more. The utilization metric is based on the pooled performance of practices, with pilot and expansion practices pooled separately. Although pooling dilutes the incentive for an individual practice to reduce utilization, pooling was considered necessary to protect practices, particularly smaller practices, from the risk of random variation in utilization. Nonetheless, most respondents believe that the utilization performance metric provides a meaningful incentive to practices. In 2012, the first year that PMPM payments to pilot practices were tied to performance metrics, the pilot practices did not meet the utilization metric.

Despite the failure to meet the utilization performance metric, commitment to CSI was strong across all types of stakeholders. A common sentiment was that savings will appear with enough time. One respondent voiced concern that utilization impacts may not be observed for Medicare beneficiaries because they benefited from practice changes even before Medicare joined CSI: "I worry about that because that would imply to Medicare that they can free ride and that would be a wrong thing to do." In addition, some practices expressed the belief that their ability to reduce ER use has been impeded by poor communication from ERs.

Beyond activities related to CSI, several other activities in Rhode Island may affect utilization and expenditures observed during the MAPCP Demonstration period. Rhode Island's primary care spend requirement has a goal of increasing spending on primary care by 1% annually. Insurers can satisfy this requirement in a variety of ways, including spending on CSI, innovative payment models, and investment in infrastructure. BCBS of Rhode Island has an independent PCMH initiative that operates parallel to CSI. Respondents noted that there is little ACO activity in Rhode Island, although Coastal Medical (which has two practice sites participating in CSI) has been selected to participate in the Medicare Shared Savings Program.

4.6.2 Year 1 Findings on Effectiveness

In this section, we present descriptive statistics and estimates of the demonstration effects from the quarterly fixed effects regression models (*Section 1.2.3, Equation 1.1*) for three Medicare expenditure outcomes (total expenditures, expenditures for short-stay, acute care hospitals, and expenditures for ER visits) and three utilization outcomes (all-cause, acute care hospitalizations, ER visits, and 30-day unplanned readmissions). The results are based on 26 quarters of data.

- Baseline period: January 2006–September 2008 (11 quarters). This is the period prior to the start of CSI in Rhode Island.
- Pilot period: October 2008–June 2011 (11 quarters). This is the period after the start of the CSI but prior to Medicare joining the initiative.
- Demonstration period: July 2011–June 2012 (4 quarters). This is the first year after Medicare joined the CSI.

The descriptive statistics reported here are weighted sample means of the Medicare expenditure outcomes and utilization rates from 2006 through the first year of the MAPCP Demonstration. The averages are calculated separately for (1) beneficiaries assigned to CSI practices, (2) beneficiaries assigned to PCMHs in the comparison group, and (3) beneficiaries assigned to non-PCMHs in the comparison group. The weights adjust the averages for differences in demonstration eligibility and for observable differences in beneficiary-, practice-, and geographic-level characteristics.

The regression models (see *Section 1.2.3*) were estimated separately using two distinct comparison groups: (1) beneficiaries assigned to PCMHs in the comparison group, and (2) beneficiaries assigned to non-PCMHs in the comparison group. The regression results aim to answer two key evaluation questions:

1. Did CSI affect expenditures and utilization rates during the MAPCP Demonstration period? Specifically, was the initiative associated with slower growth in Medicare expenditures or reductions in utilization, relative to beneficiaries assigned to comparison practices?
2. Did the demonstration effect differ, depending on whether beneficiaries assigned to CSI practices were compared to either (1) beneficiaries assigned to PCMHs in the comparison group, or (2) beneficiaries assigned to non-PCMHs in the comparison group?

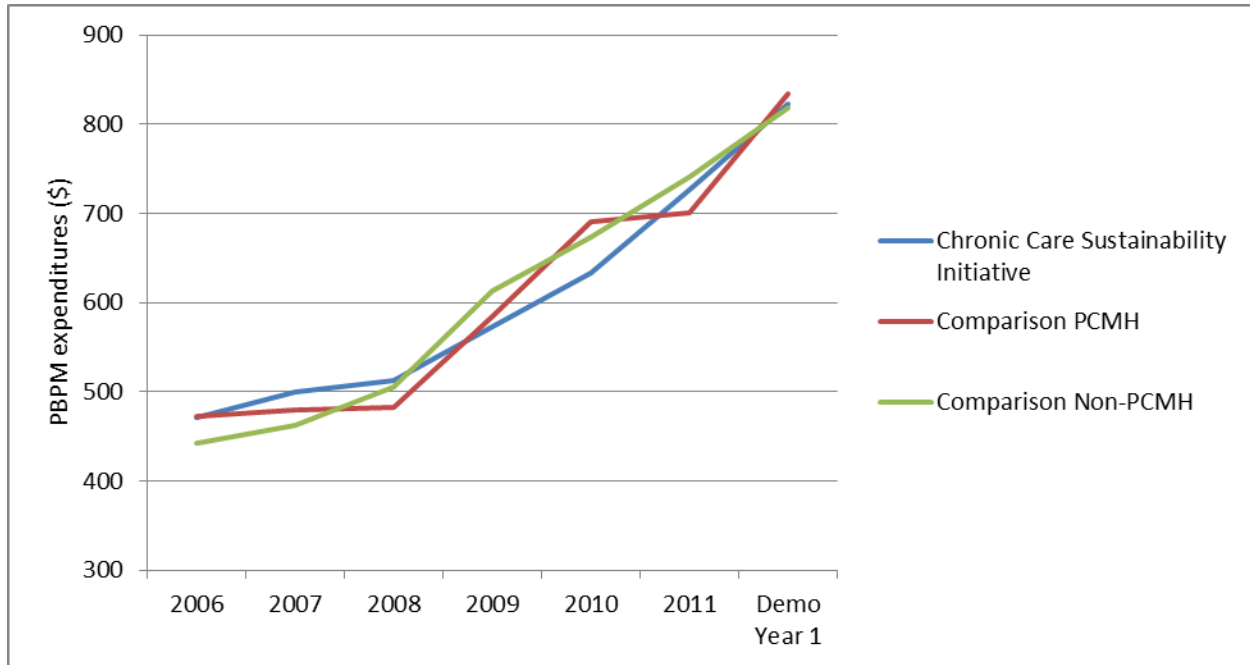
The regression tables presented below will help answer these questions. They contain estimates of the demonstration effects for each quarter, and their standard errors. For expenditures, these are “difference-in-differences” effects. Negative estimates indicate that the growth in expenditures was smaller for beneficiaries assigned to participating practices than for beneficiaries assigned to practices in the comparison group. Conversely, positive expenditure estimates indicate that the growth in Medicare expenditures was larger for beneficiaries assigned to participating practices than for beneficiaries assigned to practices in the comparison group. We also report the average demonstration effect over the entire first year of the MAPCP Demonstration, calculated as a weighted average of the four quarterly estimates (see *Section 1.2.3*).

For the rates (per 1,000 beneficiaries) of all-cause, acute care hospitalizations, ER visits, and 30-day unplanned readmissions, the quarterly demonstration effects represent, for each demonstration quarter, the (regression-adjusted) change in average utilization among beneficiaries assigned to participating practices, relative to beneficiaries assigned to comparison practices. Negative estimates suggest that during particular demonstration quarters the state initiative was able to lower the utilization rate for beneficiaries assigned to participating

practices, relative to beneficiaries assigned to comparison practices. Conversely, positive estimates suggest that the state initiative was associated with increased utilization rates in certain quarters during the demonstration period. As with the expenditure outcomes, we also report the average demonstration effect for utilization rates over the entire first year of the demonstration, calculated as a weighted average of the four quarterly estimates.

Descriptive statistics. Average per beneficiary per month (PBPM) Medicare expenditures and average utilization rates (per 1,000 Medicare FFS beneficiaries) from 2006 through the first year of the MAPCP Demonstration are shown in *Figures 4-2 through 4-7*. Total Medicare expenditures (*Figure 4-2*) increased and showed similar trends for all three groups of beneficiaries. Expenditures for short-stay, acute care hospitals (*Figure 4-3*) increased but seemed more volatile among beneficiaries assigned to comparison PCMHs. Expenditures for ER visits (*Figure 4-4*) increased and were largely similar across the three groups. The same was true for the rate of all-cause, acute care hospitalizations (*Figure 4-5*). The rate of ER visits (*Figure 4-6*) increased but was higher among beneficiaries assigned to CSI practice, relative to beneficiaries assigned to practice in the comparison group. Finally, the rate of 30-day unplanned readmissions (*Figure 4-7*) increased and was similar across all three groups of beneficiaries.

Figure 4-2
Rhode Island: Trend in average total PBPM Medicare expenditures from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to CSI practices, comparison PCMHs and comparison non-PCMHs

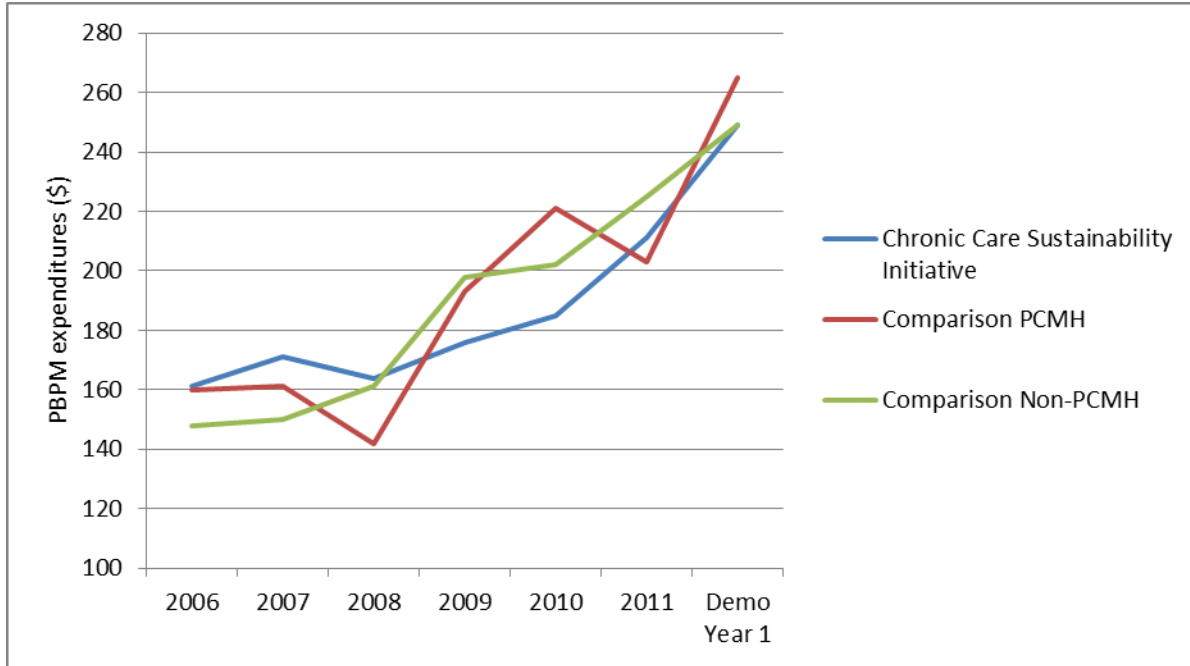


NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; PBPM = per beneficiary per month; CSI = chronic care sustainability initiative.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Rhode Island started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012. These amounts do not include fees paid by Medicare as a result of participation in the Chronic Care Sustainability Initiative.

Figure 4-3

Rhode Island: Trend in average PBPM Medicare expenditures for short-stay, acute-care hospitals from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to CSI practices, comparison PCMHs and comparison non-PCMHs

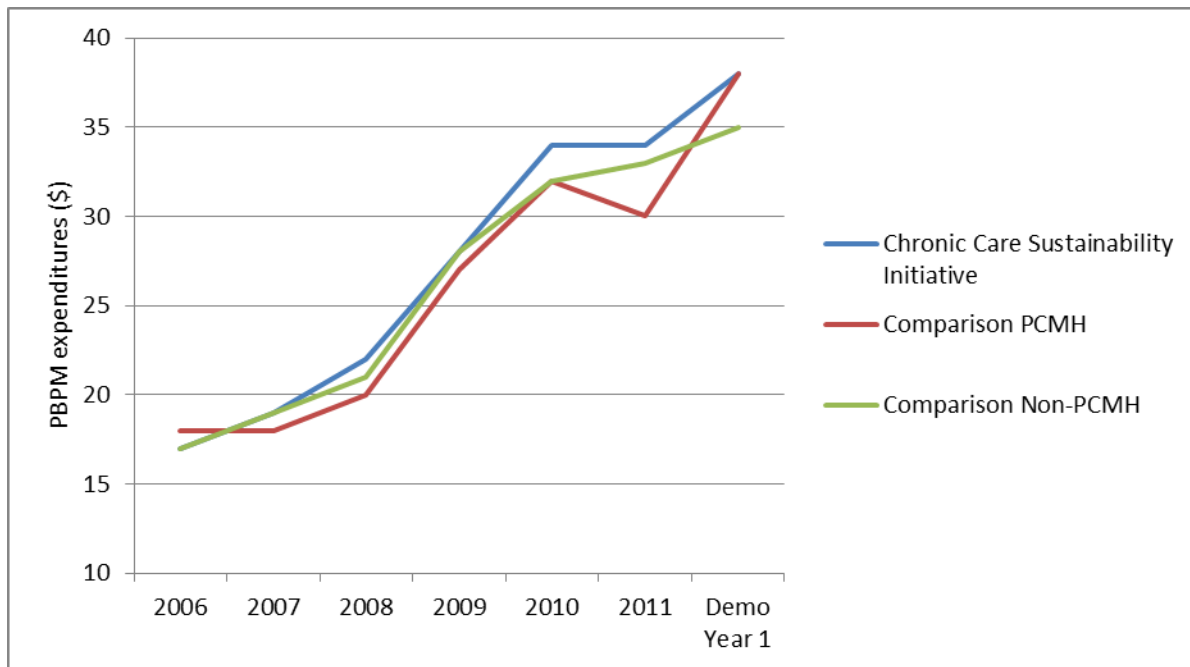


NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; PBPM = per beneficiary per month; CSI = chronic care sustainability initiative.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Rhode Island started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012. These amounts do not include fees paid by Medicare as a result of participation in the Chronic Care Sustainability Initiative.

Figure 4-4

Rhode Island: Trend in average PBPM Medicare expenditures for ER visits and observation stays from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to CSI practices, comparison PCMHs and comparison non-PCMHs¹

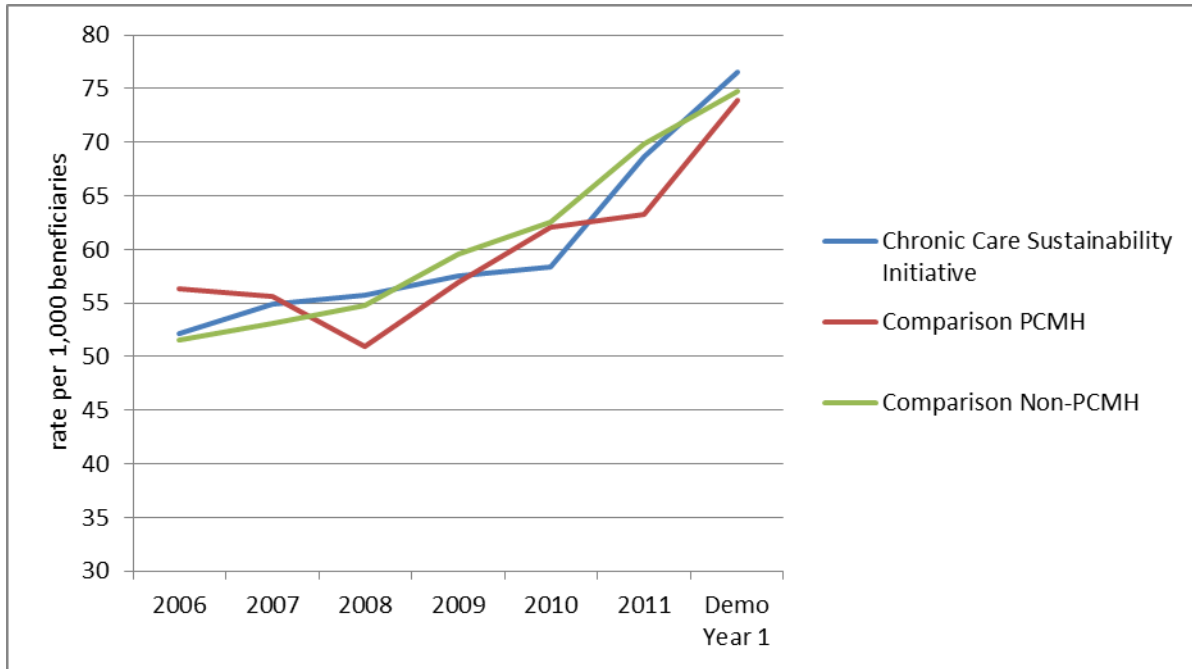


NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; PBPM = per beneficiary per month; ER = emergency room; CSI = chronic care sustainability initiative.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Rhode Island started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012. These amounts do not include fees paid by Medicare as a result of participation in the Chronic Care Sustainability Initiative.

¹ This excludes Medicare expenditures for ER visits that led to a hospitalization.

Figure 4-5
Rhode Island: Trend in average rate of all-cause, acute-care hospitalizations per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to CSI practices, comparison PCMHs and comparison non-PCMHs

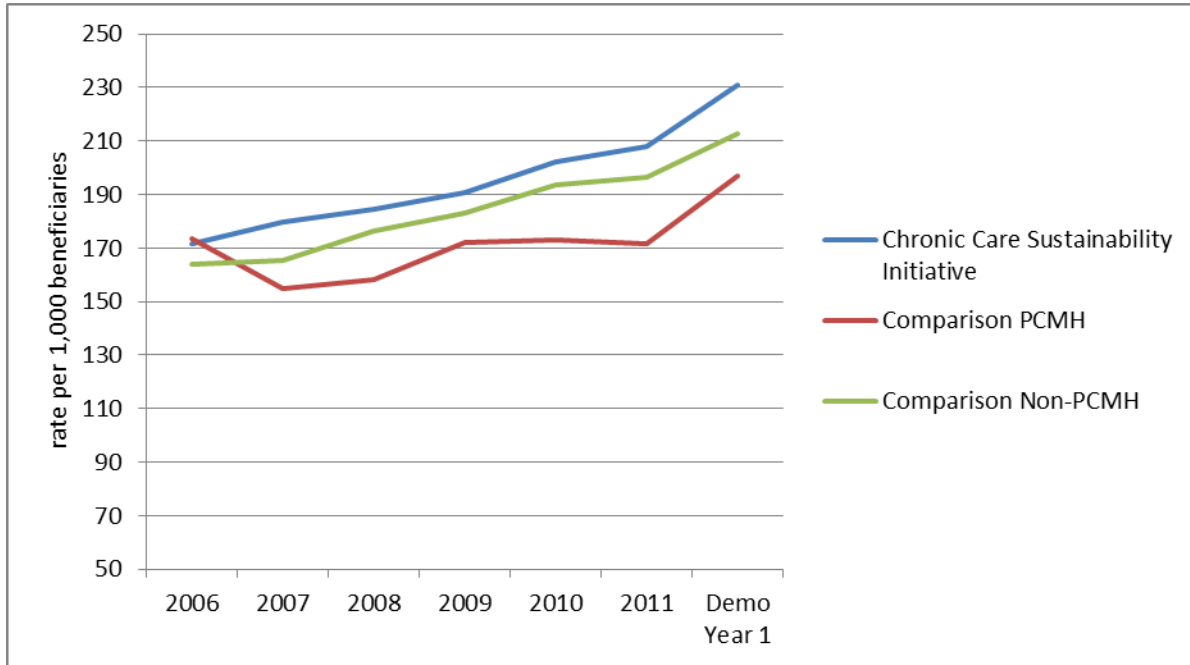


NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CSI = chronic care sustainability initiative.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Rhode Island started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012.

Figure 4-6

Rhode Island: Trend in average rate of ER visits and observation stays per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to CSI practices, comparison PCMHs and comparison non-PCMHs¹

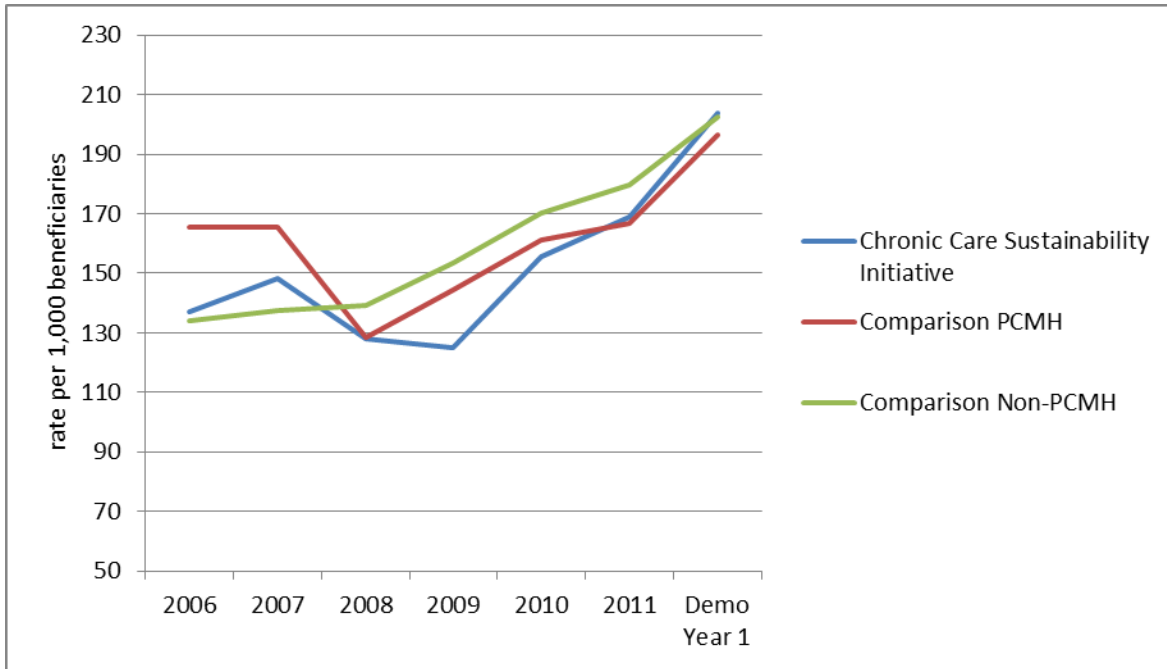


NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; ER = emergency room; CSI = chronic care sustainability initiative.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Rhode Island started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012.

¹ This includes ER visits that led to a hospitalization.

Figure 4-7
Rhode Island: Trend in average rate of unplanned hospital readmissions per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to CSI practices, comparison PCMHs and comparison non-PCMHs



NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CSI = chronic care sustainability initiative.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Rhode Island started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012.

Regression estimates. Quarterly difference-in-differences effects for Medicare expenditures, and their weighted average over the first year of the MAPCP Demonstration, are given in *Table 4-5*. Quarterly demonstration effects for the utilization rates, and their weighted averages, are given in *Table 4-6*.

Table 4-5
Rhode Island: Quarterly difference-in-differences estimates for PBPM Medicare expenditures during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to CSI practices vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Quarter	CSI vs. CG PCMH			CSI vs. CG Non-PCMH		
	Total (\$)	Acute Care (\$)	ER (\$)	Total (\$)	Acute Care (\$)	ER (\$)
Jul–Sep 2011	3.42 (32.09)	0.92 (19.68)	3.52 (3.7)	34.15 (26.88)	19.85 (15.56)	2.99 (2.2)
Oct–Dec 2011	–84.08* (39.04)	–76.70* (29.5)	–4.08 (5.14)	–6.84 (24.51)	–11.11 (13.88)	2.09 (3.19)
Jan–Mar 2012	12.59 (38.81)	11.74 (29.35)	–7.73* (3.77)	26.98 (23.58)	3.76 (16.62)	1.83 (1.78)
Apr–Jun 2012	70.71 (60.53)	38.49 (33.77)	0.72 (3.91)	59.39 (40.34)	29.45 (27.14)	1.21 (2.8)
Average ¹	1.04 (24.96)	–6.11 (16.84)	–1.89 (2.75)	28.58 (17.86)	10.58 (11.75)	2.02 (1.85)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room; CSI = chronic care sustainability initiative.

The table contains the difference-in-differences (D-in-D) estimates for Medicare expenditures during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

¹ This is a weighted average of the four quarterly D-in-D estimates, where the weights are the numbers of eligible beneficiaries who were assigned to a CSI practice in each quarter.

* p<0.10

Table 4-6
Rhode Island: Quarterly demonstration effect estimates for utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to CSI practices vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Quarter	CSI vs. CG PCMH			CSI vs. CG Non-PCMH		
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)
Jul-Sep 2011	7 (4.7)	6 (10.1)	37* (22.0)	7 (4.3)	11 (8.0)	41* (18.8)
Oct-Dec 2011	-8 (6.4)	-8 (13.9)	-24 (36.4)	1 (3.7)	0 (11.9)	17 (21.6)
Jan-Mar 2012	3 (5.6)	-6 (12.9)	28 (37.3)	2 (4.3)	2 (9.2)	14 (29.3)
Apr-Jun 2012	5 (8.6)	10 (15.0)	45 (30.6)	6 (6.1)	2 (10.2)	0 (19.1)
Average ¹	2 (4.3)	1 (9.2)	22 (18.3)	4 (3.7)	4 (8.4)	18 (13.4)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room; CSI = chronic care sustainability initiative.

The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

Due to the non-linearity of the regression models for utilization, the demonstration effect estimates do not have a difference-in-differences interpretation.

¹ This is a weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who are assigned to a CSI practice in each quarter.

* p<0.10

From *Tables 4-5 and 4-6*, we reach the following conclusions about the impact of CSI on Medicare FFS beneficiaries during the first year of the MAPCP Demonstration.

- The changes in **total Medicare expenditures, expenditures for short-stay, acute-care hospitals and expenditures for ER visits** between the baseline period and the first demonstration year were similar for beneficiaries assigned to CSI practices, comparison PCMHs and comparison non-PCMHs.
- The rates of **all-cause, acute-care hospitalizations, ER visits and 30-day unplanned readmissions** during the first demonstration year did not change significantly for beneficiaries assigned to CSI practices, relative to the comparison group (PCMHs and non-PCMH).

Cohort 1 analysis. The quarterly fixed effects model was also estimated using only data from the beneficiaries in “cohort 1.” In Rhode Island, these are beneficiaries who were first assigned to a CSI practice or comparison practice during the first two quarters of the MAPCP Demonstration (July–December 2011); it does not include those beneficiaries who were newly assigned during the third and fourth demonstration quarters. As discussed in more detail in *Section 1.2.3*, the purpose of a cohort 1 analysis was to measure the demonstration effects on stable intervention and comparison groups. In the data used for this report, cohort 1 beneficiaries comprised 88% of the CSI group, 87% of the PCMH comparison group and 88% of the non-PCMH comparison group.

The full set of cohort 1 estimates for Medicare expenditures and utilization rates are given in *Tables 4A-1 and 4A-2* in *Appendix 4A*, respectively. For convenience we repeat here the average demonstration effect estimates for the first demonstration year in *Table 4-7*. On comparing these estimates with the ones for the full sample in *Tables 4-5 and 4-6*, we note the following differences and similarities.

- The cohort 1 estimates show that between the baseline and the first year of the MAPCP Demonstration the growth in **total Medicare payments** was significantly larger for beneficiaries assigned to CSI practices than for beneficiaries assigned to comparison non-PCMHs. This disagrees with the corresponding estimate based on the full sample of beneficiaries (which was not significantly different) suggesting greater success with beneficiaries who entered the demonstration after the first quarter.
- Similar to the estimates based on the full sample of beneficiaries, there was no difference in the rates of growth in **expenditures for short-stay, acute care hospitals and ER visits** between cohort 1 beneficiaries assigned to CSI practices and cohort 1 beneficiaries assigned to comparison practices. In cohort 1, the rates of **all-cause, acute-care hospitalizations, ER visits and 30-day unplanned readmissions** also did not change for beneficiaries assigned to CSI practices, relative to beneficiaries assigned to comparison practices.

In sum, between the baseline and the first year of the MAPCP Demonstration, the growth in total Medicare expenditures was higher for beneficiaries who were first assigned to CSI

practices during the first six months of the MAPCP Demonstration, relative to beneficiaries assigned to comparison non-PCMHs during the same time period. For this cohort, there was no evidence that the remaining five outcome measures were affected during the first demonstration year.

Table 4-7
Rhode Island: Average demonstration effect estimates during the first year of the MAPCP Demonstration for Medicare expenditures and utilization rates, comparing performance for Medicare beneficiaries first assigned in July–December 2011 to CSI practices, comparison PCMHs and non-PCMHs

Outcome	CSI vs. CG PCMH		CSI vs. CG non-PCMH	
	Average Effect	Standard error	Average Effect	Standard error
Total expenditures (\$)	-5.02	(29.27)	44.85*	(17.09)
Acute care expenditures (\$)	-14.57	(20.19)	18.59	(11.96)
ER expenditures (\$)	0.17	(2.52)	2.58	(1.88)
All-cause hospitalizations (per 1,000 beneficiaries)	-1	(4.6)	4	(3.8)
ER visits (per 1,000 beneficiaries)	-3	(10.8)	5	(9.9)
Unplanned readmissions (per 1,000 beneficiaries)	-5	(22.3)	19	(14.0)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room; CSI = chronic care sustainability initiative.

The table contains average demonstration effect estimates and standard errors for the first year of the MAPCP Demonstration, for Medicare expenditures and utilization rates. The average estimate is a weighted average of the four quarterly effects, where the weights are the numbers of demonstration-eligible beneficiaries in each quarter.

For Medicare expenditures, the demonstration effects can be interpreted as difference-in-differences.

* p<0.10

Summary of evaluation findings. Our analyses of Medicare expenditures and utilization rates during the first year of the MAPCP Demonstration provide some preliminary evidence about the effectiveness of the Chronic Care Sustainability Initiative for Medicare FFS beneficiaries. The evidence can be summarized as follows.

- There was no evidence that the CSI reduced the growth in total Medicare payments during the first year of the MAPCP Demonstration. In fact, for cohort 1 beneficiaries there was evidence that total expenditures increased faster among beneficiaries assigned to CSI practices than among beneficiaries assigned to comparison non-PCMHs.

- There was no evidence that the CSI reduced the growth in expenditures for short-stay, acute-care hospitals or to ERs during the first demonstration year.
- There was no evidence that CSI reduced the rates of all-cause, acute care hospitalizations, ER visits or 30-day unplanned readmissions during the first year of the MAPCP Demonstration year.

4.6.3 Medicare Budget Neutrality in Year 1 of the Chronic Care Sustainability Initiative

In this section, we present estimates of budget neutrality in the first year of the MAPCP Demonstration using the methodology described in *Section 1.2.3*. *Table 4-8* reports the estimated gross and net savings for Rhode Island during that year, relative to the PCMH comparison group. Results are presented separately by the four quarters and then summed to produce an annual estimate of savings and fees as a whole.

Total gross savings to Medicare was $-\$87,363$, with a 90% confidence interval ranging from $-\$3.6$ million to $+\$3.4$ million. During the first year of the demonstration, Rhode Island paid two levels of monthly fees depending on a practice's tenure in the CSI. The five practices in the original pilot group received $\$5.50$ per eligible month. All other practices received $\$4.16$, which increased to $\$5.50$ in April 2012. Total fees paid out based on all eligible quarters were $\$441,075$. Medicare's net savings in Rhode Island during the first year of the MAPCP Demonstration are estimated to be $-\$528,438$, or $-\$75.39$ per full-year eligible beneficiary. These findings indicate that CSI in Rhode Island did not generate cost savings in the first year of the MAPCP Demonstration.

Table 4-8
Estimates of gross savings, fees paid, & net savings, Year 1 of the MAPCP Demonstration, Rhode Island

Budget Neutrality Parameter	MAPCP Demonstration Quarter (Year 1)				Year 1 Total	90 % Confidence Interval	
	Jul–Sep 2011	Oct–Dec 2011	Jan–Mar 2012	Apr–Jun 2012		Lower	Upper
Difference in quarterly expenditure per beneficiary	\$10.27	–\$252.23**	\$37.78	\$212.12	\$7.94	—	—
Eligible beneficiary quarters	6990	6945	7022	7081	28038	—	—
Total gross savings	–\$71,787	\$1,751,737	–\$265,291	–\$1,502,022	–\$87,363	–\$3,624,831	\$3,449,885
Total MAPCP Demonstration Fees	\$106,598	\$105,594	\$106,578	\$122,305	\$441,075	—	—
Net Savings	–\$178,385	\$1,646,143	–\$371,869	–\$1,624,327	–\$528,438	—	—
Average expenditures (comparison group)	\$2,325	\$2,715	\$2,416	\$2,319	\$9,775	—	—
Total expenditures (comparison group)	\$16,251,750	\$18,855,675	\$16,965,152	\$16,420,839	\$68,493,416	—	—

NOTES:

*p<.10; **p<.05; ***p<.01

Difference in quarterly expenditures per beneficiary: Estimated difference in average Medicare Part A and B expenditures between beneficiaries assigned to CSI practices and those assigned to PCMHs in the comparison group, excluding beneficiaries with less than 3 months of demonstration eligibility.

Eligible beneficiary quarters: Sum of CSI beneficiaries' fractions of quarters eligible to participate in the MAPCP Demonstration, excluding beneficiaries with less than 3 months of eligibility.

Total gross savings: Combined savings effect per beneficiary times the number of eligible beneficiary quarters. Savings are the negative of the expenditure difference. Positive savings indicates that the intervention group's expenditures increased less than the comparison group's expenditures. Negative savings indicate that the intervention group's expenditures increased more than the PCMH comparison group's expenditures.

Total MAPCP Demonstration fees: Sum of MAPCP Demonstration fees, excluding fees paid on behalf of beneficiaries with less than 3 months of eligibility.

Net savings: Gross savings minus total MAPCP Demonstration fees.

Average expenditures (PCMH comparison group): Medicare expenditures per beneficiary in the comparison group.

Total expenditures (PCMH comparison group): Average expenditures per beneficiary times the number of CSI beneficiaries' eligible quarters.

SOURCE: Medicare Part A and B claims January 1, 2006–June 30, 2012.

4.7 Special Populations

4.7.1 Targeting of Special Populations and Tailored Interventions During Year 1

CSI does not target any subpopulation for special treatment. The initiative includes quality measures for specific conditions, but CSI is aimed at comprehensive practice transformation rather than modifying treatment for a specific subset of patients. As noted earlier, many practices use nurse care managers to coordinate care for complex, high-risk patients with multiple comorbidities. Although not explicitly identified as a special population, meeting the needs of people with behavioral health problems was noted as a challenge for CSI. Some providers feel that they are making progress for patients with behavioral health problems by integrating behavioral health services into their practices. However, the implementation of integrated behavioral health is not widespread among CSI practices.

There has not been significant attention given to unique needs of Medicaid beneficiaries or dual eligible beneficiaries. Two of the payers in Rhode Island have Medicaid managed care plans; one covers the Medicaid population exclusively. No CSI practice indicated implementing any interventions to specifically help these beneficiaries, and clinicians repeatedly indicated that they believe the CSI interventions work best when implemented across the entire patient population rather than for specific payers. However, dual eligible beneficiaries are disproportionately likely to be among the complex, high-risk patients that are a focus of nurse care manager care coordination efforts.

4.7.2 Impacts on Special Populations

Quantitative data assessing the impacts of the MAPCP Demonstration on special populations are not yet available. In future reports, we plan to report our findings on the impacts of the demonstration on special populations as defined by each state initiative or that are of policy interest, such as Medicare and Medicaid dual eligible beneficiaries and racial minorities.

4.8 Discussion

CSI was launched in October 2008 with a goal of improving health outcomes by transforming primary care, with a particular focus on adults with chronic illness. With the addition of FFS Medicare in July 2011, virtually all payers in Rhode Island participate in CSI. Sixteen practices participate, making it the smallest of the MAPCP Demonstration states.

CSI enjoys strong support among state officials, payers, and participating practices. The leadership of the state's health insurance commissioner is widely viewed as critical to continuing support for CSI. Rhode Island's Affordability Standards for commercial health insurers also provide an important base of support for CSI, particularly the Primary Care Spend Standard, which requires insurers to increase the percentage of their total health care spending on primary care by one point per calendar year from 2010 through 2014, and the PCMH Standard, which requires insurers to support CSI.

Beacon grant funds have been leveraged to support learning collaboratives, technical assistance for practice transformation, and fielding of a PCMH-CAHPS survey. With the end of

the Beacon grant in 2013, CSI was planning for new revenue sources to support these functions. We plan to track the impact of the loss of these Beacon grant funds.

CSI had been operating for nearly three years by the time Medicare joined and minimal changes were required to accommodate Medicare. Medicare's entry is viewed favorably, both as a validation of CSI and as a source of additional revenue to support practice transformation. However, even with the additional funds from Medicare, some stakeholders, including a number of practices, do not believe the payments to practices are adequate to fund practice transformation fully. Some state officials believe payments should be adjusted for patient complexity and practices should receive higher payments for Medicare patients.

In 2012, the five practices that had been in CSI since 2008 became eligible to receive performance-based payments. Although they did not meet the utilization performance target, CSI decided not to reduce their payment because many stakeholders felt the targets were unrealistic. CSI has adjusted the performance targets for subsequent years. Performance-based payments will be phased in for other practices over time. We will continue to follow implementation of CSI's performance-based payment system and whether practices can achieve these new goals.

Practices that participate in CSI are required to have a practice-based nurse care manager, whose salary is supported by the payments to practices. There is consensus among state officials, payers, and practices that nurse care managers are the most important component of CSI and the linchpin of practice transformation and improvements in clinical care.

CSI is expected to change utilization and expenditure patterns through these practice-based nurse care managers and requirements that aim to improve accessibility and care coordination. Despite structural changes that have been made within the participating practices and the health system that surrounds these practices to improve access to and continuity of care, these efforts have not yet translated into lower rates of growth in Medicare expenditures or acute care utilization. Among the full set of Medicare beneficiaries, we observed an increasing, rather than a decreasing, trend in expenditures and acute utilization during Year 1. This increasing trend could reflect the desire on the part of the participating practices to address unmet needs at the start of Medicare's participation, thus increasing the cost of care. During the first year of the MAPCP Demonstration, there were no significant changes in expenditures for Medicare beneficiaries in CSI compared to those in PCMH and non-PCMH comparison practices. However, we observed an increase in total Medicare expenditures when making comparisons in performance against non-participating PCMHs for Medicare beneficiaries who joined the CSI initiative in the first quarter of Medicare's participation. The differing findings for the full set of Medicare beneficiaries and those who joined early could reflect better care management of Medicare beneficiaries as the Medicare component of CSI matured during the first year. The absence of expenditure reduction in Year 1 puts increased pressure on CSI to generate savings in future years. Although the Rhode Island's MAPCP Demonstration application projected a 15% reduction in ER utilization in pilot practices and an 8% reduction in expansion practices over the course of the MAPCP Demonstration, during the first year there was no evidence of reductions. We will continue to track whether data that document savings and other impacts emerge over the coming year.

The potential to reduce costs and utilization, manage patient care, and implement practice improvements has been limited by ongoing communication and data-sharing challenges between practices and the local hospital. The absence of hospitals at the stakeholder table also affects CSI's ability to impact inpatient utilization. Although all CSI practices participate in Rhode Island's HIE, its usefulness is limited because patients must opt-in and only about 25% do so. Implementation of Rhode Island's APCD, which was expected to be the source of patient and practice data, has been slower than expected. In the interim, Beacon grant funds have been used to build a multi-payer data warehouse and web portal that is used to generate clinical quality and utilization performance reports for practices. However, the extent to which practices are making use of these data is not clear.

Additional areas where it appears the PCMH model has been less successfully implemented include patient engagement, integration of behavioral health services, and referral to community resources. During the coming year we will explore the continued development of CSI along these dimensions, including possible implementation of a CHT pilot. In addition, we will monitor several implementation challenges that were identified during the first site visit.

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CHAPTER 5 VERMONT

In this chapter, we present qualitative and quantitative findings related to the implementation of the Blueprint for Health, Vermont's preexisting multi-payer initiative, which added Medicare as a payer to implement the MAPCP Demonstration. We report qualitative findings from our first of three annual site visits to Vermont, as well as quantitative findings using Medicare fee-for-service (FFS) claims data to report characteristics of beneficiaries and participating practices in the state initiative, descriptive statistics and estimates of the demonstration effects for Medicare payment and utilization outcomes, and estimates of budget neutrality.

For the first round of site visit interviews, which occurred from October 24 through October 26, 2012, three teams traveled across the state covering a large geographic region from St. Johnsbury in the Northeast, to Burlington in the Northwest, and Bennington in the southern part of the state. The focus of the site visits was on early implementation experiences and practice transformation activities that were necessary to join the MAPCP Demonstration. During the site visit, we interviewed providers, nurses, and administrators from participating patient-centered medical homes (PCMHs) and collaborating organizations, including staff from community health teams (CHTs) and CHT extenders, such as Support and Services at Home (SASH) program staff, to learn about the effects of the state policies on their practice transformation activities and the quality and effectiveness of the health care they delivered before and after Medicare's entrance. We met with key state officials involved with the implementation of the Blueprint for Health initiative to learn how the payment model and other efforts to support practice transformation, such as learning collaboratives, were chosen and implemented and how specific performance goals were established. We also met with payers to hear their experiences with implementation and whether the payments to practices were effective in terms of producing desired outcomes or whether modifications were warranted. Last, we met with patient advocates and provider organizations to learn if they had observed improved beneficiary experience with care and any changes to the way care was delivered.

This chapter is organized by major evaluation domains. *Section 5.1* reports state implementation activities, as well as baseline demographic and health status characteristics of Medicare beneficiaries and characteristics of practices participating in the Blueprint for Health. *Section 5.2* reports practice transformation activities. The subsequent sections of this chapter report our findings for the five evaluation domains related to outcomes: quality of care, patient safety, and health outcomes (*Section 5.3*); access to care and coordination of care (*Section 5.4*); beneficiary experience with care (*Section 5.5*); effectiveness as measured through health care utilization, Medicare expenditures, and budget neutrality (*Section 5.6*); and special populations (*Section 5.7*). We conclude this chapter with a discussion of early findings (*Section 5.8*).

5.1 State Implementation

In this section, we present findings related to the implementation of the Blueprint for Health and changes made by the state, practices, and payers when Medicare joined its ongoing multi-payer initiative. We focus on providing information related to a subset of the state

implementation evaluation questions that lend themselves to being answered in the early part of the MAPCP Demonstration. Specifically, we address the following:

- What are the features of the state initiative?
- What changes did practices and payers make in order to take part in the Blueprint for Health and meet the participation requirements? What was involved in making these changes? What challenges did they face?
- What kinds of structural and organizational changes did the state, practices, and payers make to accommodate Medicare's participation in the Blueprint for Health and to better serve the needs of Medicare beneficiaries? How did administrative burdens and resource allocations change as a result of Medicare's participation?
- Does Medicare's participation in the Blueprint for Health have any spillover effects on the state's Medicaid program or private payers?
- What early lessons were learned?

The state profile in *Section 5.1.1* of this report draws on quarterly reports submitted to CMS by Blueprint for Health project staff, monthly state/CMS calls, as well as other sources including news items and state and federal websites, and the site visit that was conducted in October 2012. *Section 5.1.2* presents a logic model that reflects our understanding of the link between specific elements of the Blueprint for Health and expected changes in outcomes. *Section 5.1.3* presents key findings gathered from the site visit and describes the implementation experience of state officials, payers, and providers. We conclude the State Implementation section with lessons learned in *Section 5.1.4*.

5.1.1 Vermont State Profile as of October 2012 Evaluation Site Visit

The Vermont Blueprint for Health was launched in 2003 by Governor Jim Douglas to provide better management of chronic illness and to control costs. The initiative was codified in statute in 2006 as part the state's health reform legislation. Since that time, the state legislature has expanded the Blueprint's reach. In 2007, the legislature directed the Vermont Blueprint for Health state office to launch a pilot of PCMHs supported by CHTs in three regions of the state. In 2010, the legislature directed the Blueprint office to expand to include at least two PCMHs in each Health Service Area (HSA) by July 2011, and to include any practice in the state that wanted to participate by October 2013. Primary care practices throughout the state are steadily transforming to become National Committee for Quality Assurance (NCQA)-recognized PCMHs, and CHTs are in place to support them in all 14 of the state's HSAs. CHT extender staff members have been added in some HSAs to focus solely on care for the elderly in the community through the Blueprint's SASH program.

In 2008, all major payers, both commercial and public, were required to participate financially in the Blueprint. The state made payments to practices for Medicare beneficiaries, in addition to Medicaid beneficiaries, until Medicare joined the Blueprint for Health initiative as a payer in July 2011. The Blueprint office continues to oversee payer participation.

State environment. Vermont has been on a path toward universal coverage since sweeping health reform legislation, Act 191, was enacted in 2006. As a preparatory step, the state was granted a Section 1115 Medicaid waiver in 2005, making the state Medicaid agency a managed care organization, allowing its Medicaid program to cover residents up to 300% of the poverty level while also imposing sliding-scale premiums on beneficiaries. Vermont also received a waiver for its long-term care population. In 2011, the legislature directed state agencies to move toward a “universal and unified health system,” using the health benefit exchange authorized by the Affordable Care Act as a base. This legislation created a new board, the Green Mountain Care Board, charged with expanding health care payment and delivery systems reforms, building on the Blueprint. Thus, the Vermont Blueprint for Health serves as the primary care foundation of this larger goal to transform the state’s system of health coverage.

The three major commercial insurers in the state are Blue Cross Blue Shield (BCBS) of Vermont, CIGNA, and the Mohawk Valley Plan Vermont. Health care providers operate primarily in a FFS environment, and Medicare Advantage has very low penetration in Vermont, covering only 7,135 lives in 2012.

Vermont has a number of programs that may influence the health outcomes for participants in the Blueprint for Health. Building on the PCMH and CHT infrastructure, the initiatives include the following:

- Vermont has submitted a proposal to CMS for a Demonstration to Integrate Care for Dual Eligibles. The state plans to implement a capitated financial alignment model using Vermont’s current public managed care entity, the Department of Vermont Health Access (DVHA). DVHA will contract with integrated care providers to integrate physical health, mental health, substance abuse, and developmental services, and long-term services and supports for those who are dually eligible for Medicare and Medicaid. The state’s design was still under review at the time of this report.
- The Vermont Chronic Care Initiative (VCCI) is providing targeted case management to particularly high-risk Medicaid beneficiaries and extending the work of the CHTs.
- The SASH program makes CHT extender staff for care coordination available to all Medicare beneficiaries within its catchment areas through creation of SASH panels in subsidized housing complexes. The SASH program was officially rolled out in July 2011 at one housing site. In October 2011, the program was expanded to other affordable housing providers throughout Vermont. Every quarter, additional sites were rolled out. There were 26½ panels (100 people/panel) enrolled in the SASH program as of December 2012, which included about 2,000 residents of affordable housing units and 150 community residents living within the geographic area of the housing units. Thus, there is additional capacity within the established panels. The original contract with the state was to enroll 61 panels; however, due to funding constraints, further rollout of panels was halted in the fall of 2012. The per member per month (PMPM) calculated for Medicare’s portion of the SASH budget was estimated based on the total number of Medicare FFS beneficiaries in Vermont instead of the anticipated number of beneficiaries that would be attributed to participating practices, a significantly smaller number. As a result, the SASH

program received less funds from Medicare than anticipated, causing operations to be underfunded by \$40–50,000 each month. This was remedied in early 2013, retroactive to July 1, 2012.

- In recognition of the need to better integrate behavioral health services for Medicaid beneficiaries, Vermont has proposed a Section 2703 Medicaid Health Home program targeting Medicaid beneficiaries with a substance abuse disorder. Its approach will provide a framework for integrating Medication Assisted Treatment (MAT) services for substance abuse issues and co-occurring mental health disorders into the Blueprint for Health through a managed approach to care. If approved, the initiative will be implemented in two stages through two State Plan Amendments: (1) in the counties covering the western region of the state beginning January 1, 2013; and (2) in the remaining regions of the state beginning July 1, 2013.
- Vermont received a Model Testing award under the State Innovation Model program to test payment and delivery models. In the state’s application, they mention the Blueprint by saying one of their goals is to “increase both organizational coordination and financial alignment between Blueprint advanced primary care practices and specialty care, including mental health and substance abuse services, long term services and supports, and care for Vermonters living with chronic conditions.”

In addition to these programs, Accountable Care Organizations (ACOs) are being formed in the state. The Accountable Care Coalition of the Green Mountains, LLC, an ACO, launched on July 1, 2012. This ACO consists of 100 independent physicians statewide and will overlap considerably with the participating Blueprint practices. Another ACO (OneCare Vermont Accountable Care Organization, LLC) that incorporates all but one of the state’s 14 community hospitals is preparing to launch in 2013; this ACO’s participation in the Medicare Shared Savings Program was announced by CMS on January 10, 2013.

Demonstration scope. The Blueprint has expanded steadily throughout the state. The first pilot area, the St. Johnsbury HSA, launched in July 2008, followed by the Burlington HSA in October 2008 and the Barre HSA in January 2010. By July 2011, when Medicare joined the Blueprint under the MAPCP Demonstration, there were at least two PCMHs in each of the 14 HSAs. By the end of the first year of the MAPCP Demonstration (June 30, 2012), 86 practices were participating in the Blueprint for Health, with 430 providers (*Table 5-1*). The cumulative number of Medicare FFS beneficiaries that had participated in the first year of the demonstration for at least three months was 48,848. Each of the 14 HSAs has an operational CHT.

Table 5-1
Number of practices, providers, and Medicare fee-for-service beneficiaries in the Vermont
Blueprint for Health

Participating Entities	Number as of June 30, 2012
Blueprint for Health practices ¹	86
Participating providers ¹	430
Medicare fee-for-service (FFS) beneficiaries ²	48,848

NOTE: Blueprint for Health practices include only those practices with attributed Medicare FFS beneficiaries, and participating providers are the providers that are associated with those practices. The numbers of Medicare FFS beneficiaries are cumulative, representing the number of Medicare FFS beneficiaries that had ever been assigned to participating Blueprint for Health practices and participated in the demonstration for at least three months.

SOURCES: ¹ARC MAPCP Demonstration Provider File; ²ARC Beneficiary Assignment File (SAS Output tab52c.xls 07/30/2014). (See chapter 1 for more detail about these files).

The state’s goal is to have 220 NCQA Physician Practice Connection Patient-Centered Medical Home (PPC[®] PCMH[™]) recognized practices and the state’s entire population, approximately 637,130 people, in PCMH practices by October 1, 2013, although participation by individual practices remains voluntary. At the end of year 1 (June 30, 2012), the number of all-payer participants enrolled was 190,167. Practice recruitment is being led at the local level by state-funded Blueprint project managers. As the program expanded in size, the state elected to increase the funding for project management staff from halftime to fulltime, reflected in the HSA grants for the grant cycle that started on October 1, 2012.

Participation by commercial and public payers is comprehensive. Medicaid, the state employee’s health insurance plan, Catamount Health (the state-subsidized insurance plan for the uninsured), and all major commercial plans (BCBS of Vermont, CIGNA, and Mohawk Valley Plan) are required to participate. Participation by self-insured employers is voluntary; some major employers in the state do not participate.

Table 5-2 displays characteristics of practices participating in the Blueprint as of June 30, 2012. There were 86 practices participating at this time with an average of five providers per practice. The full range of practice types was present in the Blueprint, including office-based practices (47%), federally qualified health centers (FQHCs) (35%), critical access hospitals (14%), and rural health clinics (5%). Nearly half of the practices were located in micropolitan areas, while the remainder was relatively evenly divided between metropolitan and rural areas.

Table 5-2
Characteristics of practices participating in the Vermont Blueprint for Health as of June 30, 2012

Characteristic	Statistic
Number of practices	86
Number of providers	430
Average number of providers per practice	5
Practice type (%)	
Office based	47
Federally qualified health center	35
Critical access hospital	14
Rural health clinic	5
Practice location type (%)	
Metropolitan	28
Micropolitan	46
Rural	27

SOURCES: ARC Q4 MAPCP Demonstration Provider File and SK&A office-based physician data file. (See chapter 1 for more detail about these files).

In *Table 5-3*, we report demographic and health status characteristics of Medicare FFS beneficiaries who were assigned to participating Blueprint practices during the first 12 months of the MAPCP Demonstration (July 1, 2011 to June 30, 2012). Beneficiaries with less than three months of eligibility for the demonstration are not included in our evaluation or this analysis. Of the beneficiaries who were assigned to Blueprint practices during the first year of the MAPCP Demonstration, 19% were under the age of 65. The majority of beneficiaries (44%) were between the ages of 65 and 75 years old, 27% were between the ages of 76 and 85, and 11% were older than 85 with a mean beneficiary age of 71 years. Beneficiaries were mostly White (98%) and female (57%). Twenty-seven percent of beneficiaries were categorized as urban-dwelling, living in a Metropolitan or Micropolitan Statistical Area defined by the Office of Management and Budget (OMB). Twenty-eight percent were dually eligible for Medicare and Medicaid, and 26% were originally eligible for Medicare due to a disability. A very small percentage of beneficiaries were eligible for Medicare because of the presence of end-stage renal disease (0.41%). Less than 1% of beneficiaries resided in a nursing home during the year prior to their assignment to a Blueprint practice.

Table 5-3

Demographic and health status characteristics of Medicare fee-for-service beneficiaries participating in the Vermont Blueprint for Health from July 1, 2011 through June 30, 2012

Demographic and health status characteristics	Percentage or mean
Total beneficiaries	48,848
Demographic characteristics	
Age < 65 (%)	19
Ages 65–75 (%)	44
Ages 76–85 (%)	27
Age > 85 (%)	11
Mean age	71
White (%)	98
Urban place of residence (%)	28
Female (%)	57
Medicaid (%)	28
Disabled (%)	26
End-stage renal disease (%)	0.4
Institutionalized (%)	0.1
Health status	
<i>Mean Hierarchical Condition Category (HCC) score groups</i>	0.97
Low risk (< 0.48) (%)	28
Medium risk (0.48–1.25) (%)	50
High risk (> 1.25) (%)	23
<i>Mean Charlson Index score</i>	0.73
Low Charlson Index score (= 0) (%)	64
Medium Charlson Index score (≤ 1) (%)	18
High Charlson Index score (> 1) (%)	17
Chronic conditions (%)	
Heart failure	4
Coronary artery disease	10
Other respiratory disease	10
Diabetes without complications	16
Diabetes with complications	3
Essential hypertension	35
Valve disorders	2

(continued)

Table 5-3 (continued)
Demographic and health status characteristics of Medicare fee-for-service beneficiaries participating in the Vermont Blueprint for Health from July 1, 2011 through June 30, 2012

Demographic and health status characteristics	Percentage or mean
Chronic conditions (%) (continued)	
Cardiomyopathy	1
Acute and chronic renal disease	5
Renal failure	2
Peripheral vascular disease	1
Lipid metabolism disorders	21
Cardiac dysrhythmias and conduction disorders	10
Dementias	1
Strokes	1
Chest pain	4
Urinary tract infection	3
Anemia	5
Malaise and fatigue (including chronic fatigue syndrome)	3
Dizziness, syncope, and convulsions	5
Disorders of joint	7
Hypothyroidism	5

NOTE: Percentages and means are weighted by the fraction of the year that a beneficiary met MAPCP Demonstration eligibility criteria. Demographic and health status characteristics are calculated using the Medicare Enrollment Data Base (EDB) and claims data for the one-year period prior to a Medicare beneficiary first being attributed to a PCMH after the start of the MAPCP Demonstration. Urban place of residence is defined as those beneficiaries living in Metropolitan or Micropolitan Statistical Areas defined by the Office of Management and Budget (OMB).

SOURCE: SAS Output tab52c.xls 07/30/2014.

Using three different measures—HCC score, Charlson Comorbidity Index, and diagnosis of 22 chronic conditions—we describe beneficiaries’ health status during the year prior to their assignment to a Blueprint practice. Beneficiaries had a mean HCC score of 0.97, meaning that Medicare beneficiaries assigned to a Blueprint practice were predicted to be 3% healthier in the subsequent year than an average Medicare FFS beneficiary. In addition, beneficiaries had an average Charlson Comorbidity Index score of 0.73, with almost three-quarters of the beneficiaries having a low (zero) score, indicating that they did not receive medical care for any of the 18 clinical conditions contained within the index in the year prior to their first assignment to a participating Blueprint for Health practice.

The most common chronic conditions diagnosed among the Medicare FFS beneficiaries were hypertension (35%), lipid metabolism disorders (21%), diabetes without complications

(16%), coronary artery disease (10%), and cardiac dysrhythmias and conduction disorders (10%). Fewer than 10% of beneficiaries were treated for any of the other conditions.

Practice expectations. Practices that joined the Blueprint initiative before January 1, 2012, were required to reach at least Level 1 PCMH recognition based on 2008 NCQA PPC[®] PCMH[™] standards. Practices becoming recognized as PCMHs after January 1, 2012, must reach at least Level 1 PCMH recognition based on 2011 NCQA PPC[®] PCMH[™] standards. NCQA PPC[®] PCMH[™] recognition is valid for three years; the University of Vermont's Vermont Child Health Improvement Program (VCHIP) assesses practices every three years, scoring them in preparation for submission of their information to NCQA. In addition, Vermont requires practices to meet the following criteria:

- Designate a quality improvement team that meets at least monthly and works with the state quality improvement program, EQuIP (Expansion and Quality Improvement Program).
- Have an agreement with their local CHT and integrate the CHT services into their practice.
- Enter into an agreement with Vermont Information Technology Leaders (VITL), which provides assistance to practices that are adopting Electronic Health Records (EHR) systems, and demonstrate progress toward being able to communicate with the DocSite clinical registry.

Support to practices. Private and public payers pay PCMHs on a scale ranging from \$1.20 to \$2.49 (for 2008 recognition) or \$1.36 to \$2.49 (for 2011 recognition) per member per month (PMPM) depending on their NCQA PPC[®] PCMH[™] score. Between July 1, 2011 and June 30, 2012 demonstration practices, CHTs, and the SASH program received a total of \$3,148,625 in payments from Medicare for beneficiaries assigned to their practices during the first year of the demonstration.

Each CHT receives \$350,000 annually to support a general patient population of 20,000, which covers approximately five full-time positions in multiple disciplines within the core CHT. With one exception, each payer contributes 22% of the total CHT budget.³⁷ The composition and skills of the CHT staff are decided locally, based upon local needs. CHTs coordinate care, services, referrals, transitions, and social services; provide self-management support and counseling to individuals with chronic illness; and incorporate extenders, including the SASH program staff and the VCCI care coordinators. The Medicare program also makes a \$3.02 PMPM payment to support the SASH program. As noted earlier, the Blueprint for Health has requested additional funding from CMS for the SASH program which was approved in early 2013, retroactive to July 1, 2012.

The Vermont Blueprint has invested significantly in practice transformation assistance, funding EQuIP to provide practice facilitation. EQuIP staff teach the primary care practices

³⁷ Mohawk Valley Plan, a small health plan, contributes only 11%.

change theory; assist with practice team development, NCQA application preparation, and rapid change cycle projects focused on patient-centered care; and coordinate with CHTs and other practice supports. Health Dialog trained practice facilitators and CHT and practice staff in shared decision making in 2012 and are providing staff with access to decision aids to support implementation of shared decision making. In addition, the Blueprint registry vendor (Covisint) provides on-site help connecting practices with the DocSite registry and on-site training after the information technology (IT) work is complete so that practices are able to generate their own reports.

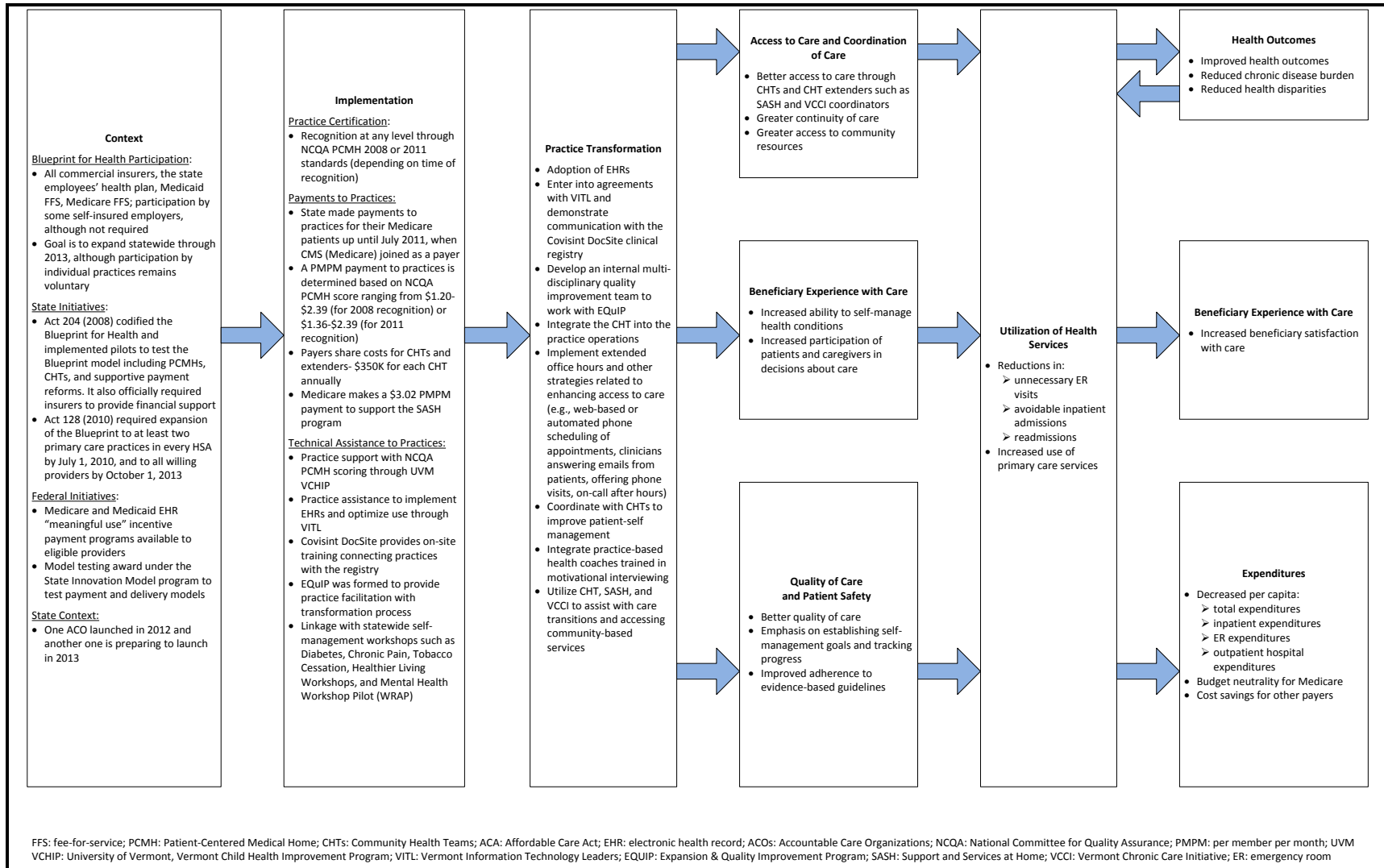
CHTs began working with practices, particularly small practices, six months prior to NCQA scoring to assist them in meeting the more stringent 2011 NCQA PPC[®] PCMH[™] requirements. A Memorandum of Understanding that would allow for the “frontloading” of CHT payments to facilitate this work has been accepted by commercial payers and Vermont Medicaid, but not Medicare.

The Blueprint launched a statewide outreach and education campaign to providers to address medication assisted therapy (MAT) for opioid dependence. Although this initiative initially focuses on Medicaid enrollees with opiate addictions, it creates a ‘hub and spoke’ framework for integrating treatment services for other substance abuse issues and co-occurring mental health disorders into the PCMH through a managed approach to care. Funding for this initiative is dependent on approval of Vermont’s Section 2703 Health Home State Plan Amendment.

5.1.2 Logic Model

Figure 5-1 portrays a logic model of Vermont’s Blueprint for Health initiative. The first column describes the context for the initiative, including the scope, other state and federal initiatives, and the key features of participating in the Blueprint. The next two columns describe the implementation activities, which incorporates a number of activities to promote transformation of practices to PCMHs and the establishment of CHTs. The Blueprint employs strategies to: (1) improve access to and coordination of care through the use of CHTs; (2) increase quality of care and patient safety by establishing self-management goals and tracking progress; and (3) improve experience with care by enhancing beneficiaries’ knowledge of their health conditions through self-management education and communication with their care providers and by increasing engagement in decision making about their care. Successful interventions should promote more efficient utilization patterns, including increased use of primary care services and reductions in ER visits, avoidable inpatient admissions, and readmissions. These changes in utilization patterns are expected to produce improved health outcomes (e.g., lower HbA1c levels for patients with diabetes), greater beneficiary satisfaction with care, and decreased expenditures consistent with reductions in utilization, resulting in budget neutrality for the Medicare program and cost savings for other payers involved in the initiative.

**Figure 5-1
Logic Model for the Vermont Blueprint for Health**



5.1.3 Implementation

This section uses primary data gathered from the site visit to Vermont in October 2012 and presents key findings from the implementation experience of state officials, payers, and providers to address the evaluation questions described in *Section 5.1*.

External Factors Affecting Implementation

Vermont's bipartisan collaboration has provided the momentum to reform health care in the state in pursuit of its goals of controlling costs, ensuring access for all Vermonters, and increasing equity in health care financing. The state passed Act 48 in 2011, which will move the state toward a publicly financed "universal and unified health system." State officials believe that the goals under these reforms, including using primary care to improve access and connecting providers using health IT, are grounded in the current work of the Blueprint for Health. The wave of health reform occurring in the state includes projects that are occurring in the private sector as well, including increased accountable care activity.

The state has made an enormous commitment to develop Vermont's health information exchange (VHIE)—the central infrastructure that supports not only the Blueprint, but also other reform efforts. The VHIE is an information technology platform that is designed to enable data to flow in a standardized way, linking data across entities. Data flows from practices to DocSite, a clinical data repository, and back to practices in the format of standardized reports. These reports should enable providers statewide to better manage the health of their populations. It is also envisioned that the DocSite reports will enable state policy makers to develop and facilitate a "learning health care system."

Turning medical information into actionable knowledge has posed significant challenges for the Blueprint. VHIE's central challenge lies in building interfaces between a practice's own EHR and DocSite to enable data reporting and information exchange. Getting accurate patient-level data into DocSite from individual patient records requires considerable effort to accurately map the contents of the EHR to the registry specifications. Some practices and CHTs and SASH program staff without an EHR have chosen to upload data to DocSite manually.

Additionally, DocSite is intended to compile data across practices and produce population-level reports. However, after receiving erroneous data, providers questioned the credibility of the information in the DocSite reports. Though some practice and SASH staff like DocSite and found it helpful in assisting with population health management, planning visits, and documenting patient interactions outside of the medical sphere, other practices with whom we spoke during our site visit had abandoned use of DocSite. Interviewees generally expressed frustration at the state of VHIE; it is apparent that the challenges of implementing new health information technology (IT) systems were underestimated at the state level. The expectations of state leadership in using this platform to support health care delivery reform, including the Blueprint, according to one interviewee, "are not grounded in reality." Another respondent involved in the implementation of the VHIE states that, "In hindsight, it probably was a false step." Looking ahead, the Blueprint is planning to use facilitators to guide practice transformation and develop a "shared learning health system" using information from DocSite.

Evolution of Pilot Implementation with Medicare's Entrance

Structural and organizational changes needed to accommodate Medicare. Since Medicare's entrance into the Blueprint for Health, the largest organizational change to the initiative's structure has been the extension of the CHT model to specifically target the care of the frail, elderly population living independently in the community. The addition of Medicare as a payer provided an opportunity to fund and test a new feature in the state initiative, the SASH program. SASH services appear to be well coordinated with services provided by the CHTs. For those that had close association, there was little concern about duplicative care. There were more concerns raised about the organizational challenges of staffing and coordinating between CHTs and other players, such as practices and payers, an issue that existed before Medicare's entrance into the state initiative.

Currently, although there are common features across CHTs, including their composition and main foci, each CHT varies from region to region depending on community need. Commercial payers contend there is an issue with CHTs providing the necessary information to enable them to better manage their members' care. CHT staff responds to referrals from PCMHs regardless of the patient's insurance status and do not track interventions by insurance status. Commercial payers feel that, because of this practice, they are not able to judge the value of CHTs or coordinate care with their current disease management staff. This led one commercial payer to comment that they feel that are subsidizing care management services for Medicaid and the uninsured. One commercial payer quipped that the CHT felt like a "local job stimulus program." CHTs are also not tracking or collecting data on their patients, which commercial payers feel is crucial in order to determine the CHTs' extrinsic value. Another payer suggested that the loose documentation practices adopted by CHTs is a "serious design flaw and serious weakness." Without payer and patient-specific documentation, there is no way to determine which patients are "high utilizers" and no motivator to implement uniform interventions across the state.

To address some of these challenges, one commercial payer hosted an educational meeting in October 2012 of all the CHTs. The payer described the meeting as successful and something that the Blueprint should be convening more often to share lessons learned across the state. Subsequent meetings among CHTs, commercial payers, and disease management contractors could be used to promote coordination.

Another CHT structural issue raised during the site visit was the Blueprint's intentions to use the CHTs to "engage an entire population in effective health maintenance, prevention, and care for chronic disease" through direct engagement of a public health "specialist" (Blueprint 2008 annual report). In practice, this has not happened. Linkages to public health departments are non-existent or tenuous in some HSAs and access to data that would enable population health management is evolving.

The site visit also revealed that the allocation of CHT resources, including staff, still remains a concern for a few Blueprint practices. Two practices needed to advocate directly to Blueprint leadership for equitable distribution of CHT resources. In addition, one interviewee expressed general concern that practices governed by a hospital entity receive more CHT resources than the independent practices. Nonetheless, the majority of practices said they

appreciated the additional resources made available to their practices, especially the inclusion of more social workers.

Payers also reported administrative burdens to participating in the Blueprint prior to Medicare's entrance. Participating in a multi-payer demonstration requires considerable staffing resources, which was underestimated at the beginning. One commercial payer had to repurpose a staff member to take on Blueprint activity.

Attribution and enrollment before and after Medicare's entrance. Vermont is the only state to have been making payments for Medicare FFS beneficiaries attributed to PCMHs prior to the start of the MAPCP Demonstration. Although interviewees did not raise significant challenges with this experience, state officials raised notable attribution challenges stemming from Medicare's formal entrance into the pilot. Attribution of Medicare prior to the start of the demonstration was based on practice-reported Medicare beneficiary counts. When Medicare officially entered Vermont's initiative and began applying its own assignment algorithm, Vermont discovered that practices' original estimates of attributed Medicare beneficiaries were too high. The Blueprint's projected number of Medicare beneficiaries significantly exceeded the actual number, impacting project planning, payments to practices, and execution for the SASH program and the CHTs.³⁸ The current funding formula couples the CHT/SASH PMPM payment (\$4.57 in Year 1) but then makes this payment only for the beneficiaries *attributed* to PCMHs. SASH panels were planned and established based on an overestimate of the number of Medicare beneficiaries that would be attributed to participating PCMHs. According to state and SASH program officials, SASH program operations are underfunded, running at a \$40,000–50,000 deficit each month. As a result, the state froze the expansion of the SASH panels. The attribution issue has ramifications for CHT funding as well, as CHT payments are also based on the number of beneficiaries served. Vermont has reached out to CMS to request alteration of the payment mechanism to resolve the problem, citing inadequate data from CMS as a main reason for overestimating the number of Medicare beneficiaries. This request was pending approval as of December 2012.

Changes in resource allocations and financing as a result of Medicare's participation. In order to gain support for the Blueprint, DVHA made the commitment at the launch of PCMH and CHTs in pilot regions in 2007 to pay Medicare monthly PCMH fees to PCMHs for up to two years. Therefore, when Medicare joined the Blueprint in July 2011, there was no infusion of new funds to the practices that had been participating in the Blueprint pilot for less than two years. For practices that had been participating in the Blueprint pilot for more than two years or practices that had never participated in the Blueprint, the Medicare fees represented new funds to the practices.

Although practices mostly agree that the CHTs are one of the initiative's most useful features, payers question the value of this feature. Payers would rather see the full monthly payment go to practices. Although there is notable frustration about the lack of data showing the return on investment for CHTs, commercial payers seem resigned to wait.

³⁸ Around 106,000 Medicare beneficiaries were projected, but only 50,000 actually attributed.

Since Medicare joined, Vermont Medicaid and the commercial payers have developed a Memorandum of Understanding that changes the payment model for CHTs to allow for frontloading of payments, which provides six months of up-front payments in anticipation of a practice being recognized as a PCMH. This enables CHTs to begin working with practices on care coordination prior to NCQA PPC[®] PCMH[™] scoring. Medicare, however, will not frontload payments and will continue to pay only those practices who have become recognized PCMHs.

One CHT interviewee felt the current model is working for the CHTs, but questioned whether the current funding levels for the CHTs could be maintained: “I worry that we’re building this infrastructure that we can’t sustain.” The site visit revealed that the self-insured plans are not required to contribute to CHT funding. However, two of the three largest employers in the state, the state government and IBM, are contributing to CHT funding.

Impact of data systems. Vermont has continued to struggle with the data systems issues identified above. The introduction of Medicare into the Blueprint has minimal impact on the functioning of the VHIE or DocSite. However, the launch of the demonstration was accompanied by the launch of RTI’s web portal containing information on Medicare beneficiaries, a population that Blueprint practices were responsible for prior to the demonstration. Practices have found it useful to have access to data and performance feedback on Medicare beneficiaries. One state official noted “I had a couple project managers ask if they could get the performance feedback reports from Medicare sooner even before they were [NCQA] recognized.”

Impact of technical assistance to practices. Vermont has had in place a robust system of technical assistance for practices joining the Blueprint. Practices benefit from the EQuIP practice facilitators, VITL technical assistance on implementation of information technology, and NCQA scoring services from VCHIP. The entrance of Medicare into the Blueprint did not change the state’s technical assistance strategy, nor did it alter the technical assistance available to practices.

Spillover effects on Medicaid and private payers as a result of Medicare participation. Medicare’s entrance as a payer had a positive spillover effect for Vermont. No longer would DVHA have to make payments on behalf of Medicare, relieving DVHA of some of the pressure to respond to the growing demand for Medicaid services generated by a struggling economy. Because practices knew the state could not sustain its support for Medicare beneficiaries for much longer, Medicare’s participation removed an important source of uncertainty and brought renewed confidence to the Blueprint. Medicare enabled the state to expand the pilot statewide, as more practices and CHTs came into the Blueprint.

5.1.4 Lessons Learned

Although a majority of practices and state officials would agree that CHTs are an essential feature of the Blueprint, commercial payers are skeptical. The lack of data around who the CHTs are reaching and the services they are providing has been problematic for the payers. At the local level, CHT allocation across practices has worked well with a couple of exceptions.

The flexibility and local input in tailoring CHT composition has been welcomed by practices and has resulted in practices being better equipped to respond to patient needs.

Medicare attribution has been a challenge for initiative leaders who built their budgets around different assumptions about the number of Medicare participants. The SASH program, which targets services for the Medicare populations, was built on these early assumptions of larger numbers of Medicare FFS beneficiaries being attributed to participating PCMHs.

Better integration of behavioral health services is needed. In 2013, Vermont will be working to improve integration of mental health and substance abuse services for all patients, in general, and Medicaid patients, in particular, pending approval of their Section 2703 State Plan Amendment.

5.2 Practice Transformation

This section seeks to answer evaluation research questions related to describing the features of the PCMHs participating in the Vermont Blueprint for Health, identifying the changes that practices are making in order to take part in the multi-payer initiative and meet the participation requirements, describing the technical assistance provided to practices, summarizing early views on the payment model, and giving an account of experiences with the demonstration thus far. We rely upon findings from our initial site visit and secondary data provided by the state to answer these research questions.

5.2.1 Changes Practices Made to Join the Demonstration

Practices are making a number of changes related to NCQA PPC[®] PCMH[™] recognition, administrative issues, and health IT in order to participate in the Blueprint for Health.

PCMH recognition. The Vermont Blueprint requires that participating practices gain NCQA PPC[®] PCMH[™] recognition. Early entrants in the Blueprint qualified under NCQA's 2008 PPC[®] PCMH[™] standards while later adopters were required to qualify under the 2011 standards, which were perceived as being stricter. Practice and CHT staff interviewed often agreed with the standards set forth by NCQA, believing they focused on the right aspects of care quality and coordination. However, many also felt that the recognition process was time consuming, and one provider thought it was difficult to begin offering new services (in order to qualify for NCQA recognition) before a practice could begin receiving enhanced reimbursement to cover the cost of these new services.

Though some PCMH transformation began before they joined the Blueprint, many practices felt that the NCQA PPC[®] PCMH[™] standards forced them to adopt the model and make changes to the way they delivered care. As an illustration of the types of changes that PCMHs made as a result of PCMH recognition under the Blueprint, one primary care provider commented, "It was crucial to be able to do NCQA certification. We did a lot more documentation; we changed the way we did diabetes visits through the Blueprint. We had more structured planned visits. A foot exam, we followed the guidelines. We started getting a dietician and mental health [provider], all through the Blueprint. That was crucial."

Administrative changes. With extra funds available to practices and CHTs through the Blueprint, additional staff was added to the health care teams. These added providers were highlighted as the biggest positive to result from the Blueprint, though one CHT coordinator mentioned that the extra funds did not fully cover added employee costs. In the practices and CHTs we interviewed, more specialized employees whose expertise often extended beyond the normal scope of medical care were hired. For example, practices and CHTs we spoke with were beginning to add behavioral health specialists to their teams in order to address patients with mental health and substance abuse issues. The Blueprint has identified the need for more specialized care and plans to focus more on this population moving forward. Case managers and wellness nurses were also added to practices through the CHTs. These patient coaches work in concert with primary care physicians helping to coordinate among specialists, follow-up with patients after ER visits or hospitalizations, and assist with panel management for the highest cost beneficiaries. CHTs also added social workers to their teams to help with unmet needs such as food subsidies, transportation, clothing, and other social services. Dieticians, pharmacists, and health coaches were also added to practices and CHT teams. With the adoption and implementation of EHRs and DocSite, some practices hired data coordinators and IT assistants as well.

These more comprehensive teams have filled gaps that, in the past, left needs unmet. One primary care physician explained about utilizing his diverse staff, “I think teamwork sums up the biggest part. In the past, each provider was working alone, we just happened to be working in a group practice. But now there’s much more teamwork in how we view the patients. Who can we get to help this patient? It’s not all just resting on the doctor, now people with other hats can do the job as well as we can.” Primary care providers reflected positively on these additional members of the health care team.

Health information technology. Vermont has invested substantially in health IT, creating the Vermont Health Information Technology (HIT) Fund, which is funded from a 0.19% surcharge on paid commercial and state Medicaid claims. This health IT Fund now receives matching funds from the Office of the National Coordinator for Health Information Technology. It is an important source of funding for VITL, which provides assistance to practices that are adopting EHR systems, operates VHIE and acts as the Regional Extension Center (REC). All of Vermont’s acute care facilities, FQHCs and over 100 practices and other healthcare organizations interface with the VHIE. A subset of the clinical and patient information sent to the VHIE is then provided to Covisint’s DocSite, the state’s central clinical registry. Providers, laboratories and hospitals upload data to DocSite that practices can then access for population health management and also to generate comparative feedback reports to help guide their quality improvement efforts. Approximately 120 patient demographic and clinical summary interfaces exist between a provider EHR and the VHIE, and are then routed on to DocSite.³⁹

In addition, Onpoint Health Data is administering the state’s multi-payer database—known as the Vermont Healthcare Claims Uniform Reporting and Evaluation System (VHCURES)—to develop cost and utilization reports and to provide comparative outcome data to help assess the Blueprint’s impact and to inform annual reports about the Blueprint. Onpoint

³⁹ Information on the interconnectivity between VHIE, DocSite, and practice EHRs was sent in an email to RTI on 7/18/2013.

Health Data is conducting analyses of the multi-payer claims dataset for utilization and cost, as well as Health Effectiveness Data and Information Set (HEDIS) measures. To date, only commercial payer performance has been analyzed. Medicaid claims were added to VCHURES in 2012. Although Medicare claims data have been provided by CMS during the MAPCP Demonstration, Medicare data have not been added to VCHURES at the time of this report.”

Health IT has been the biggest challenge practices have faced since joining the Blueprint. To participate in the Blueprint, practices entered into agreements with Covisint and VITL and were required to show progress in using DocSite. DocSite was understood to be a necessary step towards developing a learning health system, but this particular feature of the Blueprint received the most negative reviews as providers felt it created additional work and added little in terms of capabilities. DocSite administrators, Blueprint staff, and VITL staff understand the practices’ frustrations and are currently working through the “sprint” process to find generalizable fixes.

Individual practice EHRs also created initial hurdles, but received mostly positive feedback once the software was up and running. Providers explained that the EHRs helped with patient tracking, patient referrals, and reporting capabilities—all of which were helpful during the NCQA PPC[®] PCMH[™] recognition process. All providers interviewed, with the exception of one, felt they could trust the data in their individual EHRs. There was some mention of implementation costs and the time intensive nature of training employees, but, again, the EHRs worked well once implemented. VITL has been instrumental in helping alleviate the costs associated with EHR implementation. The main complaint about the EHRs was in relation to their programs interfacing with DocSite.

Though DocSite generally received negative feedback, practices having gone through the “sprint” process—an end-to-end transmission of data from practice-based EHRs through the VHIE to DocSite—felt more optimistic about the registry. During a “sprint” process, a practice meets weekly to develop solutions to correct miscommunications between interfacing IT platforms and build provider confidence in the data’s veracity. The first “sprint” process, which was facilitated by Covisint, took 32 weeks to complete, but was shortened to 24 weeks in a subsequent process. A state official explained, “If you look at the “sprint” process now it seems like it’s not working. But behind the scenes we’re figuring out generalizable changes. Yes, we’re learning from our mistakes. Yes, there are general issues flushed out by the 32 week process that can be applied to all practices.” The Blueprint and VITL staff stated that a great deal is being learned during these “sprint” processes that is generalizable and will shortcut the process for subsequent practices entering into the “sprint.” The state remains committed to DocSite and its potential to support practices and population health management. There was positive confirmation that the “sprint” process had achieved its goal of generating reliable information flow back to the practices. An interviewee who has participated in the “sprint” spoke highly of the process, stating “I trust the data now,” and is beginning to generate and use population-level reports. As of October 2012, two practices had completed the “sprint” process. Several “sprints” were being completed at the time of the site visit; at least one “sprint” process is working concurrently with multiple practices. State officials believe that 10–12 “sprints” will be completed by July 2013.

Through the MAPCP Demonstration, practices and CHTs receive data from RTI International’s practice web portal. Some providers found the web portal helpful while others

were unaware of its existence. One state official explained that some practices were having trouble accessing the data and others felt it was just another report to look at. A practice did mention that they used the reports from RTI to help them qualify under NCQA's requirement of population health management. Several CHTs mentioned the usefulness of the RTI-provided beneficiary utilization files that provided them with information on recent ER visits and hospitalizations.

5.2.2 Technical Assistance

Through the Blueprint, practices are receiving technical assistance from a variety of resources. Vermont established facilitators to help prepare practices for the NCQA PPC[®] PCMH[™] recognition process. EQuIP, VITL, and the CHTs were the main facilitators discussed during the Vermont site visit. Each of these entities provides additional resources to help practices achieve Level 1 or higher recognition from NCQA. As mentioned in *Section 5.1.1*, EQuIP has helped practices and CHTs to institute quality improvement teams (a requirement of the Blueprint). Overall, the facilitators and technical assistance provided by the Blueprint or through the MAPCP Demonstration were found useful when providers and the CHTs chose to utilize the resources.

5.2.3 Payment Supports

The additional PMPM payments from insurers participating in the Blueprint for Health were designed to support practice transformation and, with the additional staffing resources from the CHTs, enhance team based care and coordination of care. Some physicians were aware that extra payments had been made to their practice but did not know specifically how they were structured, while practice managers and coordinators had more extensive knowledge of the payment levels and how these funds were used. Most practices explained that their funds were used to bring on additional staff from various disciplines (e.g., social workers, mental health experts, dieticians). Some smaller practices explained that the fees went to their general revenue fund and were used to support day-to-day operations for the additional PCMH services provided. Regardless of whether they had specific knowledge of the exact payment levels, all providers were thankful for the additional funds made available by the insurers and explained that it allowed them to add to the services provided by their practices and CHTs.

Still, some providers mentioned that they could do more good with a higher level of funding. One CHT coordinator explained that the funds did not fully cover expenses incurred. One provider raised the issue of NCQA PPC[®] PCMH[™] standards increasing between 2008 and 2011. Practices that qualified under the 2011 standards were required to meet higher benchmarks than practices that qualified under the 2008 standards. However, the Blueprint does make higher PMPM payments to practices that qualified under the more stringent NCQA PPC[®] PCMH[™] 2011 standards. There was also a question around whether the payments were being allocated effectively between practices, CHTs, and the SASH program, feeling that the CHTs were underfunded.

All recipients agreed that Medicare's addition to the Blueprint has been essential. A CHT director commented on how Medicare's payment structure has effectively added to the patient focus: "I think that I have struggled with the Blueprint for years because it was a 'fluffy' thing, and part of the involvement with CMS has made it come together with specific outcomes

surrounding the patient. I feel like we're finally at a place where we can offer something that has an effect on patients. By introducing these services, we can make an impact on patients. Every community is different. Allowing us to figure out what we need before the payment structure changes is key.”

The additional funds have afforded practices the ability to enhance their services and provide patients with more comprehensive care. With more resources added to the practices, primary care physicians can focus on their expertise while knowing that their team can fill in the gaps and ensure the success of patients. One primary care provider explained, “I would say that 7–8 years ago, before we ever started the collaboratives, when we were each in our own little pods, there were lots of things that got missed. Once we started the team approach, we had eyes on everything. It's been a huge change.”

5.2.4 Summary

Though practice transformation has been strenuous at times, the facilitators and the additional financial support from Medicare, Medicaid, and the private insurers has helped move the effort forward in the eyes of many respondents we spoke with. Practices, CHTs, and extenders we interviewed seemed optimistic about the Blueprint and felt that Medicare's involvement legitimized the Blueprint. Vermont has implemented resources to help practices reach important milestones such as receiving NCQA PPC[®] PCMH[™] recognition and implementing higher quality of care. DocSite remains a headwind for many practices—especially early adopters—but the “sprint” process and VITL are helping to ameliorate IT problems.

As the program moves forward one physician points out that, “CMS needs to know that part of this is saving money and it's going to be a long time to see changes. I'm thinking it will be a generation. The trouble is that it [cost savings] will be buried in the baby boomers' aging.” Some worry that, due to the slow pace of cost savings, Medicare will leave the program after the three-year demonstration. One CHT project manager notes, “We do hope that Medicare sees the benefit of this and that they can find ways to expand.”

5.3 Quality of Care, Patient Safety, and Health Outcomes

5.3.1 Implementation of State Initiative and Practice Features Expected to Improve Quality of Care, Patient Safety, and Health Outcomes During Year 1

This section of the report seeks to address evaluation research questions on the level of evidence that the Blueprint for Health has resulted in practice changes to improve the quality of care, patient safety, and health outcomes for Medicare and Medicaid beneficiaries. For this report, we have not conducted any quantitative analyses but have relied upon findings from our initial site visit and secondary data provided by the state to answer these research questions.

The key features of the Blueprint for Health initiative expected to improve quality of care, patient safety, and health outcomes are: (a) quality improvement teams established in practices, (b) quality measurement, (c) enhanced staffing and monitoring to ensuring practices' care complies with evidence-based guidelines, (d) wellness programs offered in the community, (e) increased efforts at medication reconciliation and falls prevention, and (f) efforts aimed at

reducing hospitalizations. Physician practices, CHTs, and SASH teams are involved in these efforts.

As part of the Blueprint, providers are required to designate a quality improvement team that meets at least monthly and works with the state quality improvement program, EQuIP. Practices must pick two quality of care projects on topics related to their own patients' needs, but are free to choose among a wide range of topics. Some practices we spoke with mentioned that they are tracking a number of measures across many clinical topics, including asthma, diabetes, heart disease, cancer screening, preventive health (immunization, obesity, and tobacco cessation), sexually transmitted diseases, and mental health screening. Practices are tracking these measures as part of their quality improvement team work and outside of that work.

Although no practice specifically mentioned working with EQuIP, at least two practices used a member of their CHT as a "panel manager", whose role is to help identify patients who need recommended care (e.g., track annual foot examinations and HbA1c testing for beneficiaries with diabetes). Although some practices said they were using their EHR to track quality measures and consult evidence-based guidelines, none mentioned that they were using DocSite to track quality measures or consult evidence-based guidelines.

CHTs and the SASH program are also involved in activities intended to improve health outcomes. CHT staff members provide educational programs about nutrition and diabetes or other health topics. Additionally, they refer patients to community programs that focus on wellness, such as the Healthier Living Workshops, tobacco cessation activities such as Quit in Person or other parts of the Quit Network, and family wellness coaching. The SASH program is measuring and tracking a different set of quality indicators, and reported improvements in time-to-get-up-and-go measures, cognitive tests, nutritional status, and physical activity.

With regard to enhancing patient safety, CHT coordinators and SASH wellness nurses provide medication reconciliation and checks on medication compliance as needed or upon discharge from the hospital. As one SASH coordinator said, "We put a lot of effort in medication management. Our wellness nurses put a lot of time into self-management for medication usage." The SASH program is also working on falls prevention activities and is measuring and tracking fall rates.

The initiative is also focused on reducing preventable hospitalizations and ER visits. For example, one CHT gets a report when patients are admitted to the hospital, in order to follow-up post-discharge and make sure patients see their primary care providers in their PCMHs within three days. Another practice reported that a panel manager spent 10 hours working with an individual with high ER utilization, to ensure that he connected with his PCMH physician and CHT. The patient has not been back to the ER since.

By the end of the MAPCP Demonstration, the Blueprint aims to achieve two quality-related goals:

- To increase by 10% the proportion of patients who receive guideline-based care for prevalent chronic conditions and recommended health maintenance, and

- To increase by 10% the proportion of patients with control of their chronic health condition(s).

In the interviews we conducted, practices report various perceived improvements in care related to these health maintenance goals, such as increases in the number of people receiving screening colonoscopies, tetanus shots, foot exams, help with healthy living, or achieving weight loss. Providers expressed enthusiasm for the fact that they were seeing their patients with chronic conditions more regularly, which could impact these goals. However, some interviewees expressed skepticism that any evaluation would reveal improvements because many different initiatives have been going on, all working on different topics.

5.3.2 Impacts on Quality of Care, Patient Safety, and Health Outcomes

Quantitative data assessing the impacts of the Blueprint for Health on quality of care, patient safety, or health outcomes on Medicare beneficiaries are not yet available. Future annual analyses and reports will attempt to assess the impact on these outcomes. Beginning with the second annual report, we will include descriptive and, where appropriate, multivariate analyses of process of care quality indicators, EHR Meaningful Use rates, prevention quality indicators, as well as outcomes on mortality, and incidences of serious medical events, using Medicare data. We will also provide results on self-reported health status based on the PCMH-Consumer Assessment of Healthcare Providers and Services (CAHPS) survey.

5.4 Access to Care and Coordination of Care

5.4.1 Implementation of State Initiative and Practice Features Expected to Improve Access to Care and Coordination of Care During Year 1

This section seeks to address evaluation research questions on the level of evidence that the Vermont Blueprint has resulted in more timely delivery of health services, better or enhanced access to a PCMH, and better coordination and continuity of care for Medicare and Medicaid beneficiaries. For this report, we have not conducted any quantitative analyses but have relied upon findings from our initial site visit to answer these research questions.

The Vermont Blueprint requires practices to achieve NCQA PPC[®] PCMH[™] Level 1 standards, which implies compliance with the NCQA ‘must pass’ elements regarding access during and after office hours, implementation of a care management program, and tracking of referrals and follow-up. Several practices said they have not needed to make changes to their hours of operation because they have always been accessible by phone or during non-office hours; only one practice we spoke with said that it would be expanding its hours. Most practices are making changes to improve access to same-day appointments, often motivated by patients’ conditions (e.g., patients with cancer) or patients’ recent discharge from the hospital.

A main feature of the Blueprint is that core CHT staff is embedded within practices, and can leverage CHT extenders as community resources. Two practices we interviewed have decided not to embed CHT staff in their practice and instead identified their own staff to serve in a similar capacity. Several practices reported the value of having “hot hand-offs” between the physician and CHT staff, such as a social worker, during a patient visit, or scheduling appointments with a dietician or other support staff on the same day as a patient visit. Practices

reported using the CHT staff, such as the behavioral health specialist and social worker, and other community resources, such as the visiting nurse association (VNA), to help with their patients' social and medical needs (e.g., finding sources of needed medications that are affordable for patients, referrals to substance abuse treatment services).

Providers agreed that CHTs allow their practices to offer access to better care to patients. As one provider said, "It's like we've grown another limb almost. We have completely new capabilities that we didn't have before." Another provider said that the initiative has "improved the way I practice chronic care medicine for a variety of disease states and CHT has made a huge difference." A provider who works with children with special health care needs says that the CHT ensures that the plan created by the family and provider actually gets implemented, and instead of seeing families for a more "crisis-oriented visit," the CHT helps to address issues and prevent potential crises.

At least three practices reported using either faxed discharge reports or access to the hospital EHR to identify patients recently discharged from the hospital and nurse care coordinators (CHT staff) to follow-up with them. One practice reported making sure that patients are seen at the practice within two days of hospital discharge. A provider reported that hospital readmissions have declined as a result of improvements in access to and coordination of care. Additionally, the qualitative evidence demonstrates that CHTs and SASH teams are providing services that ensure follow-up for patients who have recently been discharged from the hospital or have recently visited the ER.

With regard to how practices identify and follow-up with complex patients, several practices mentioned that they use the Medicaid Care Coordinators from the VCCI, who serve as CHT extenders, to focus on the more complex, high-cost Medicaid beneficiaries. Another practice mentioned that high-risk patients were identified by the social worker. High-risk patients include those who were recently discharged from the hospital or recently transitioned from a nursing home to their own home, and have social issues (e.g., they cannot afford their medication).

CHT staff reported providing the following care coordination services: connecting patients who have recently visited the ER with their PCMH (and for those that did not realize they had a PCMH, establishing them with a PCMH); working with patients post-hospital discharge; and assuring transportation to medical appointments. CHT staff reported that they also provide behavioral and substance abuse counseling and nutrition education, and help patients identify self-management goals, in addition to making community resource referrals to the SASH program, Healthier Living Workshops, and other treatment services.

With the entrance of Medicare through the MAPCP Demonstration, SASH teams have become available to work either directly with practice staff, or with the CHT staff as the liaisons between practices and Medicare beneficiaries residing in subsidized housing properties or the surrounding communities. SASH teams provide the following services: (a) make home visits, including for medication reconciliation and to check on the food in the homes of patients with diabetes; (b) work with patients transitioning from nursing home or hospital to home; and (c) refer patients to the CHT for needed services, including Healthier Living Workshops.

None of the interviewees mentioned patient portals as a feature that has been implemented to enhance access and care coordination. Also, none of the practice or CHT interviewees mentioned community health workers or public health specialists as resources they used; only a state official reported that CHTs help connect patients with public health programs.

Some challenges to improving access to care were also reported by interviewees; these are lack of transportation, difficulties in referring for dental and mental health services due to provider shortages, and a primary care doctor shortage. For example, one provider stated that patients are still going to the ER because there are not enough primary care practices to provide sufficient access to care.

Another major challenge to coordinating care is the lack of a centralized mechanism by which CHTs and SASH teams can easily communicate with other service providers about their patients. Although CHT members reported using the free text fields in DocSite as a communication vehicle, several individuals—a CHT member, a payer, and a state official—mentioned that some patients receive calls from multiple people trying to do care management. These calls could be from any number of sources: the primary care practice, another CHT member, a specialist’s office, the VNA, the Agency on Aging, the Medicaid VCCI program, or another commercial insurance-sponsored disease management program employee. To address this concern, the Blueprint is in the process of tracking CHT and SASH contacts via Excel spreadsheets, and is developing a web-accessible database that will help with this coordination.

5.4.2 Impacts on Access to Care and Coordination of Care

Quantitative data assessing the impacts of the Blueprint for Health on access to care and coordination of care on Medicare beneficiaries are not yet available. Future annual analyses and reports will attempt to assess the impact on these outcomes. Beginning with the second annual report we will include descriptive and multivariate analyses of several indicators of access to care and coordination of care. Claims-based indicators will include primary care physician and specialist visit rates; ratio of primary care visits to total ambulatory care visits; percentage of discharges from the hospital for a medical admission with a follow-up visit within 14 days; rate of unplanned readmissions within 30 days after discharge; the percentage of ER visits that do not lead to a hospitalization; and a continuity of care index, which measures the concentration of visits among providers in the practice that is the beneficiary’s usual source of care or to whom the beneficiary was referred by a provider in that practice. In addition, we will analyze a measure of care coordination based on responses to the PCMH-CAHPS survey.

5.5 Beneficiary Experience with Care

5.5.1 Implementation of State Initiative and Practice Features Expected to Improve Beneficiary Experience with Care During Year 1

Several features of the state initiative were identified as key components to improve beneficiary experience with care, including increased access to care, either through CHT care coordination or enabling patients to reach their physician or practice more efficiently; providing self-management tools and training to empower patients to manage their own health; and providing linkages to additional services, such as the Healthier Living Workshops and tobacco cessation activities.

Many activities have been implemented that encourage patients to better self-manage their health conditions or engage in healthy behaviors. Templates built into EHRs make it easy for physicians and patients to track patient goals. Health coaches teach motivational interviewing to PCMH and CHT staff. CHT members meet one-on-one with patients for weight checks, take them grocery shopping, and even make home visits to go through their cupboards and teach them how to prepare healthy meals. They also meet with patients to establish self-management goals. Diabetes educators conduct healthy eating television shows on a local network. Practices report patients are better able to self-manage their health conditions and are more likely to engage in healthy behaviors. One practice has seen measurable weight loss among its targeted patients due to providers talking to patients about weight loss and control of blood glucose. Another provider believes there is movement in the right direction, but thinks it will be a long time before measurable outcomes are seen.

The features we heard repeatedly that made the greatest contribution to improvement in experience with care are the CHTs and care managers. Providers reported anecdotally that patients enjoy working with the CHTs and they are seeing improvements in the health of patients who could have become lost in the health care system. The care managers are able to find problems early and provide needed solutions to avert a potentially negative situation. Additionally, practices believe that patients appreciate that the CHT staff are available in the practice offices. Some providers have been trying to get patients to see a counselor and they will finally do so if the staff is in the provider's office. A pediatric practice indicated that female patients are happy with the dietician. However, some families thought the health coach role was not a good use of time.

Every practice we spoke with referred patients to the Healthier Living Workshops on topics such as pain management and diabetes. One physician noted that a patient of his liked the workshops so much that she is now a facilitator. Patients are routinely referred to tobacco cessation workshops and classes, such as Quit in-person and Quit online. The Wellness Recovery Action Plan program, which is a group intervention for adults with mental illness, was not well known by practices and none indicated using the services.

Shared decision making training commenced in May 2012. Several training sessions were conducted by Health Dialog for facilitators, CHT members, and PCMH staff to teach trainees how to involve patients and family members and caregivers to participate more effectively in decisions concerning their health care. Implementation of these trainings did not appear to be widespread at the time of our site visit, however, because four of the practices we spoke with had not yet attended or were not aware of the trainings. One practice staff who did attend commented that it was not helpful because it was not geared to his patient population and that the teaching was backwards, in that it focused on teaching how to engage patients before you engage providers. Another practice indicated that they were making a concerted effort to focus on shared decision making. One state official we spoke with believes that Vermonters are interested in shared decision making, but was uncertain whether the trainings lead to improvements at the practice level.

5.5.2 Impacts on Beneficiary Experience with Care

Quantitative data assessing the impacts of the Blueprint for Health on beneficiary experience with care are not yet available. In the second annual report, we plan to report our findings from the PCMH-CAHPS survey administered to Medicare beneficiaries.

5.6 Effectiveness (Utilization & Expenditures)

5.6.1 Implementation of State Initiative and Practice Features Expected to Affect Patterns of Utilization and Expenditures During Year 1

Vermont specified in their MAPCP Demonstration application that they expect significant reductions in inpatient and ER utilization by the end of the demonstration. The state also expects reductions in the costliness of nursing home and mental health services. Vermont believes a 5%–10% cumulative reduction in the number of Medicare beneficiaries who receive hospital-based care for ambulatory care sensitive conditions (ACSCs) and the number of beneficiaries who are readmitted for hospital-based care for their ACSCs is attainable. The state also expects a 5%–10% reduction in the number of users and services for advanced imaging, major orthopedic procedures (fractures, knee replacements, and hip replacements), ambulance, nursing home, SNFs, long term care, and rehabilitation, as well as inpatient utilization related to musculoskeletal conditions and injuries over the course of the demonstration. Vermont also forecasted an increase of 1% for outpatient services and pharmacy and a 10% increase in laboratory and home-based care services over the course of the demonstration. These reductions and increases are predicted to achieve Medicare budget neutrality for the Blueprint. Vermont expects Medicare gross savings of \$51,454,051 (\$28,473,051 net of payments to practices) over the 3-year demonstration period.

The Blueprint aims to achieve these reductions by providing patients with greater access to consistent and well-coordinated care in a more cost-effective setting. With the introduction of the CHTs, patients are given more thorough and personalized care. Additional resources are available to PCMHs whose patients have psychiatric, social, and economic problems. Behavioral and mental health professionals, nutritionists, social workers, health coaches, and wellness nurses have been linked to PCMHs offering more comprehensive care for patients. Beneficiaries are also encouraged to take a greater role in their health care and receive self-management coaching and decision support. A focus of the CHTs is a reduction in the rate of readmission by ensuring follow-up care shortly after discharge from an acute care facility. Also, the implementation of EHRs within PCMHs facilitate population health management by identifying high risk populations who require additional ambulatory care attention, thereby reducing use of the ER and acute care hospitals. To reduce utilization and quality of care variability across the state, Vermont is applying this comprehensive model to all HSAs and is expects 80% of all primary care practices to achieve NCQA PPC[®] PCMH[™] recognition.

Vermont has many concurrently running health initiatives and the eventual goal of universal coverage for their citizens. These additional programs may present confounding factors to the MAPCP Demonstration evaluation. One state official commented on the evaluation saying, “As we talk about evaluating our efforts on payment reform, isolating the true effects of the Blueprint may be impossible. We might just do an overarching statewide analysis compared to other places rather than a discreet intervention looking for an impact.”

5.6.2 Year 1 Findings on Effectiveness

In this section, we present descriptive statistics and estimates of the demonstration effects from the quarterly fixed effects regression models (*Section 1.2.3, Equation 1.1*) for three Medicare expenditure outcomes (total expenditures, expenditures for short-stay, acute care hospitals, and expenditures for ER visits) and three utilization outcomes (all-cause, acute care hospitalizations, ER visits, and 30-day unplanned readmissions). The results are based on 26 quarters of data.

- Baseline period: January 2006–June 2008 (10 quarters). This is the period prior to the start of the Blueprint for Health pilot in Vermont.
- Pilot period: July 2008–June 2011 (12 quarters). This is the period after the start of the pilot but prior to the start of the MAPCP Demonstration. In Vermont, a substantial number of practices did not participate in the Blueprint for Health pilot.
- Demonstration period: July 2011–June 2012 (4 quarters). This is the first year after Medicare joined the Blueprint for Health.

The descriptive statistics reported here are weighted averages of the Medicare expenditure outcomes and utilization rates from 2006 through the first demonstration year. The averages are calculated separately for (1) beneficiaries assigned to Blueprint for Health practices that participated in pilot activities (the ‘MAPCP Demonstration pilot’ group), (2) beneficiaries assigned to Blueprint for Health practices that did not participate in pilot activities (the ‘MAPCP Demonstration non-pilot’ group), (3) beneficiaries assigned to PCMHs in the comparison group, and (4) beneficiaries assigned to non-PCMHs in the comparison group. The weights adjust the averages for differences in demonstration eligibility and for observable differences in beneficiary-, practice-, and geographic-level characteristics.

The regression models (see *Section 1.2.3*) were estimated separately using two distinct comparison groups: (1) beneficiaries assigned to PCMHs in the comparison group, and (2) beneficiaries assigned to non-PCMHs in the comparison group. The regression results aim to answer two key evaluation questions:

1. Did the Blueprint for Health affect expenditures and utilization rates during the MAPCP Demonstration period? Specifically, was the Blueprint for Health associated with slower growth in Medicare expenditures or reductions in utilization, relative to beneficiaries assigned to comparison practices?
2. Did the demonstration effect differ, depending on whether beneficiaries assigned to Blueprint for Health practices were compared to either (1) beneficiaries assigned to PCMHs in the comparison group, or (2) beneficiaries assigned to non-PCMHs in the comparison group?

The regression tables presented below will help answer these questions. They contain estimates of the demonstration effects for each quarter, and their standard errors. For expenditures, these are “difference-in-differences” effects. Negative estimates indicate that the growth in expenditures was smaller for beneficiaries assigned to participating practices than for

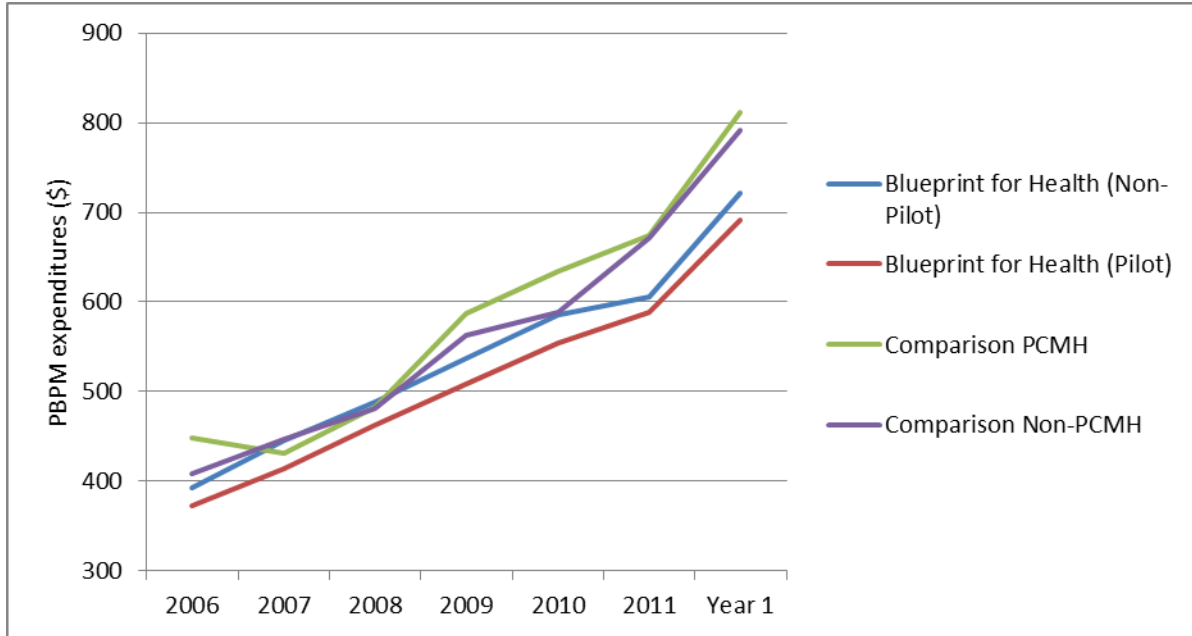
beneficiaries assigned to practices in the comparison group. Conversely, positive expenditure estimates indicate that the growth in Medicare expenditures was larger for beneficiaries assigned to participating practices than for beneficiaries assigned to practices in the comparison group. We also report the average demonstration effect over the entire first year of the demonstration, calculated as a weighted average of the four quarterly estimates (see *Section 1.2.3*).

For the rates (per 1,000 beneficiaries or hospital discharges) of all-cause, acute care hospitalizations, ER visits, and 30-day unplanned readmissions, the quarterly demonstration effects represent, for each demonstration quarter, the (regression-adjusted) change in average utilization among beneficiaries assigned to participating practices, relative to beneficiaries assigned to comparison practices. Negative estimates suggest that during particular demonstration quarters the state initiative was able to lower the utilization rate for beneficiaries assigned to participating practices, relative to beneficiaries assigned to comparison practices. Conversely, positive estimates suggest that the state initiative was associated with increased utilization rates in certain quarters during the demonstration period. As with the expenditure outcomes, we also report the average demonstration effect for utilization rates over the entire first year of the demonstration, calculated as a weighted average of the four quarterly estimates.

Descriptive statistics. Average PBPM Medicare expenditures and average utilization rates (per 1,000 Medicare FFS beneficiaries) from 2006 through the first year of the MAPCP Demonstration are shown in *Figures 5-2 through 5-7*. Total Medicare expenditures (*Figure 5-2*) increased and showed similar trends for all four groups of beneficiaries, though expenditures for beneficiaries assigned to pilot Blueprint for Health practices are lower than the expenditures for the other three groups across the entire study period. Expenditures for short-stay, acute care hospitals (*Figure 5-3*) also increased. Expenditures for ER visits increased and showed similar trends for all four groups of beneficiaries (*Figure 5-4*), with expenditures for ER visits highest among beneficiaries assigned to non-PCMH comparison practices and lowest for beneficiaries assigned to Blueprint for Health practices that participated in the Blueprint for Health pilot. The rates of all-cause, acute-care hospitalizations (*Figure 5-5*) increased for all four groups throughout the baseline period and the first year of the MAPCP Demonstration. The rates of ER visits (*Figure 5-6*) increased between 2006 and the first demonstration year and they were somewhat lower for beneficiaries assigned to pilot Blueprint for Health practices than for beneficiaries assigned to the comparison group practices. Finally, the rates of 30-day, unplanned readmissions (*Figure 5-7*) increased over time with the beneficiaries assigned to non-pilot Blueprint for Health practices showing the steepest trend.

Figure 5-2

Vermont: Trend in average total PBPM Medicare expenditures from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to Vermont Blueprint for Health non-pilot practices, Vermont Blueprint for Health pilot practices, comparison PCMHs, and comparison non-PCMHs

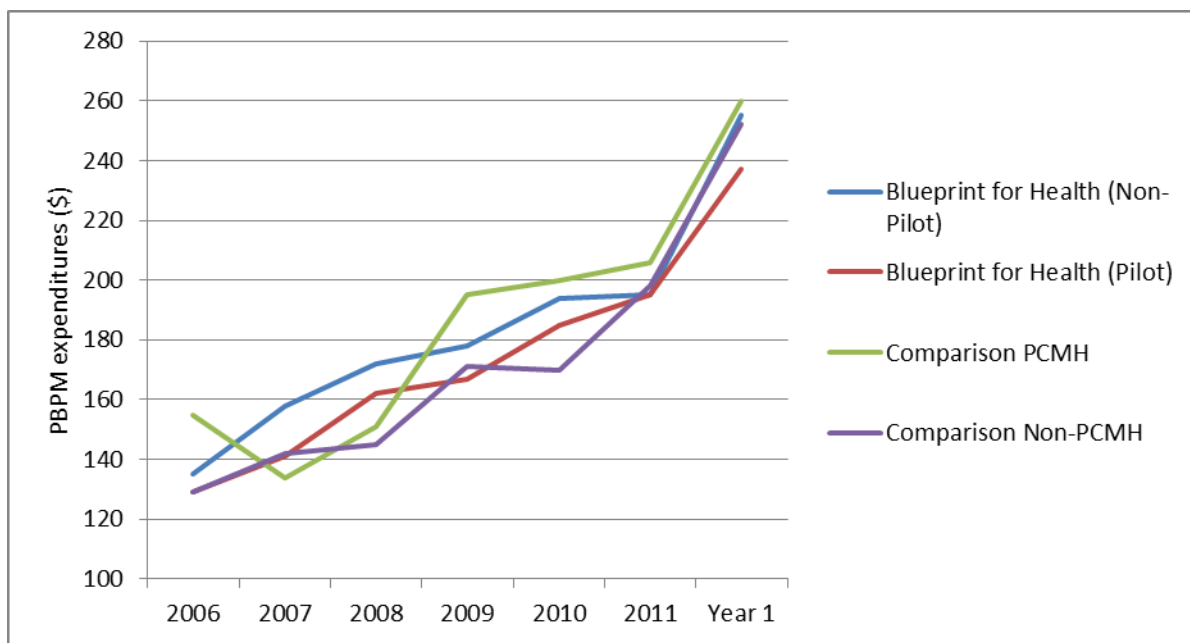


NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; PBPM = per beneficiary per month.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Vermont started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012. These amounts do not include fees paid by Medicare as a result of participation in the Blueprint for Health Demonstration.

Figure 5-3

Vermont: Trend in average PBPM Medicare expenditures for short-stay, acute-care hospitals from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to Vermont Blueprint for Health non-pilot practices, Vermont Blueprint for Health pilot practices, comparison PCMHs, and comparison non-PCMHs

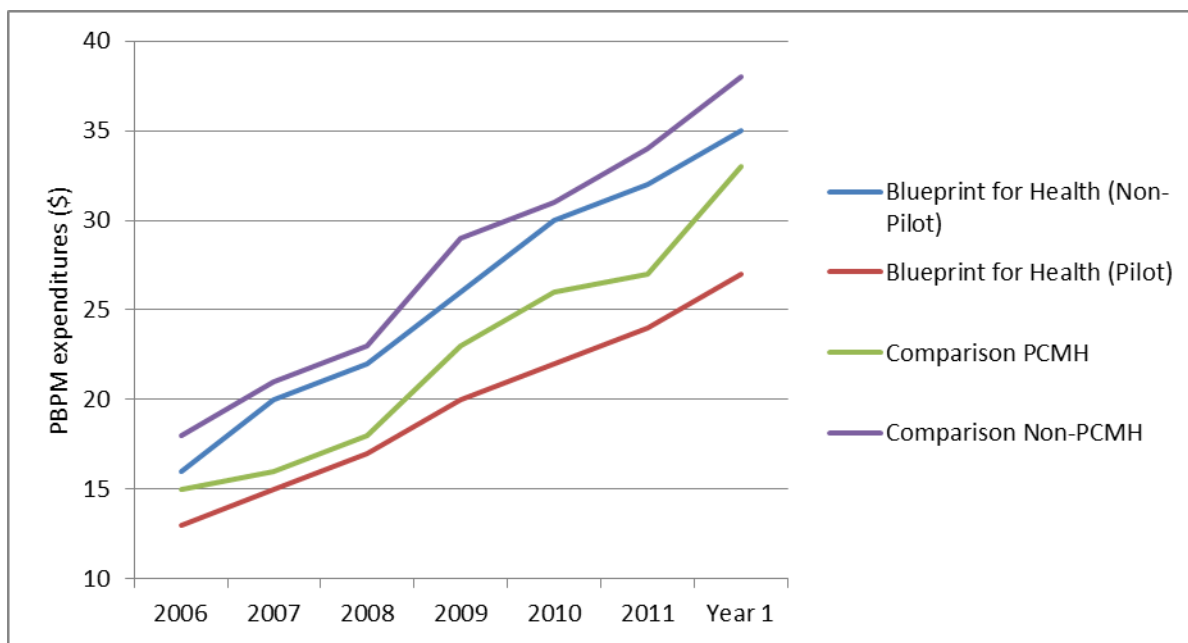


NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; PBPM = per beneficiary per month.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Vermont started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012. These amounts do not include fees paid by Medicare as a result of participation in the Blueprint for Health Demonstration.

Figure 5-4

Vermont: Trend in average PBPM Medicare expenditures for ER visits and observation stays from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to Vermont Blueprint for Health non-pilot practices, Vermont Blueprint for Health pilot practices, comparison PCMHs, and comparison non-PCMHs¹

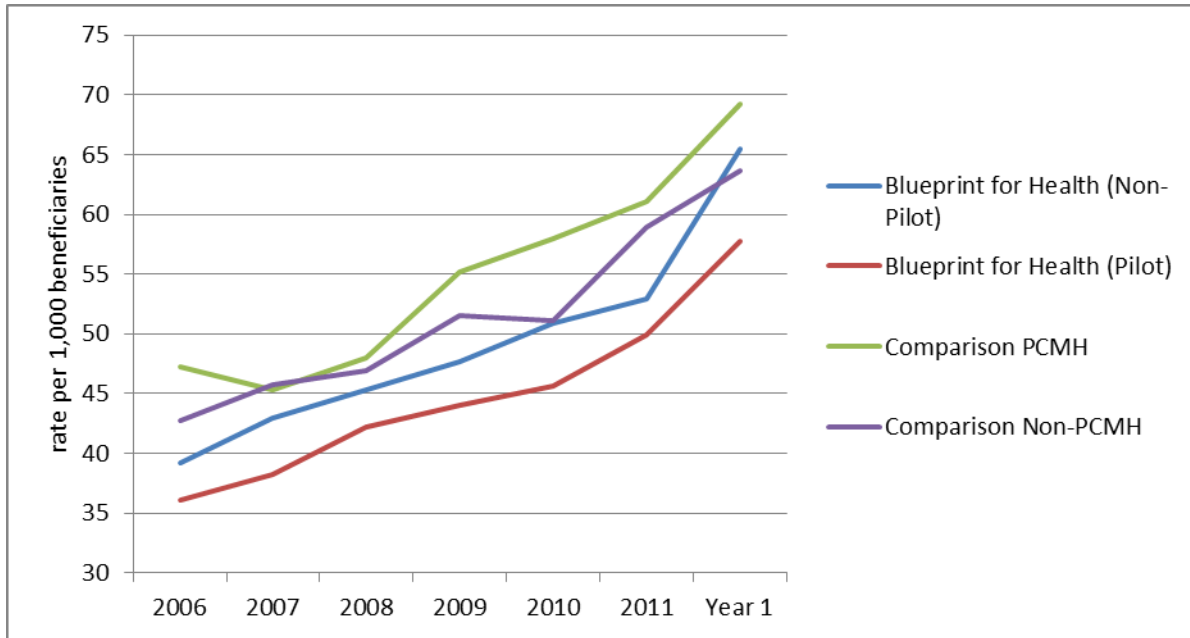


NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; PBPM = per beneficiary per month; ER = emergency room.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Vermont started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012. These amounts do not include fees paid by Medicare as a result of participation in the Blueprint for Health Demonstration.

¹ This excludes Medicare expenditures for ER visits that led to a hospitalization.

Figure 5-5
Vermont: Trend in average rate of all-cause, acute-care hospitalizations per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to Vermont Blueprint for Health non-pilot practices, Vermont Blueprint for Health pilot practices, comparison PCMHs, and comparison non-PCMHs

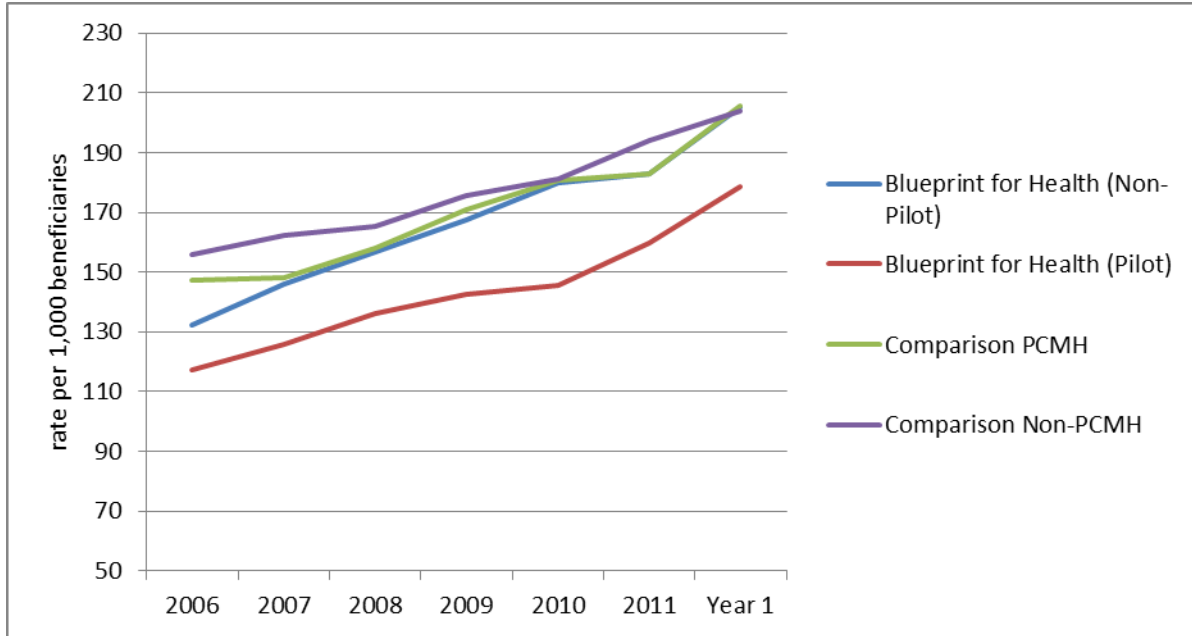


NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Vermont started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012.

Figure 5-6

Vermont: Trend in average rate of ER visits and observation stays per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to Vermont Blueprint for Health non-pilot practices, Vermont Blueprint for Health pilot practices, comparison PCMHs, and comparison non-PCMHs¹



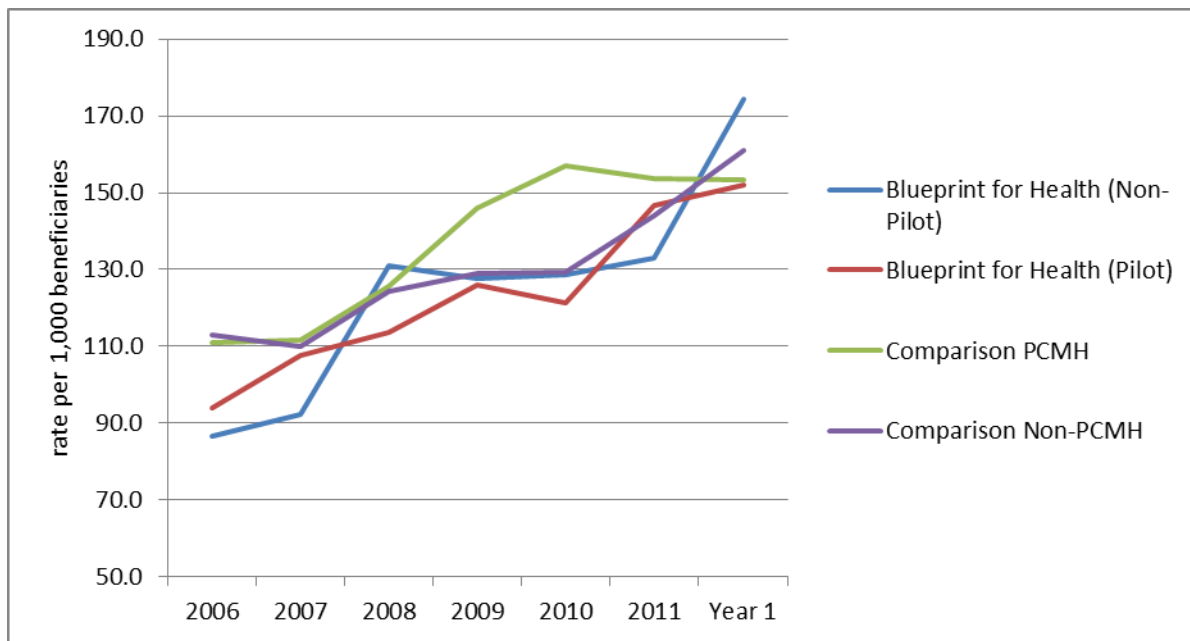
NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; ER = emergency room.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Vermont started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012.

¹ This includes ER visits that led to a hospitalization.

Figure 5-7

Vermont: Trend in average rate of unplanned hospital readmissions per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to Vermont Blueprint for Health non-pilot practices, Vermont Blueprint for Health pilot practices, comparison PCMHs, and comparison non-PCMHs



NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Vermont started on July 1, 2011, the 2011 averages were calculated over the period January–June 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period July 2011–June 2012.

Regression estimates. Quarterly difference-in-differences effects for Medicare expenditures, and their weighted average over the first year of the MAPCP Demonstration, are given in *Table 5-4*, and quarterly demonstration effects for the utilization rates, and their weighted averages, are given in *Table 5-5*, for beneficiaries assigned to Blueprint for Health practices that did not participate in the Blueprint for Health pilot. For beneficiaries assigned to Blueprint for Health practices that did participate in the pilot, the quarterly demonstration effects for Medicare expenditures, and their weighted averages, are in *Table 5-6*, and the quarterly demonstration effects for the utilization rates, and their weighted averages, are in *Table 5-7*.

Table 5-4

Vermont: Quarterly difference-in-differences estimates for PBPM Medicare expenditures during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to Blueprint for Health non-pilot practices vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Quarter	Blueprint for Health non-pilot vs. CG PCMH			Blueprint for Health non-pilot vs. CG non-PCMH		
	Total (\$)	Acute Care (\$)	ER (\$)	Total (\$)	Acute Care (\$)	ER (\$)
Jul–Sep 2011	–5.05 (23.94)	15.84 (16.53)	–0.37 (1.86)	–27.35 (25.06)	–13.50 (15.71)	–1.31 (2.05)
Oct–Dec 2011	–17.99 (27.22)	7.57 (19.53)	–1.18 (1.91)	–12.83 (30.75)	14.47 (20.04)	–0.78 (1.68)
Jan–Mar 2012	–18.86 (28.49)	19.43 (16.05)	–1.70 (2.60)	–27.15 (35.85)	3.33 (21.91)	–0.66 (2.20)
Apr–Jun 2012	3.61 (35.50)	11.93 (12.41)	2.37 (2.40)	6.99 (38.43)	14.12 (20.31)	0.75 (2.30)
Average ¹	–8.86 (18.17)	14.02 (9.30)	–0.05 (1.75)	–13.58 (22.92)	5.62 (11.98)	–0.37 (1.45)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room.

The table contains the difference-in-differences estimates for Medicare expenditures during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

¹ This is a weighted average of the four quarterly estimates, where the weights are the numbers of eligible beneficiaries who were assigned to a Blueprint for Health non-pilot practice in each quarter.

* p<0.10

Table 5-5

Vermont: Quarterly demonstration effect estimates for utilization rates (per 1,000 beneficiaries) during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to Blueprint for Health non-pilot practices vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Quarter	Blueprint for Health non-pilot vs. CG PCMH			Blueprint for Health non-pilot vs. CG non-PCMH		
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)
Jul–Sep 2011	8* (3.8)	8 (7.5)	38* (16.3)	6* (2.8)	7 (6.6)	30* (14.7)
Oct–Dec 2011	8 (5.0)	0 (5.5)	38* (20.3)	10* (4.7)	6 (6.1)	27 (19.2)
Jan–Mar 2012	9* (3.9)	10 (7.0)	42* (16.7)	8* (3.4)	15* (7.6)	28 (17.4)
Apr–Jun 2012	6* (2.2)	16* (6.4)	33* (14.3)	9* (3.2)	26* (6.8)	14 (14.3)
Average ¹	8* (2.9)	9* (4.5)	38* (10.8)	8* (2.8)	15* (5.0)	24* (9.5)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room.

The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

Due to the non-linearity of the regression models for utilization, the demonstration effect estimates do not have a difference-in-differences interpretation.

¹ This is a weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who were assigned to a Blueprint for Health non-pilot practice in each quarter.

* p<0.10

Table 5-6

Vermont: Quarterly difference-in-differences estimates for PBPM Medicare expenditures during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to Blueprint for Health pilot practices vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Quarter	Blueprint for Health pilot vs. CG PCMH			Blueprint for Health pilot vs. CG non-PCMH		
	Total (\$)	Acute Care (\$)	ER (\$)	Total (\$)	Acute Care (\$)	ER (\$)
Jul–Sep 2011	2.16 (21.12)	18.28 (13.41)	−0.13 (1.23)	−20.42 (18.39)	−12.16 (11.66)	−0.40 (1.46)
Oct–Dec 2011	−73.02* (23.44)	−46.39* (13.95)	−3.31* (1.52)	−68.13* (24.99)	−40.58* (13.72)	−2.25* (1.24)
Jan–Mar 2012	−76.99* (17.67)	−28.51* (10.03)	−3.08 (1.89)	−88.16* (27.68)	−46.96* (17.96)	−1.82 (1.61)
Apr–Jun 2012	6.32 (31.93)	15.69 (12.30)	−0.97 (1.59)	5.36 (34.94)	14.90 (19.15)	−2.25 (1.52)
Average ¹	−35.21* (12.87)	−10.11 (6.76)	−1.87 (1.32)	−42.65* (16.82)	−21.05* (8.19)	−1.68 (1.08)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room.

The table contains the difference-in-differences estimates Medicare expenditures during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

¹ This is a weighted average of the four quarterly differences-in-differences estimates, where the weights are the numbers of eligible beneficiaries who were assigned to a Blueprint for Health pilot practice in each quarter.

* p<0.10

Table 5-7

Vermont: Quarterly demonstration effect estimates for utilization rates (per 1,000 beneficiaries) during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to Blueprint for Health pilot practices vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Quarter	Blueprint for Health pilot vs. CG PCMH			Blueprint for Health pilot vs. CG non-PCMH		
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)
Jul–Sep 2011	3 (2.6)	7 (7.1)	38* (14.7)	1 (1.9)	7 (5.7)	33* (14.9)
Oct–Dec 2011	–2 (2.4)	–9 (6.0)	25 (16.9)	0 (2.2)	–3 (6.2)	16 (15.8)
Jan–Mar 2012	3 (2.8)	5 (5.1)	0 (10.5)	2 (2.6)	9 (5.7)	–12 (14.0)
Apr–Jun 2012	3 (2.3)	12* (5.7)	10 (13.4)	6* (3.1)	19* (5.7)	–6 (14.9)
Average ¹	2 (1.9)	4 (4.8)	18* (9.1)	2 (1.9)	8 (4.9)	7 (9.8)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room.

The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

Due to the non-linearity of the regression models for utilization, the demonstration effect estimates do not have a difference-in-differences interpretation.

¹ This is a weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who were assigned to a Blueprint for Health pilot practice in each quarter.

* p<0.10

From *Tables 5-4* and *5-5*, we reach the following conclusions about the impact of the Blueprint for Health during the first year of the MAPCP Demonstration for Medicare FFS beneficiaries assigned to Blueprint for Health practices **that did not participate in the pilot**.

- Between the baseline period and the first demonstration year, the changes in **total Medicare expenditures** (Part A and B), **expenditures for short-stay, acute-care hospitals** and **expenditures for ER visits** were similar for beneficiaries assigned to Blueprint for Health practices and for beneficiaries assigned to PCMHs and non-PCMHs in the comparison group.
- The rate of **all-cause, acute-care hospitalizations** during the first year of the MAPCP Demonstration increased faster for beneficiaries assigned to Blueprint for Health practices, relative to both PCMHs and non-PCMHs in the comparison group. The quarterly demonstration effects were significant in almost every quarter.
- The rate of **ER visits** (per 1,000 beneficiaries) increased faster for beneficiaries assigned to Blueprint for Health practices, relative to both PCMHs and non-PCMHs in the comparison group. This result was driven by the third and fourth demonstration quarters (January–June 2012).
- The rate of **unplanned readmissions** increased faster for beneficiaries assigned to Blueprint for Health practices during the first year of the MAPCP Demonstration, relative to both PCMHs and non-PCMHs in the comparison group.

From *Tables 5-6* and *5-7*, we reach the following conclusions about the impact of the Blueprint for Health in the first year of the MAPCP Demonstration for Medicare FFS beneficiaries assigned to Blueprint for Health practices **that participated in the Blueprint for Health pilot**.

- Between the baseline period and the first demonstration year, growth in **total Medicare expenditures** (Part A and B) was lower for beneficiaries assigned to Blueprint for Health practices, relative to comparison PCMHs (−\$35) and comparison non-PCMHs (−\$43). These results were driven by the estimates for the second and third demonstration quarters (October 2011–March 2012).
- The changes in **expenditures for short-stay, acute-care hospitals** between the baseline period and the first demonstration year were lower for beneficiaries assigned to Blueprint for Health practices, relative to beneficiaries assigned to comparison PCMH and comparison non-PCMH practices.
- The changes in **expenditures for ER visits** between the baseline period and the first demonstration year were similar for beneficiaries assigned to Blueprint for Health practices, comparison PCMHs, and comparison non-PCMHs.
- The rates of **all-cause, acute-care hospitalizations and ER visits** (per 1,000 beneficiaries) during the first year of the MAPCP Demonstration year did not change

significantly for beneficiaries assigned to Blueprint for Health practices relative to the comparison group (PCMH and non-PCMH).

- The rate of **unplanned readmissions** during the first year of the MAPCP Demonstration year did not change significantly for beneficiaries assigned to Blueprint for Health practices relative to comparison non-PCMHs. However, the rate increased on average by 18 readmissions/1,000 hospital discharges for beneficiaries assigned to practices participating in the state initiative, relative to comparison PCMHs. The latter result was driven by the first demonstration quarter (July–September 2011).

Cohort 1 analysis. The quarterly fixed effects model was also estimated using only data from the beneficiaries in “cohort 1.” In Vermont, these are beneficiaries who were first assigned to a Blueprint for Health practice or comparison practice during the first two quarters of the MAPCP Demonstration (July–December 2011); it does not include those beneficiaries who were newly assigned during the third and fourth quarters of the MAPCP Demonstration. As discussed in more detail in *Section 1.2.3*, the purpose of a cohort 1 analysis was to measure the demonstration effects on stable intervention and comparison groups. In the data used for this report, cohort 1 beneficiaries comprised 78% of the Blueprint for Health group, 87% of the PCMH comparison group, and 85% of the non-PCMH comparison group.

The full set of cohort 1 estimates for Medicare expenditures and utilization rates are given in *Tables 5A-1 through 5A-4* in *Appendix 5A*, respectively. For convenience we repeat here the average estimates for the first MAPCP Demonstration year in *Table 5-8* for the non-pilot Blueprint for Health practices and in *Table 5-9* for Blueprint for Health practices who participated in the pilot. On comparing these with the ones for the full sample in *Tables 5-4 through 5-7*, we note the following similarities and differences.

- Similar to the estimates based on the full sample of beneficiaries, rates of **all-cause, acute care hospitalizations, ER visits, and unplanned readmissions** increased faster for cohort 1 beneficiaries assigned to non-pilot Blueprint for Health practices than for cohort 1 beneficiaries assigned to comparison PCMHs and non-PCMHs.
- Similar to the estimates based on the full sample of beneficiaries, the rate of growth in **total Medicare expenditures** was lower for cohort 1 beneficiaries assigned to pilot Blueprint for Health practices relative to cohort 1 beneficiaries assigned to comparison PCMHs and non-PCMHs. The growth in **expenditures for all-cause, acute-care hospitalizations** was also lower for cohort 1 beneficiaries assigned to Blueprint for Health pilot practices compared to cohort 1 beneficiaries assigned to non-PCMH comparison practices.
- Unlike the corresponding estimate for the full sample of beneficiaries, the rate of **unplanned readmissions** did not change significantly for cohort 1 beneficiaries assigned to Blueprint for Health practices, relative to cohort 1 beneficiaries assigned to PCMH comparison practices.

Table 5-8

Vermont: Average demonstration effect estimates during the first year of the MAPCP Demonstration for Medicare expenditures and utilization rates, comparing performance for Medicare beneficiaries first assigned in July–December 2011 to Blueprint for Health non-pilot practices vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Outcome	Blueprint for Health non-pilot vs. CG PCMH		Blueprint for Health non-pilot vs. CG non-PCMH	
	Average effect	Standard error	Average effect	Standard error
Total expenditures (\$)	-11.53	(19.04)	-30.46	(19.50)
Acute care expenditures (\$)	18.86	(13.83)	-0.09	(15.00)
ER expenditures (\$)	1.40	(1.91)	1.00	(1.70)
All-cause hospitalizations (per 1,000 beneficiaries)	8*	(3.8)	7*	(3.0)
ER visits (per 1,000 beneficiaries)	15*	(6.2)	18*	(6.4)
Unplanned readmissions (per 1,000 beneficiaries)	37*	(11.5)	21*	(11.4)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room.

The table contains average demonstration effect estimates and standard errors for the first year of the MAPCP Demonstration, for Medicare expenditures and utilization rates. The average estimate is a weighted average of the four quarterly estimates, where the weights are the numbers of eligible beneficiaries in each quarter.

For Medicare expenditures, the demonstration effects can be interpreted as difference-in-differences.

* p<0.10

Table 5-9

Vermont: Average demonstration effect estimates during the first year of the MAPCP Demonstration for Medicare expenditures and utilization rates, comparing performance for Medicare beneficiaries first assigned in July–December 2011 to Blueprint for Health pilot practices vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Outcome	Blueprint for Health pilot vs. CG PCMH		Blueprint for Health pilot vs. CG non-PCMH	
	Average effect	Standard error	Average effect	Standard error
Total expenditures (\$)	-46.57*	(16.80)	-68.17*	(16.14)
Acute care expenditures (\$)	-10.02	(10.62)	-31.97*	(11.72)
ER expenditures (\$)	-1.48	(1.56)	-1.31	(1.29)
All-cause hospitalizations (per 1,000 beneficiaries)	1	(2.2)	0	(1.8)
ER visits (per 1,000 beneficiaries)	4	(5.0)	6	(5.4)
Unplanned readmissions (per 1,000 beneficiaries)	14	(9.7)	-1	(11.7)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room.

The table contains the average demonstration effect estimates and standard errors for the first year of the MAPCP Demonstration, for Medicare expenditures and utilization rates. The average estimate is a weighted average of the four quarterly estimates, where the weights are the numbers of eligible beneficiaries in each quarter.

For Medicare expenditures, the demonstration effects can be interpreted as difference-in-differences.

* p<0.10

In sum, between the baseline and the first year of the MAPCP Demonstration, the rates of growth in all three utilization measures were higher among beneficiaries who were first assigned to non-pilot Blueprint for Health practices during the first six months of the MAPCP Demonstration, relative to beneficiaries assigned to comparison PCMHs and non-PCMHs during the same time period. The growth in total Medicare expenditures was lower for beneficiaries who were first assigned to pilot Blueprint for Health practices during the first six months of the MAPCP Demonstration, relative to beneficiaries assigned to comparison PCMHs and non-PCMHs.

Summary of evaluation findings. Our analyses of Medicare expenditures and utilization rates during the first year of the MAPCP Demonstration provide some preliminary evidence about the effectiveness of the demonstration for Medicare FFS beneficiaries. The evidence can be summarized as follows.

- There is evidence that the Blueprint for Health reduced the growth in total Medicare expenditures between the baseline period and the first year of the MAPCP

Demonstration for the practices the participated in the pilot. This result was driven by the slower growth in expenditures to short-stay, acute-care hospitals in the second and third quarters of the demonstration period.

- There is no evidence that the Blueprint for Health reduced the rates of all-cause, acute-care hospitalizations, ER visits, or unplanned readmissions between the baseline period and the first year of the MAPCP Demonstration among practices that participated in the Blueprint for Health pilot.
- There is no evidence that the Blueprint for Health reduced the growth in total Medicare expenditures, expenditures for short-stay, acute-care hospitals, or expenditures for ER visits between the baseline period and the first year of the MAPCP Demonstration among practices that did not participate in the Blueprint for Health pilot.
- There is no evidence that the Blueprint for Health reduced the rates of all-cause, acute care hospitalizations, ER visits, and unplanned readmissions among beneficiaries assigned to Blueprint for Health practices that did not participate in the Blueprint for Health pilot. In fact, the rates increased between the baseline period and the first year of the MAPCP Demonstration, relative to the comparison group (PCMH and non-PCMH). This did not lead to acceleration in expenditures, suggesting that the average expenditures per hospitalization or emergency room visit may have decreased.

5.6.3 Medicare Budget Neutrality in Year 1 of the Blueprint for Health

In this section, we present estimates of budget neutrality in the first year of the MAPCP Demonstration using the methodology described in *Section 1.2.3*. *Table 5-10* reports the estimated gross and net savings for Vermont during that year, relative to the PCMH comparison group. Results are presented separately by the four quarters and for pilot and non-pilot practices. The results are then summed to produce total savings and fees for both groups separately and combined.

Total gross savings to Medicare was \$12,856,253, reflective of the findings reported earlier that the growth in Medicare expenditures was lower among beneficiaries assigned to Blueprint for Health practices compared to beneficiaries assigned to PCMH comparison group practices. Total MAPCP Demonstration fees paid out based on eligible quarters were \$3,102,125. Medicare's net savings are estimated to be \$9,754,128, or \$235.54 per full-year eligible beneficiary. These findings indicate that the Blueprint for Health in Vermont did generate cost savings in the first year of the MAPCP Demonstration.

Table 5-10
Estimates of gross savings, fees paid, & net savings, Year 1 of the MAPCP Demonstration, Vermont

Budget Neutrality Parameter	MAPCP Demonstration Quarter (Year 1)				Year 1 Total	90% Confidence Interval	
	Jul–Sep 2011	Oct–Dec 2011	Jan–Mar 2012	Apr–Jun 2012		Lower	Upper
Non-Pilot							
Difference in quarterly expenditures per beneficiary	-\$15.16	-\$53.98	-\$56.57	\$10.83	-\$114.88	—	—
Eligible beneficiary quarters	11,564	11,536	17,058	18,577	58,735	—	—
Total gross savings	\$175,310	\$622,713	\$964,971	-\$201,189	\$1,561,806	-\$3,751,931	\$6,875,690
Total MAPCP Demonstration fees	\$142,787	\$221,788	\$327,645	\$356,944	\$1,049,164	—	—
Net savings	\$32,523	\$400,925	\$637,326	-\$558,133	\$512,642	—	—
Average expenditures (comparison group)	\$2,203	\$2,589	\$2,536	\$2,401	\$9,729	—	—
Total expenditures (comparison group)	\$25,475,492	\$29,866,704	\$43,259,088	\$44,603,377	\$143,204,661	—	—
Pilot							
Difference in quarterly expenditures per beneficiary	\$6.47	-\$219.06**	-\$230.98**	\$18.96	-\$424.61	—	—
Eligible beneficiary quarters	26,577	26,491	26,743	27,100	106,911	—	—
Total gross savings	-\$171,953	\$5,803,118	\$6,177,098	-\$513,816	\$11,294,447***	\$4,441,458	\$18,146,964
Total MAPCP Demonstration fees	\$505,531	\$510,383	\$515,294	\$521,753	\$2,052,961	—	—
Net savings	-\$677,484	\$5,292,735	\$5,661,804	-\$1,035,569	\$9,241,486	—	—
Average expenditures (comparison group)	\$2,203	\$2,589	\$2,536	\$2,401	\$9,729	—	—
Total expenditures (comparison group)	\$58,549,131	\$68,585,199	\$67,820,248	\$65,067,100	\$260,021,678	—	—
Combined							
Total gross savings	\$3,357	\$6,425,832	\$7,142,069	-\$715,005	\$12,856,253	—	—
Total MAPCP Demonstration fees	\$648,318	\$732,171	\$842,939	\$878,697	\$3,102,125	—	—
Net savings	-\$644,961	\$5,693,661	\$6,299,130	-\$1,593,702	\$9,754,128	—	—

NOTES:

*p<.10; **p<.05; ***p<.01

Differences in quarterly expenditures per beneficiary: Estimated difference in average Medicare Part A and B expenditures between beneficiaries assigned to Blueprint for Health practices and those assigned to PCMHs in the comparison group, excluding beneficiaries with less than 3 months of demonstration eligibility.

Eligible beneficiary quarters: Sum of Blueprint for Health beneficiaries' fractions of quarters eligible to participate in the MAPCP Demonstration excluding beneficiaries with less than 3 months eligibility.

Total gross savings: Combined savings effect per beneficiary times the number of eligible beneficiary quarters. Savings are the negative of the expenditure difference. Positive savings indicates that the intervention group's expenditures increased less than the comparison group's expenditures. Negative savings indicate that the intervention group's expenditures increased more than the PCMH comparison group's expenditures.

Total MAPCP Demonstration fees: Sum of MAPCP Demonstration fees, excluding fees paid on behalf of beneficiaries with less than 3 months of eligibility.

Net savings: Gross savings minus total MAPCP Demonstration fees.

Average expenditures (PCMH comparison group): Medicare expenditures per beneficiary in comparison group.

Total expenditures (PCMH comparison group): Average expenditures per beneficiary times the number of Blueprint for Health beneficiaries' eligible quarters.

SOURCE: Medicare Part A and B claims January 1, 2006–June 30, 2012.

5.7 Special Populations

5.7.1 Targeting of Special Populations and Tailored Interventions During Year 1

Vermont identified four main subpopulations as special foci within the state:

- Medicaid beneficiaries with one or more chronic conditions
- Medicare beneficiaries in supported housing, through the SASH program
- Individuals with behavioral health issues
- Individuals (other than Medicaid) with chronic conditions/multiple co-morbidities/high risk

VCCI was established to operate as an extension of the CHTs targeting Medicaid beneficiaries with one or more chronic conditions. Through the VCCI initiative, Medicaid care coordinators serve as “extenders” to the CHTs focusing on the more complex, high cost Medicaid beneficiaries. The Medicaid care coordinators provide intensive case management services such as care coordination, health coaching and health education.

Medicare beneficiaries in supported housing, as well as those residing in the community, are targeted through the SASH program, which was developed to help elderly residents age safely in place by connecting them with community-based support services and greater coordination of health care. The SASH teams extend the work of the CHTs and the primary care providers by providing targeted support and services to SASH participants in their homes.

People with behavioral health issues and mental illness are targeted in an effort to better coordinate care, which could increase use of mental health services and total outpatient visits but decrease the rates of hospitalizations and ER visits. For people with behavioral health issues, the CHTs work with mental health agencies or counselors in the community to coordinate care for identified patients. In some CHTs, a member of the team is designated as the lead case manager who works with patients to coordinate care.

Individuals with multiple chronic conditions are targeted due to high health care expenditures. Chronic conditions that practices are focusing on include hypertension, diabetes, and congestive heart failure. Asthma is a focus for pediatric practices. Two main health conditions of focus are obesity and tobacco use. The statewide Healthier Living Workshop program, coordinated by the Blueprint and the Division of Health Promotion and Disease Prevention at the Vermont Department of Health, is designed to assist patients with chronic conditions by providing education on self-management and engagement skills to improve control of their condition(s). Workshop topics include healthy eating, diabetes care, and pain management. Additionally, VCHIP hired two facilitators to work with pediatric practices focusing on children with chronic conditions, such as asthma and diabetes.

The CHTs serve as the hub for providing and coordinating services for the special populations in Vermont through the use of the CHT extenders, such as SASH coordinators and wellness nurses and Medicaid care coordinators. Referrals of patients to particular members of a

CHT occur at many levels—they can go from a SASH coordinator to the CHT, the CHT to the SASH coordinator, from a practice to a CHT, and even from a hospital to the CHT or SASH coordinator. Some interaction occurs directly between SASH staff and practices with regard to coordinating transitions of care, particularly with a high-risk person. Workflows and referral systems have or are being developed by the CHTs to coordinate care.

Regularly occurring in-person meetings are held in which members of the CHT, including the extenders, meet to discuss cases and develop health plans for patients with the greatest needs. Most CHTs reported good attendance from the extenders at these meetings. Ongoing communication, which appears to be working well, takes place to ensure there is no unnecessary duplication of services. Decisions for patient care takes place on a case-by-case basis in terms of who from the CHT can provide the best care for a particular patient. Transitioning care is also a main discussion point to ensure that transitions (i.e., from hospital to care manager) are occurring smoothly. One SASH coordinator commented that the CHT is the “strongest component of the Blueprint that we work with.”

For patients with chronic conditions, there is reported widespread use of the Healthier Living Workshops. Every practice we spoke with reported they routinely refer patients to the workshops. Of note, the SASH program administers workshops for their participants to augment what is available at the state level.

5.7.2 Impacts on Special Populations

Quantitative data assessing the impacts of the MAPCP Demonstration on special populations are not yet available. In future reports, we plan to report our findings on the impacts of the demonstration on special populations as identified above as well as among special populations of policy interest, such as the Medicare and Medicaid dual eligible beneficiaries.

5.8 Discussion

There is evidence that the Blueprint for Health reduced the growth in total Medicare payments during the first demonstration year among practices that participated in the Blueprint for Health pilot. This result was driven by the slower growth in payments to short-stay, acute-care hospitals. However, there is no evidence that the Blueprint for Health pilot practices reduced the rates of all-cause, acute-care hospitalizations or ER visits during the first year of the demonstration. Among practices that did not participate in the Blueprint for Health pilot, there is no evidence that the Blueprint for Health reduced the growth in Medicare payments, in total, or for acute-care hospitals or ERs. However, the rate of growth in all-cause, acute-care hospitalizations and ER visits during the first year increased relative to the comparison group (PCMH and non-PCMH). At the same time, this did not lead to acceleration in payments, suggesting that the average payment per hospitalization or ER visit may have decreased.

The Vermont Blueprint for Health is defined as a “program for integrating a system of health care for patients, improving the health of the overall population, and improving control over health care costs by promoting health maintenance, prevention, and care coordination and management” (State of Vermont Legislative Act 128). There are many elements of the Blueprint that are in various stages of implementation; some predating Medicare’s entrance into the Blueprint and others expanded after Medicare’s entrance. We focus on a small number of

components that are likely to be critical to successfully improving quality of care, access to and coordination of care, and reducing the cost of care, and may be factors in the positive findings to date especially among the PCMHs that participated in the Blueprint pilot.

The Vermont Blueprint for Health was launched in 2003 to provide better management of chronic illness and to control costs. In 2008, the Blueprint launched a pilot of PCMHs supported by CHTs. By July 2011, when Medicare joined the Blueprint under the MAPCP Demonstration, there were at least two PCMHs in all 14 Health Service Areas; thus, there was considerable pre-demonstration practice transformation activity in the State of Vermont within the practices that participated in the pilot.

A requirement of participation in the Blueprint is NCQA recognition as a PCMH. Though most practices we interviewed felt that some APCP transformation began before they joined the Blueprint, they felt that the NCQA standards forced them to make additional changes to the way they delivered care, and also felt that the certification process was very time consuming. To reduce the burden, the Blueprint has also invested significantly in practice transformation assistance. EQuIP staff teach the primary care practices change theory; assist with practice team development, NCQA application preparation, and rapid change cycle projects focused on patient-centered care; and coordinate with CHTs and other practice supports. With the help of EQuIP, practices and CHTs have instituted quality improvement teams (a requirement of the Blueprint). In addition, Covisint provides on-site help connecting practices with the DocSite registry. Recently, CHTs began working with practices six months prior to NCQA scoring to assist them, particularly small practices, in meeting the more stringent 2011 NCQA requirements. The Blueprint has also funded Health Dialog to train practice staff in shared decision making.

Since Medicare's entrance into the Blueprint for Health, one major organizational change to the initiative's structure has been the extension of the CHT model to all 14 HSAs. CHTs coordinate care, services, referrals, transitions, and social services and provide self-management support and counseling to individuals with chronic illness. Most CHT-funded staff members are embedded in the PCMHs. Currently, the composition of the CHTs varies from HSA to HSA depending on community need. The process for local determination of how CHT resources would be distributed across PCMHs appeared to generally work well. However, in several HSAs there were initial concerns that greater resources were being provided to practices owned by the hospital within which the CHT was housed. It appears that there was satisfactory resolution of these concerns.

We heard strong, broad-based support for the CHTs from the PCMHs. These added providers were highlighted as the biggest positive to result from the Blueprint. Specialized employees, whose expertise often extended beyond the normal scope of medical care were hired for PCMHs and the CHTs, and included behavioral health specialists, case managers, social workers, dietitians, pharmacists, and health coaches. These more comprehensive teams appear to have filled gaps that, in the past, left unmet needs. One primary care physician opined, "I think teamwork sums up the biggest part....It's not all just resting on the doctor." However, there was a strong consensus from all interviewees that greater integration of behavioral health services was needed. This is an enhanced focus of the Blueprint in the upcoming year.

A second major organizational change to the initiative's structure since the entrance of Medicare has been the extension of the CHT model to specifically target the care of the frail, elderly population living independently in the community. The addition of Medicare as a payer provided an opportunity to fund and test a new feature in the state initiative, the SASH program, which links staff based in supported housing properties (a SASH coordinator and wellness nurse) with a team of community-based health and supportive services providers to help older adults coordinate and manage their care needs and the Blueprint-funded CHTs. One area of evaluation was the degree to which the CHTs and SASH program staff are coordinating services versus duplicating services. Based upon our interviews, SASH program services appear to be well coordinated with services provided by the CHTs. For those that had close association with the two sets of providers, there was little concern about duplicative care.

A third major organizational change has been broader adoption of EHRs by practices and the Blueprint requirement that practices attempt to content to the VHIE. Vermont has invested substantially in health information technology, creating the Vermont HIT Fund, funded by a small surcharge on paid medical claims. It is an important source of funding for VITL which provides assistance to practices that are adopting EHRs and operates the VHIE. Implementation of health IT in the state has met many challenges, hampering the state's progress toward developing a "learning health care system." There was a strong feeling expressed by most interviewees that the challenges of implementing the VHIE were underestimated. In response to the challenges, a "sprint" process was launched in 2012 to work intensively with select practices on data exchange. Despite these challenges, most practices with whom we spoke felt that movement to their own EHR was positively affecting their care processes and management of their patients that would lead to improved quality of care and lower health care costs.

Vermont estimated Medicare gross savings of \$51,454,051 (\$28,473,051 net of payments to practices) over the 3-year demonstration period. Savings would be achieved through significant reductions in inpatient and ER utilization as well as reductions in the use and costliness of a large number of other services (e.g., mental health services, advanced imaging, major orthopedic procedures, etc.). In the first year of the MAPCP Demonstration, the Blueprint for Health achieved a statistically significant reduction in total Medicare expenditures to generate a net savings of \$9,241,486 or 32% of its net savings goal and an ROI of 5.50. These savings were observed among practices that had previously participated in the Blueprint for Health pilot.

However, we did not observe a reduction in inpatient and ER utilization after the first year of the demonstration. Yet, acute care hospital expenditures were a major driver in the reduction in total Medicare expenditures suggesting that costliness of inpatient care may have decreased. For our second year analyses, we will expand our analyses to examine changes in number of users and costliness of care across a broad set of services to better understand the drivers of the reduction in total Medicare expenditures we have observed and attempt to more closely link the observed reductions with features of the Blueprint for Health. We will report those findings in the second annual report.

CHAPTER 6 NORTH CAROLINA

In this chapter, we present qualitative and quantitative findings related to the implementation of the MAPCP Demonstration in North Carolina, which built on the state's regional Community Care Networks and patient-centered medical home (PCMH) program. We report qualitative findings from our first of three annual site visits to North Carolina, as well as quantitative findings using Medicare fee-for-service (FFS) claims data to report characteristics of beneficiaries and participating practices in the state initiative, descriptive statistics and estimates of the demonstration effects for Medicare payment and utilization outcomes, and estimates of budget neutrality.

For the first round of site visit interviews, which occurred from October 1 through October 3, 2012, four teams traveled across the state covering four networks and geographic regions: Community Care of the Lower Cape Fear in the Wilmington region, AccessCare of Central North Carolina in the Raleigh/Durham region, Community Care Partners of the Northern Piedmont in Vance County, and AccessCare of the Blue Ridge in the Boone region. The focus of the site visits was on early implementation experiences and practice transformation activities that were necessary to join the MAPCP Demonstration. During the site visit, we interviewed providers and other practice staff, nurse care managers, regional Community Care Network leaders, and Community Care of North Carolina (CCNC) staff to learn about practice transformation activities and the quality and effectiveness of the health care they delivered before and after Medicare's entrance. We also met with payer representatives to hear their experiences with implementation and whether the payments to practices were effective in terms of producing desired outcomes or whether modifications are warranted. Last, we met with a patient advocate and a member of a physician organization to learn if they had observed an improved beneficiary experience with care and any changes to the way care is delivered

The chapter is organized by major evaluation domains. *Section 6.1* reports state implementation activities, as well as baseline demographic and health status characteristics of Medicare beneficiaries and characteristics of practices participating in the MAPCP Demonstration. *Section 6.2* reports practice transformation activities. The subsequent sections of this chapter report our findings for the five evaluation domains related to outcomes: quality of care, patient safety, and health outcomes (*Section 6.3*); access to care and coordination of care (*Section 6.4*); beneficiary experience with care (*Section 6.5*); effectiveness as measured through health care utilization, Medicare expenditures, and budget neutrality (*Section 6.6*); and special populations (*Section 6.7*). We conclude this chapter with a discussion of early findings (*Section 6.8*).

6.1 State Implementation

In this section, we present findings related to the implementation of the MAPCP Demonstration and changes made by the state, practices, and payers when Medicare joined its ongoing multi-payer initiative. We focus on providing information related to a subset of the state implementation evaluation questions that lend themselves to being answered in the early part of the MAPCP Demonstration. Specifically, we address the following:

- What are the features of the state initiative?

- What changes did practices and payers make in order to take part in the MAPCP Demonstration and meet the participation requirements? What was involved in making these changes? What challenges did they face?
- What kinds of structural and organizational changes did the state, practices, and payers make to accommodate Medicare's participation in the MAPCP Demonstration and to better serve the needs of Medicare beneficiaries? How did administrative burdens and resource allocations change as a result of Medicare's participation?
- Does Medicare's participation in the MAPCP Demonstration have any spillover effects on the state's Medicaid program or private payers?
- What early lessons were learned?

The state profile in *Section 6.1.1* of this report draws on quarterly reports submitted to CMS by state staff, monthly calls between the state and CMS, the site visit that was conducted in October 2012, as well as other sources including news items and state and federal websites. *Section 6.1.2* presents a logic model that reflects our understanding of the link between specific elements of the MAPCP Demonstration and expected changes in outcomes. *Section 6.1.3* presents key findings gathered from the site visit and describes the implementation experience of state officials, payers, and providers. We conclude the State Implementation section with lessons learned in *Section 6.1.4*.

6.1.1 North Carolina State Profile as of October 2012 Evaluation Site Visit

North Carolina is building upon its regional Community Care Networks and PCMH program to implement the MAPCP Demonstration. The regional Networks evolved from earlier Medicaid programs designed to support primary care practices through per member per month (PMPM) fees paid to networks and practices that agreed to coordinate care and support population health efforts. North Carolina's medical home programs can be traced back to 1983, when the North Carolina Foundation for Advanced Health Programs partnered with the state to create the Wilson County Health Plan. In 1991, North Carolina received a Medicaid 1915(b) waiver to expand the model statewide, creating a primary care case management program (Carolina Access), which led to the current CCNC program.

In partnership with the state, a central network (also known as CCNC) serves as the organization overseeing operations of 14 nonprofit, community-based networks, four of which serve the participating MAPCP Demonstration counties. These networks seek to improve quality and promote appropriate utilization of resources to manage health care costs. CCNC supports primary care practices and hospitals through care coordination, disease and care management, and quality improvement resources. A particular emphasis is placed on managing transitions across care settings and analyzing data to identify the patients that would benefit most from care management efforts. It also includes interventions specifically targeted to individuals with chronic conditions (e.g., diabetes, asthma, hypertension and congestive heart failure).

As part of MAPCP Demonstration, North Carolina has established a multi-payer demonstration that includes Medicaid, Medicare, the state employee health plan, and Blue Cross Blue Shield of North Carolina (BCBSNC). The demonstration launched in October 2011, when

BCBSNC and Medicare joined Medicaid in making payments to practices and four regional CCNC networks in seven rural counties across the state. The state employee health plan, which is administered by BCBSNC, began making payments in January 2012 to participating practices.

State environment. North Carolina's MAPCP Demonstration is a public/private partnership between the North Carolina Department of Health and Human Service's Office of Rural Health and Community Care (NCDHHS/ORHCC), which provides executive leadership, and CCNC, which provides day-to-day operations management. Through a Memorandum of Agreement with CCNC, NCDHHS/ORHCC implements the MAPCP Demonstration. A multi-stakeholder steering committee facilitates decision making among the participants.

North Carolina is also participating in several other initiatives that may impact the MAPCP Demonstration or the comparison group population:

- North Carolina received approval of a Section 2703 Health Home State Plan Amendment in May 2012. The health home program relies on the CCNC infrastructure to deliver enhanced care to eligible individuals with chronic physical health conditions.
- North Carolina had a Section 646 Medicare Quality Demonstration, which authorized Medicare payment for medical home services in 26 counties from 2010 to 2012. Although the service areas did not overlap, some MAPCP Demonstration counties bordered Section 646 Demonstration counties, and some CCNC Networks served both MAPCP Demonstration and Section 646 Demonstration populations.
- First in Health, a multi-payer medical home initiative involving large self-insured employers, most notably GlaxoSmithKline, has been administered by UnitedHealthcare and Aetna. The employers are using the CCNC Networks to facilitate practices' transformation into medical homes and provide their employees with CCNC care coordination services. The First in Health and the MAPCP Demonstration service areas do not overlap.
- North Carolina received an Infrastructure for Maintaining Primary Care Transformation (IMPACT) grant from the Agency for Healthcare Research and Quality (AHRQ) in 2011. Building off an Improving Performance in Practice (IPIP) program, this initiative supports state efforts to enhance primary care coaching and related methods to facilitate practice transformation.
- Medicare & Medicaid electronic health record (EHR) "meaningful use" incentive payment programs are available to eligible providers nationwide; many practices in the MAPCP Demonstration reported participating in "meaningful use" programs. The incentives provide additional financial support for investment in EHRs.
- North Carolina has applied to conduct a State Demonstration to Integrate Care for Dual Eligible Individuals. This proposed statewide demonstration seeks to enhance coordination of primary care, long-term services and supports, and behavioral health services for persons who are dual eligible for Medicare and Medicaid. The

application was submitted to CMS in May 2012 and was outstanding at the time of this reporting period. This demonstration could affect the evaluation of the MAPCP Demonstration due to spillover effects in non-MAPCP Demonstration regions of North Carolina.

Demonstration scope. The North Carolina MAPCP Demonstration is limited to seven rural counties across the state: Ashe, Avery, Bladen, Columbus, Granville, Transylvania, and Watauga. All participating MAPCP Demonstration counties except Bladen border other states. *Table 6-1* shows participation in North Carolina’s MAPCP Demonstration at the end of the first year of the demonstration. North Carolina estimated that 61 practices would join the demonstration. The number of practices actually participating at the end of year 1 (September 30, 2012) was 43, with 138 providers. The majority of the practices were small, with 1 or 2 full-time equivalent (FTE) providers. The cumulative number of Medicare FFS beneficiaries that had participated in the demonstration for at least three months was 26,438.

Table 6-1
Number of practices, providers, and Medicare fee-for-service beneficiaries in the North Carolina MAPCP Demonstration

Participating Entities	Number as of September 30, 2012
MAPCP Demonstration practices ¹	43
Participating providers ¹	138
Medicare fee-for-service (FFS) beneficiaries ²	26,438

NOTE: MAPCP Demonstration practices include only those practices with attributed Medicare FFS beneficiaries, and participating providers are the providers that are associated with those practices. The numbers of Medicare FFS beneficiaries are cumulative, representing the number of Medicare FFS beneficiaries that had ever been assigned to participating MAPCP Demonstration practices or participated in the demonstration for at least three months. MAPCP=Multi-payer advanced primary care practice.

SOURCES: ¹ARC MAPCP Demonstration Provider File; ²ARC Beneficiary Assignment File (SAS Output tab52c.xls 07/30/2014). (See chapter 1 for more detail about these files).

In terms of all-payer participants, the state estimated it would reach 116,473 by the end of the first year. As of September 30, 2012, the state reported 84,860 individuals were either linked to a PCMH (for the Medicaid population) or assigned to a PCMH via an attribution algorithm (for other payers).

The state initiative includes the Medicaid population enrolled with CCNC, Medicare FFS beneficiaries, BCBSNC underwritten members, and members of the state employee health plan. The Medicaid population includes aged, blind, and disabled (ABD) individuals, including those who are dually eligible for Medicare.

Table 6-2 displays the characteristics of participating practices as of September 30, 2012. They were comprised of office-based practices (67%), rural health clinics (24%), and critical access hospitals (9%). Most of these practices were located in rural areas (78%), with the remainder in micropolitan counties.

Table 6-2
Characteristics of practices participating in the North Carolina MAPCP Demonstration as of September 30, 2012

Characteristic	Statistic
Number of practices	43
Number of providers	138
Average number of providers per practice	3
Practice type (%)	
Office based	67
Federally qualified health center	0
Critical access hospital	9
Rural health clinic	24
Practice location type (%)	
Metropolitan	0
Micropolitan	22
Rural	78

SOURCES: ARC Q5 MAPCP Demonstration Provider File and SK&A office-based physician data file. (See chapter 1 for more detail about these files). MAPCP=Multi-payer advanced primary care practice.

In **Table 6-3**, we report demographic and health status characteristics of Medicare FFS beneficiaries who were assigned to participating practices during the first year of the demonstration (October 1, 2011, to September 30, 2012). Beneficiaries with less than three months of eligibility for the demonstration are not included in our evaluation or this analysis. Of the beneficiaries who were assigned to participating practices during the first year of the demonstration, almost half (47%) were between the ages of 65 and 75, one-fifth were under the age of 65, and about one-quarter were between the ages of 76 and 85, with a mean beneficiary age of 70 years. Fifty-eight percent of beneficiaries were female, 1% of participants were urban-dwelling, 27% were dually eligible for Medicare and Medicaid, and 31% were originally eligible for Medicare due to a disability. Less than 1% of beneficiaries had end-stage renal disease or resided in a nursing home during the year prior to their assignment to an MAPCP Demonstration practice.

Table 6-3
Demographic and health status characteristics of Medicare fee-for-service beneficiaries
participating in the North Carolina MAPCP Demonstration from October 1, 2011 through
September 30, 2012

Demographic and health status characteristics	Percentage or mean
Total beneficiaries	26,438
Demographic characteristics	
Age < 65 (%)	20
Ages 65–75 (%)	47
Ages 76–85 (%)	26
Age > 85 (%)	8
Mean age	70
White (%)	81
Urban place of residence (%)	1
Female (%)	58
Medicaid (%)	27
Disabled (%)	31
End-stage renal disease (%)	0.9
Institutionalized (%)	0.4
Health status	
<i>Mean Hierarchical Condition Category (HCC) score</i>	
<i>groups</i>	1.04
Low risk (< 0.48) (%)	27
Medium risk (0.48–1.25) (%)	49
High risk (> 1.25) (%)	24
<i>Mean Charlson Index score</i>	0.83
Low Charlson Index score (= 0) (%)	61
Medium Charlson Index score (≤ 1) (%)	20
High Charlson Index score (> 1) (%)	19

(continued)

Table 6-3 (continued)
Demographic and health status characteristics of Medicare fee-for-service beneficiaries participating in the North Carolina MAPCP Demonstration from October 1, 2011, through September 30, 2012

Demographic and health status characteristics	Percentage or mean
Chronic conditions (%)	
Heart failure	5
Coronary artery disease	11
Other respiratory disease	11
Diabetes without complications	19
Diabetes with complications	3
Essential hypertension	40
Valve disorders	2
Cardiomyopathy	1
Acute and chronic renal disease	7
Renal failure	3
Peripheral vascular disease	2
Lipid metabolism disorders	21
Cardiac dysrhythmias and conduction disorders	10
Dementias	1
Strokes	1
Chest pain	5
Urinary tract infection	5
Anemia	8
Malaise and fatigue (including chronic fatigue syndrome)	4
Dizziness, syncope, and convulsions	5
Disorders of joint	8
Hypothyroidism	7

NOTE: Percentages and means are weighted by the fraction of the year that a beneficiary met MAPCP Demonstration eligibility criteria. Demographic and health status characteristics are calculated using the Medicare Enrollment Data Base (EDB) and claims data for the one-year period prior to a Medicare beneficiary first being attributed to a PCMH after the start of the MAPCP Demonstration. Urban place of residence is defined as those beneficiaries living in Metropolitan or Micropolitan Statistical Areas defined by the Office of Management and Budget (OMB). MAPCP=Multi-payer advanced primary care practice.

SOURCE: SAS Output tab52c.xls 07/30/2014.

We use three measures to assess beneficiaries' health status during the year prior to their assignment to MAPCP Demonstration practices—HCC score, Charlson Comorbidity Index, and diagnosis of 22 chronic conditions. Beneficiaries had a mean HCC score of 1.04, meaning that they were predicted to be 4% more costly in the subsequent year than an average Medicare FFS beneficiary. Sixty-one percent of the beneficiaries had a low (zero) score on the Charlson

Comorbidity Index, indicating that these beneficiaries did not receive medical care for any of the 18 clinical conditions contained within the index in the year prior to their assignment to an MAPCP Demonstration practice.

The most common chronic conditions diagnosed among the Medicare FFS beneficiaries were hypertension (40%), lipid metabolism disorders (21%), (uncomplicated) diabetes (19%), and coronary artery disease (11%).

Practice expectations. North Carolina required participating practices to achieve NCQA Physician Practice Connection Patient-Centered Medical Home (PPC[®] PCMH[™]) recognition within 12 months of joining the demonstration, a standard not required by CCNC prior to the start of the MAPCP Demonstration. Furthermore, participating providers had to be accepted into the BCBSNC Blue Quality Physician Program (BQPP) by the end of September 2013. The BQPP is BCBSNC's medical home program that requires practices to achieve 2008 NCQA PPC[®] PCMH[™] or 2011 NCQA PCMH[™] recognition, and also use electronic prescribing, file claims electronically, complete cultural competency training, and provide expanded access to care.

By September 30, 2012, the state reported that almost all practices had achieved Level 1 to Level 3 NCQA recognition.. This was a marked improvement compared to the beginning of the year when only one practice had achieved Level 1 NCQA PPC[®] PCMH[™] recognition. BQPP acceptance data have not yet been reported.

Support to practices. North Carolina's MAPCP Demonstration uses a multifaceted payment system. Payments vary by payer, practice, and enrollee. Medicare and Medicaid both make PMPM payments to participating practices and regional networks, while BCBSNC makes enhanced FFS payments. The state employee health plan pays networks an annual lump sum based on a 1:40 ratio of FTE nurse care managers to high-risk members. See *Table 6-4* for specific payment information.

The Medicaid PMPM payment varies by the beneficiary's eligibility category, with a higher payment for ABD beneficiaries. Medicaid has continued making payments for dual eligible beneficiaries attributed to a primary care provider in a participating practice as it did prior to the MAPCP Demonstration. Medicare pays for dual eligibles attributed to participating practices for whom Medicaid is not making payments. Medicare's PMPM practice payment varies by level of NCQA PPC[®] PCMH[™] recognition. Between October 1, 2011 and September 30, 2012, demonstration practices had received a total of \$1,938,543 in payments from Medicare for beneficiaries assigned to their practices during the first year of the demonstration.

The exact amount of the fee enhancement paid by BCBSNC is negotiated with each practice and is proprietary. According to BCBSNC, the fee enhancement is equivalent to a minimum of \$1.50 PMPM. A BCBSNC representative meets with providers every six months to demonstrate the PMPM equivalent of the enhanced fees that have been paid. During our site visit interviews, BCBSNC staff noted that the PMPM equivalent of the enhanced fees always exceeds the \$1.50 PMPM minimum.

Table 6-4
North Carolina MAPCP Demonstration payments

Payer	Practice PMPM payment	Network PMPM payment
Medicaid	\$2.50—non-ABD	\$3.72—non-ABD
	\$5.00—ABD	\$13.72—ABD
Medicare	\$2.50—Level 1 NCQA	\$6.50
	\$3.00—Level 2 NCQA	
	\$3.50—Level 3 NCQA	
Blue Cross Blue Shield of North Carolina	\$1.50 minimum [1]	\$2.50 [1]
State employee health plan	[1]	[2]

NOTES: ABD, aged, blind, and disabled; MAPCP, Multi-payer Advanced Primary Care Practice; NCQA, National Committee for Quality Assurance; PMPM, per member per month. [1] PMPM equivalent of enhanced fee schedule as estimated by BCBSNC. [2] For the state employee health plan, networks are paid an annual lump sum based on a 1:40 ratio of full-time equivalent nurse care managers to high-risk members.

North Carolina primary care practices benefit from a strong provider support system, most notably with services provided through the regional CCNC networks. High-risk Medicare and Medicaid patients are identified by the participating networks using a 3M™ risk-based algorithm, HCC score data provided by Medicare, and through physician referrals. Once identified, network staff provides care management and care coordination services for primary care practices within the network's service area. BCBSNC and the state employee health plan developed protocols for their own nurse care managers to refer high-risk patients to CCNC as necessary and appropriate. CCNC network staff (including their nurse care managers and clinical pharmacists) assist practices in managing high-risk patients through education, medication reconciliation, and care coordination. Primary care practices also receive individualized support from quality improvement consultants employed by Area Health Education Centers (AHECs), entities affiliated with the state's medical schools that also serve as federally designated Regional Extension Centers (RECs) to promote the adoption of health information technology (IT).

CCNC provides further support for practices, nurse care managers, and clinical pharmacists through its Informatics Center report site, the Case Management Information System (CMIS), and Pharmacy Home. The Informatics Center and CMIS support health assessment, disease management, health coaching, and workflow management. The Informatics Center includes a number of reports that can be queried, including care gap alerts that identify individuals who have not received recommended services. The Informatics Center also provides real-time hospital admissions data for Medicaid and Medicare enrolled patients and provides feedback reports aggregated at the patient, practice, county, and network levels. The CCNC reports are accessed by practices and networks through an interface called the Provider Portal. Every CCNC practice has a set of reports available for Medicaid, while those that participate in the MAPCP Demonstration have had access to additional all-payer reports that include Medicare data since mid-December 2012. CCNC has also integrated the

RTI-designed practice feedback reports and beneficiary utilization files data into its own provider portal to centralize data for providers.

CMIS is an electronic case management database populated with all-payer claims data and clinical information submitted by nurse care managers in counties covered by the MAPCP Demonstration and the state's 646 Medicare Quality Demonstration. BCBSNC and Medicare claims data for MAPCP Demonstration patients were integrated into the system at the end of 2012.

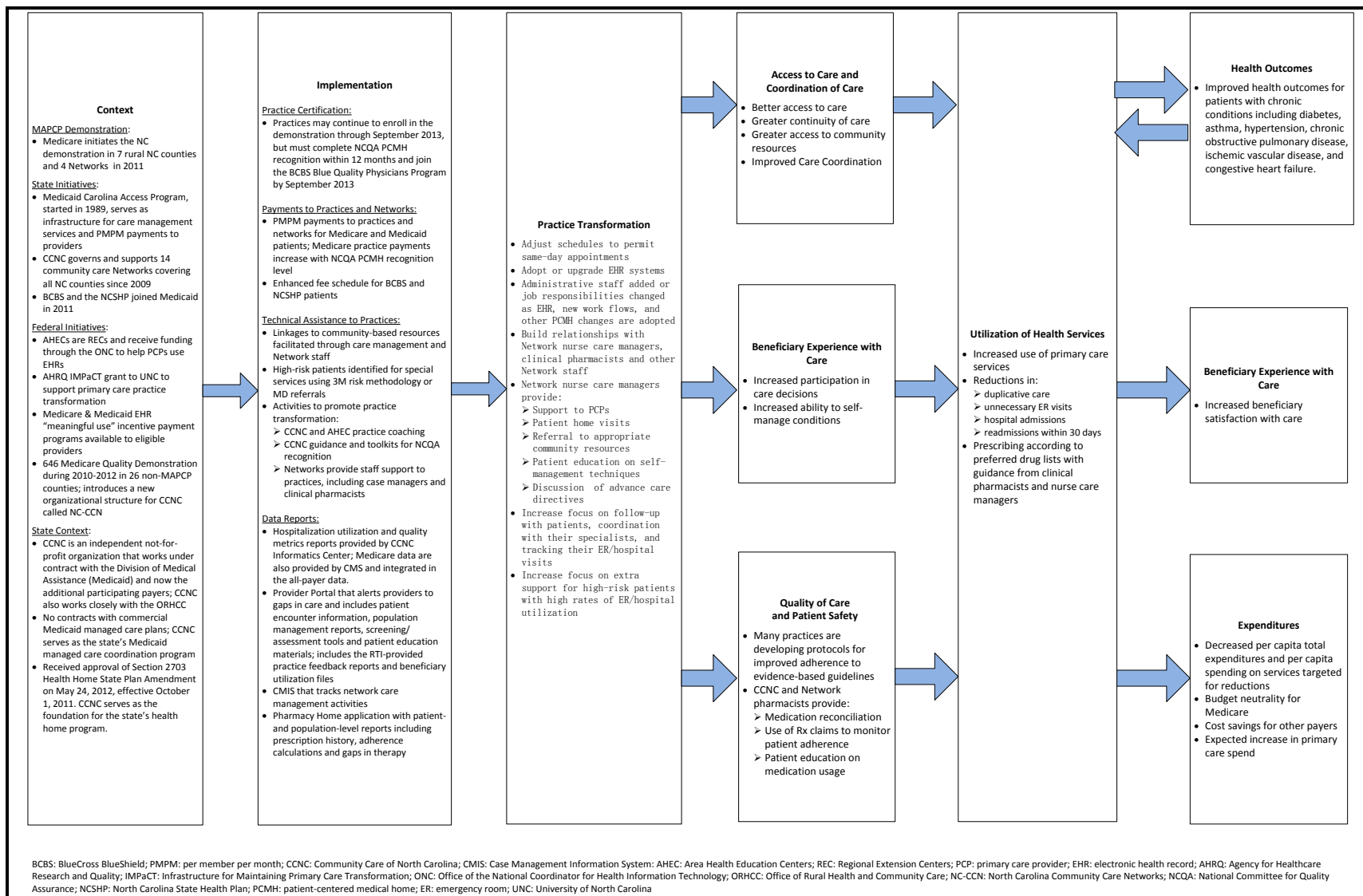
The Pharmacy Home data system serves primary care providers and networks' clinical pharmacists and care managers by recording and aggregating patient information on prescription drug use. It provides patient-level information on pharmacy claims and medication history for point-of-care activities, and can also generate population-based reports to identify patients who may benefit from clinical pharmacy and care management services. The database includes descriptions of clinical pharmacists' activities and findings (identified drug-drug interactions, expired medications, reconciled medications, suggested formulary, or changes to lower cost medication).

To support self-management, CCNC developed a self-management notebook that patients receive upon hospital discharge, which includes provider notes, medication lists, appointment schedules, and educational materials. Network nurse care managers provide educational services and in-person outreach to patients with chronic conditions. Networks also connect patients with community-based services, including those provided by local health departments, community hospitals, Area Agencies on Aging, and Aging and Disability Resource Centers.

6.1.2 Logic Model

Figure 6-1 portrays a logic model of North Carolina's MAPCP Demonstration. The first column in the figure describes the context for the MAPCP Demonstration, including its scope, other state and federal initiatives that affect the demonstration, and key features of state context that affect the demonstration. The next two columns describe implementation of the MAPCP Demonstration, which incorporates a number of strategies to promote transformation of practices to PCMHs. The state initiative employs strategies to: (1) improve access to and coordination of care with Community Care Network support; (2) increase quality of care and patient safety through care management and clinical pharmacy services; and (3) link patients with nurse care managers to improve patient engagement, self-management, and communication with their providers. Successful interventions should promote more efficient utilization patterns, including increased use of primary care services and reductions in emergency room (ER) visits, avoidable inpatient admissions, and readmissions. These changes in utilization patterns are expected to produce improved health outcomes (which can, in turn, reduce utilization), greater beneficiary satisfaction with care, changes in expenditures consistent with utilization changes, and reductions in total per capita expenditures, resulting in budget neutrality for the Medicare program and cost savings for Medicaid, BCBSNC and the state employee health plan.

Figure 6-1
Logic Model for North Carolina MAPCP Demonstration



BCBS: BlueCross BlueShield; PMPM: per member per month; CCNC: Community Care of North Carolina; CMIS: Case Management Information System; AHEC: Area Health Education Centers; REC: Regional Extension Centers; PCP: primary care provider; EHR: electronic health record; AHRQ: Agency for Healthcare Research and Quality; IMPaCT: Infrastructure for Maintaining Primary Care Transformation; ONC: Office of the National Coordinator for Health Information Technology; ORHCC: Office of Rural Health and Community Care; NC-CCN: North Carolina Community Care Networks; NCQA: National Committee for Quality Assurance; NCSHP: North Carolina State Health Plan; PCMH: patient-centered medical home; ER: emergency room; UNC: University of North Carolina

6.1.3 Implementation

This section uses primary data gathered from the site visit to North Carolina in October 2012 and presents key findings from the implementation experience of state officials, payers, and providers to address the evaluation questions described in *Section 6.1*.

External Factors Affecting Implementation

A number of external factors in North Carolina affected implementation of the demonstration. Prior to the demonstration's launch, several payers, including the state employee health plan and BCBSNC, were already exploring the development of care coordination services for their enrollees. The opportunity to participate in a multi-payer demonstration gave them an additional impetus to implement their plans. Having multiple payers participate in the state initiative has not meant that program operations are fully integrated, however. Medicare is using the same organizational structure as the original program established by Medicaid, through which CCNC identifies Medicare and Medicaid patients with complex needs, initiates care coordination, and supplies practices with extensive information on the patient's health status and health care utilization. In contrast, the State Employees Health Plan operates its own care coordination program through a separate vendor—ActiveHealth. CCNC receives referrals for the state employee health plan's most complex patients, but does not have comprehensive information about the patients' health care utilization. At the request of ActiveHealth, CCNC has hired nurse care managers to provide services exclusively to the plan's patients, but they do not participate in CCNC's data systems. BCBSNC also refers members with complex needs to CCNC nurse care managers for care coordination services. Eventually, BCBSNC is expected to contract with CCNC to manage its entire population, including conducting risk stratification to identify candidates for intensive care coordination.

State officials noted that BCBSNC's participation was essential to the demonstration's success. BCBSNC is the largest insurer in the state, and they are the only major commercial insurer in the MAPCP Demonstration counties. Prior to the demonstration, they were already making enhanced payments to providers participating in its BQPP.

The decision to establish the demonstration in seven rural counties was a strategic one. One state official noted that implementing the demonstration in underserved counties provided the greatest opportunity to demonstrate the benefits and improve the health status of beneficiaries: "We felt that we could go in there and move the needle. If you go to an urban area, there are all types of moving parts when you try to figure out what's going on." Limiting the demonstration to seven rural counties also helped ensure the participation of BCBSNC. One interviewee believed that BCBSNC would have been less likely to participate in a larger program, because it might have given them less flexibility to adopt their own initiatives in other parts of the state.

One state official noted that, going forward, the demonstration may be affected by consolidation in the health care market. Large hospital systems are acquiring many of the small practices that have characterized the primary care environment in North Carolina. Instead of establishing relationships with the physician leadership of a practice, the state

initiative now needs to become embedded in larger systems in order to reach primary care physicians. In addition, the state initiative may need to find new ways to work within the context of emerging delivery system reforms such as accountable care organizations.

State budget pressures did not have a discernible impact on implementation of the MAPCP Demonstration in North Carolina.

Evolution of Pilot Implementation with Medicare's Entrance

Structural and organizational changes needed to accommodate Medicare. At the start of the initiative, the state established work groups on every conceivable issue with representation of each payer, resulting in a time-consuming implementation process, but one that achieved consensus among all of the players. Reflecting these difficult negotiations over detailed processes, the state and other payers all reported challenges in developing contracts between practices, networks, and payers that incorporated all of the agreements.

State officials reported that, as an initiative designed to support primary care practices, physician buy-in was necessary for success. Prior to the demonstration, physician buy-in was secured by fostering meaningful engagement between practices and nurse care managers, giving physicians a role in program governance, and establishing networks that can tailor their primary care supports to locally defined needs. One state respondent noted: “Having the physician leadership to do this and an on-the-ground person who can go in and follow up with the practices—there’s no way we can do this without them.”

One particular area of change spurred by the MAPCP Demonstration related to the standards for practices’ participation. The state adopted a requirement that practices achieve NCQA PPC[®] PCMH[™] recognition. Furthermore, the non-Medicare payers agreed that the standards for participation in the BQPP would also apply to all practices in the state initiative. (See *Section 6.1.1.1* for more information about NCQA PCMH recognition and BQPP.) With the adoption of requirements for practice NCQA PCMH recognition within one year after joining the state initiative, some practices had to leave the state initiative because they were unable to meet these new standards. One stakeholder was not convinced that NCQA PPC[®] PCMH[™] recognition was necessary, but felt that the state initiative needed some guidelines. The primary concern with any set of standards is making providers “jump through hoops for the sake of jumping through hoops. It’s incumbent that payers [reward certification through] extra payment or an ease of administrative burden.”

Little changed with the original Medicaid component of the program after the MAPCP Demonstration began because it had been operating the statewide CCNC care coordination program for several decades. As one state official noted, “This is business as usual for Medicaid.” CCNC nurse care managers were accustomed to working primarily with Medicaid patients, so the demonstration did bring a new challenge in meeting the needs of the Medicare population. As a result, the nurse care managers needed training to learn about Medicare benefits, services to which beneficiaries are entitled, and community resources that can provide supports not covered by Medicare.

The 14 networks had been contracting directly with the state but are now subcontractors of CCNC, as of January 2013 (CCNC continues to contract directly with the state).

Attribution and enrollment before and after Medicare's entrance. Stakeholders reported that Medicare attribution took time during the start-up of the MAPCP Demonstration. State officials reported that an intensive process involving the state, CMS, and providers was required to obtain the information needed to reconcile and update information on practices, link providers with specific practices and beneficiaries, and make Medicare payments for care coordination services. Also, the CCNC networks needed to obtain Part B provider numbers before they could receive PMPM payments. Attribution for the Medicaid population, in which beneficiaries choose or are assigned to a primary care provider, did not change as a result of Medicare joining the state initiative.

Changes in resource allocations and financing as a result of Medicare's participation. Medicaid's PMPM payments to the networks and providers did not change when Medicare joined the state initiative. One interviewee noted that BCBSNC was hesitant to align its payment methodology with Medicare or Medicaid's payment methodology because changing the payment system for only seven counties would be financially and administratively burdensome. BCBSNC was able to keep an enhanced fee payment methodology in place, while Medicare and Medicaid used a PMPM, under the condition that overall payments were consistent across the payers.

Spillover effects in Medicaid and private payers as a result of Medicare's participation. Providers, payers, and the state agreed that Medicare participation has helped strengthen the state initiative for all payers and patients, in part through increasing efficiency and cost savings by delivering services on a larger scale. Medicare's entrance as a payer also heightened awareness of the availability of care coordination support.

Impact of data systems in the North Carolina MAPCP Demonstration. One of the central features of North Carolina's PCMH initiative is CCNC's Informatics Center and provider portal to provide practice-based reports, care management, timely interventions, and patient education. Much of the efforts during the first year were focused on data mapping, data file structures, and formalizing contractual agreements for data exchange. One commercial payer agreed to provide a limited data set for assigned high risk patients.

At the time of our site visit, only Medicaid data were part of the Informatics Center; Medicare and BCBSNC claims were added in December 2012. State initiative staff and network nurse care managers noted that the lack of Medicare data was a barrier to determining which beneficiaries needed care coordination. In the interim, data were solicited from practices and hospitals. One network noted that the lack of Medicare data was "the hardest part" of the demonstration thus far.

Impact of technical assistance to practices in the North Carolina MAPCP Demonstration. North Carolina had already provided a great deal of technical assistance to participating practices and networks prior to the MAPCP Demonstration, including a focus on quality improvement and an online toolkit/webinar series designed to help

practices achieve NCQA PPC[®] PCMH[™] recognition. Practices noted that BCBSNC funded an internship program that partnered practices with health care management services students at Appalachian State University that assisted practices during the NCQA recognition process.

No major problems were reported in the implementation or delivery of technical assistance before or after Medicare's entrance. However, the demonstration's new populations required all parties to consider new ways of working with patients to engage them as partners in care coordination and health improvement. For example, Medicare patients were amenable to engagement to manage and improve their health conditions, but effective communications were hampered at times by limitations in sight and hearing. The CCNC nurse care managers had to identify new resources (e.g., community supports for Medicare patients) to address their patients' needs. Although CCNC provided training on serving these new populations, a variety of stakeholders indicated that additional training was needed on aging services and resources available to the Medicare population. One network said, "We need a 'go to' place for resource information on benefits and other resources for Medicare patients."

6.1.4 Lessons Learned

CCNC focused on giving practices resources they value—data on individual patients and their entire patient population, and data comparing their performance with other practices—which laid the groundwork for physician support.

Incorporating data from four payers into a single database has been challenging. The data provided to CCNC by one payer was in a format that was inconsistent with the reporting system. In other instances payer concerns about protecting proprietary data initially limited CCNC's ability to give comprehensive information on all patients, although these barriers are being addressed. State initiative staff recommended that other states designing multi-payer initiatives have data use agreements with payers in place before implementation.

Implementation of the state initiative in North Carolina took longer than expected. Despite sharing common objectives, each payer had different operating procedures that needed to be reconciled. Consensus was achieved through numerous workgroups, an essential but time consuming process. Finalizing contracts between each payer and state stakeholders delayed implementation.

6.2 Practice Transformation

This section seeks to answer evaluation research questions related to describing the features of the practices participating in the North Carolina MAPCP Demonstration, identifying the changes that practices make in order to take part in the demonstration and meet participation requirements, describing technical assistance to practices, summarizing early views on the payment model, and giving an account of experiences with the demonstration thus far. For this report, we have not conducted any quantitative analyses but have relied upon findings from our initial site visit and secondary data provided by the state to answer these research questions.

6.2.1 Changes Practices Made to Join the Demonstration

Key changes that practices made for the MAPCP Demonstration included obtaining NCQA PPC[®] PCMH[™] recognition, hiring or training nurse care managers to meet the unique needs of the Medicare populations, and implementing EHRs and other health information technology (IT) tools. Practices have also received technical assistance on a range of substantive and procedural PCMH topics.

PCMH recognition. Prior to the MAPCP Demonstration, most participating practices did not have NCQA PPC[®] PCMH[™] recognition. Each practice was required to attain at least NCQA PPC[®] PCMH[™] Level 1 recognition within one year of entering the MAPCP Demonstration. Because of previous PCMH initiatives in the state, many practices had already begun to transform their scheduling, treatment, and follow-up of patients, focusing on improving care for specific conditions (often diabetes, heart failure, or asthma). However, the NCQA PPC[®] PCMH[™] recognition process was a major and challenging activity for the practices not yet recognized.

Site visit respondents discussed several changes that practices made to achieve NCQA PPC[®] PCMH[™] recognition, including

- establishing written standards for practice processes and workflows,
- arranging for 24/7 availability of a clinician for patients,
- increasing business hours or establishing referral processes to urgent care facilities,
- modifying appointment access so that at least 30% of the daily slots are available for same-day access,
- using EHRs and CCNC databases and feedback reports to monitor particular patient populations or create a disease registry, and
- focusing on at least three major conditions using care management services.

A number of practices had some PCMH components in place prior to joining the demonstration. For example, 23% of participating practices had already extended business hours (CCNC Baseline Practice Transformation Questionnaire 2012). Staff of several practices shared that they already had 24/7 clinician availability, same-day access policies, or affiliated urgent care centers with extended hours to whom they could refer patients.

The NCQA PPC[®] PCMH[™] recognition process was reported to be especially challenging for some smaller, more rural practices, which typically have few financial and staffing resources available. In the words of one practice staff member, choosing to go through the process meant “putting a lot on some of these small practices.” Several providers and practice staff members noted that they dedicated not only a great deal of their working hours to the NCQA recognition process, but also a significant amount of personal time, in order to meet the deadlines.

On the other hand, larger practices were sometimes able to identify or hire dedicated staff members to lead the practice in seeking NCQA PPC[®] PCMH[™] recognition. In some cases, these staff members eventually became the practice's IT specialists. Recognizing the demanding nature of the NCQA recognition process, CCNC, the local networks, and regional AHECs provided resources and guidance to many practices during the process (see *Section 6.2.2*).

Several respondents from Level 1 practices told us that they plan to pursue higher levels of NCQA PPC[®] PCMH[™] recognition. Current MAPCP Demonstration practices seeking higher recognition levels and those practices applying now to join the demonstration will pursue recognition according to the 2011 NCQA PPC[®] PCMH[™] standards, which several site visit respondents reported to be more demanding than the 2008 standards.

At the time of the site visit, many practices reported that they were also undergoing (or planned to engage in) the BCBSNC BQPP process, which is also required of North Carolina MAPCP Demonstration practices. BQPP participation requires practices to implement electronic prescribing, submit claims electronically, and conduct cultural competency training for all staff. Respondents agreed that many of the changes made for NCQA PPC[®] PCMH[™] recognition, especially EHR implementation, would help them meet the BQPP requirements. Many practices already had electronic prescribing capabilities, but the cultural competency training required by the BQPP is an additional requirement.

Administrative changes. Several administrative changes have taken place in the MAPCP Demonstration practices, due primarily to the adoption of EHRs and other health IT. Specifically, some front office staff were trained to become facile with the EHR, took on new duties, and received new job titles. In several practices interviewed, one staff member became especially knowledgeable about the practice's system and now serves as the EHR "champion" for the practice.

Nurse care managers are an important part of the CCNC infrastructure and have become integrated into practice activities. Two networks hired new geriatric nurses or trained existing nurse care managers to meet the needs of Medicare patients in anticipation of the MAPCP Demonstration. However, this did not occur in all networks. Nurse care managers at another network continued to focus on the Medicaid population and shared that they lacked an understanding of the needs of the Medicare population, qualifications to meet such needs, and knowledge of community resources that might assist them with services in need (See *Section 6.4.1* for more information on nurse care managers).

Health information technology. The most time-consuming change for practices during the first year of the MAPCP Demonstration was the adoption of EHRs. Although most of the practices had electronic prescribing capabilities and some had rudimentary EHR systems, most of the practices interviewed did not have full-featured EHRs before the start of the demonstration. It was a huge challenge for practices to adopt EHRs, while trying to maintain their patient care (especially at the volume needed to maintain profitability).

In early 2012, 69% of MAPCP Demonstration practices in North Carolina reported using an electronic system to record patient clinical information (e.g., blood pressure, allergies, current and active diagnoses, prescription medications) as structured, searchable data (CCNC Baseline

Practice Transformation Questionnaire 2012).⁴⁰ At the time of our site visits, most of the practices had adopted EHRs and experienced many related changes. The front desk staff was managing patient flow better and collecting and entering demographic data. Clinicians were using standard electronic orders and flow sheets, were able to view laboratory results electronically, were engaging in e-prescribing, were following evidence-based guidelines more effectively, and could view patients' past histories in their EHR. The network nurse care managers could access patient records from off-site upon being given access to their assigned practices' EHR systems. Although most EHRs were full-featured at the time of the site visit, only some were able to display hospital inpatient records and none were able to display data from specialists' reports. Several practice respondents noted that they were working (with the assistance of the local network) to coordinate data feeds with their local hospitals.

Most practice staff were positive about the change to EHRs but described it as a major undertaking. One practice cited concerns about whether their vendor was going to be able to stay in business given the consolidation within the industry. Staff of other practices were frustrated that they always seemed to need to buy a new "module" for the EHR every time they wanted to undertake a new initiative, such as moving up a level in NCQA PPC[®] PCMH[™] recognition or meeting the CMS "meaningful use" criteria. One office manager in a small practice explained: "You have this expensive system and think you're all set to go and you're ready to do the next requirement—then, oh by the way, you need to purchase x, y, and z.... You get the feeling that providing stimulus funds for the provider is really providing stimulus funds for these software companies. That is a huge frustration."

Another crucial aspect of health IT in North Carolina is the use of the CMIS, CCNC's dedicated online web portal for nurse care managers. At the time of the site visit, the provider portal gave information only for Medicaid patients, limiting the usefulness of the CMIS for identifying and intervening on other payer populations. To offset this limitation, CCNC provided periodic reports on MAPCP Demonstration patients to practices. This data limitation was addressed by CCNC in December 2012, as the provider portal now includes patient information for Medicare and BCBSNC patients. The provider portal shows claims data including ER visits, imaging, inpatient visits, and pharmacy data. CCNC Informatics staff noted that the medication fill history data, in particular, is extremely helpful to providers.

Many practice staff were aware of the provider portal and reported using it occasionally, but expressed that they were not yet comfortable with it or did not have time during the day to log in frequently. One provider noted that provider portal was "not yet utilized to its maximum capacity." Some suggested that the portal could be more user-friendly. Staff at one practice opted to have the provider portal installed directly into their EHR so that the portal could be entered from any patient chart. However, most practices still struggle to adapt to the use of many discrete systems that contain an overwhelming amount of data.

⁴⁰ The percentage differs from the percentage of practices identified as using an EHR in the SK&A physician file, as reported in Table 6-1.

6.2.2 Technical Assistance

Technical assistance is a key step in the achievement of the North Carolina initiative's goals. CCNC and the local networks have provided considerable technical assistance to practices as they engage in the NCQA PPC[®] PCMH[™] recognition process. One practice's IT specialist noted that the practice "would probably not have got recognition if the network had not guided [them]." In order to help practices with NCQA PPC[®] PCMH[™] recognition, CCNC organized a seminar with NCQA representatives and provided a notebook outlining the PCMH recognition process. The respondents who attended the seminar or used the notebook all agreed that these resources were extremely useful.

In one part of the state, the local network organized a practicum for undergraduate health care management students to assist with the NCQA recognition process, which was "a great help." This internship has grown, due to its success, and the network continues to place students as interns in practices to help with quality metrics and continued PCMH recognition efforts.

Webinars, speakers, and toolkits were provided on both administrative (e.g., EHR purchase) and substantive (e.g., substance abuse treatment) topics. Practice members we interviewed were very positive about these activities. According to our interviews, network representatives were frequent visitors to practices and often stopped by to problem-solve. Some practices described these staff as "basically an adjunct to my practice" and "part of our family." AHECs also provided practice coaching, particularly around EHR implementation.

6.2.3 Payment Supports

In general, there were mixed views on the effectiveness of the varying types of payment supports incorporated into the state's multi-payer initiative. While most providers we spoke with indicated that the new payments had helped, none thought they were sufficient to offset the costs of the program changes and certainly were not paying for the EHRs and the extra time devoted to meeting the requirements of the multi-payer state initiative.

Payment mechanisms and amounts vary by payer. As described in *Section 6.1.1*, Medicaid and Medicare provide a PMPM payment, while BCBSNC is paying an enhanced fee per claim. Practice staff viewed the BCBSNC enhanced fee payment as "the difference between keeping the doors open and not, once you're at NCQA PPC[®] PCMH[™] Level 3." The importance of the increase in BCBSNC payments particularly applies to small, rural practices that do not have the same negotiating power as larger practices. Practices stated that BCBSNC enhanced fee payment is the key motivating factor for the practices to join the state's PCMH initiative.

Practices we interviewed were less enthusiastic about the PMPM payments from Medicaid and Medicare. Some staff noted that higher payment would be helpful for the ongoing investments required of a PCMH to maintain their PCMH recognition status. However, several practices stated that they would not have been able to afford EHR and other structural changes made to become a PCMH without the combined payments from Medicare, Medicaid, and the enhanced BCBSNC reimbursement. Many provider respondents did not carefully track these payments and could only give general estimates. Others knew exactly how much they had received from the respective payers.

Some practices used additional funds for the EHR improvements, better admissions tracking, more contacts and follow-up with patients, and subsidizing a reduced volume of patients. Other practices, however, said they just put the funds into the general practice receipts, not applying them to any one activity.

6.2.4 Summary

Practice staff and nurse care managers reported that the MAPCP Demonstration has gone well overall. As part of obtaining NCQA PPC[®] PCMH[™] recognition, practices progressed in their off-hours availability, same-day availability, and electronic prescribing capabilities, and some adopted EHRs. Several of these practices expressed the opinion that they should not have undertaken NCQA recognition and adoption of an EHR system simultaneously. Practices that adopted or upgraded EHRs reported that they are providing better care because they can use their EHR to monitor the care delivered to patients with specific diseases. Some practice staff suggested that NCQA PPC[®] PCMH[™] recognition at each level should be broken down into several smaller steps, so that they could work on one or two practice changes at a time.

At the time of the site visit, all practices were looking forward to the coming integration of Medicare patients into the CMIS database, “so we can finally get down to the business of reducing readmissions” (as one physician put it). Several practices and nurse care managers were hoping to get utilization (admission, discharge, and ER) data more rapidly from the networks so they could act on them. Going forward, practice staff expressed desire for more rapid access to hospitalization information (rather than relying on information that is days or weeks old) so that they could follow up with patients and other providers more quickly.

Practice staff indicated that they were not optimistic that the programs could be sustained over the long term in the absence of the special financial support they were receiving. Although the enhanced BCBSNC fee payments were widely described as adequate, many practices we interviewed were underwhelmed by what they had received from Medicare and Medicaid. Several practice managers and clinicians also said it was difficult to have different payment schemes and processes for the different payers.

The networks demonstrated some variation in their implementation of the MAPCP Demonstration. Differences among networks were expected, as they are given significant autonomy in the way they implement CCNC, but they may become more uniform as they move to contracting with CCNC rather than directly with the state.

6.3 Quality of Care, Patient Safety, and Health Outcomes

6.3.1 Implementation of State Initiative and Practice Features Expected to Improve Quality of Care, Patient Safety, and Health Outcomes During Year 1

This section of the report focuses on evaluation research questions related to the level of evidence demonstrating that features of the North Carolina PCMH initiative have resulted in practice changes to improve the quality of care, patient safety, and health outcomes for Medicare and Medicaid beneficiaries. We describe findings from our initial site visit.

Quality of care and patient safety interventions in North Carolina's PCMH initiative focus on:

- management of chronic conditions such as diabetes, asthma, hypertension, chronic obstructive pulmonary disease (COPD), ischemic vascular disease, congestive heart failure (CHF), and chronic pain;
- preventive care services through wellness checks, immunizations, smoking cessation, and cancer screenings;
- medication safety and fall prevention;
- prevention of ER visits and hospital readmissions; and
- operational interventions and measures such as outreach and patient engagement, care plan development, follow up with referrals, and palliative care.

Several respondents noted that many practices developed new protocols and started using standards of care and evidence-based guidelines since joining the MAPCP Demonstration and undergoing the NCQA PPC[®] PCMH[™] recognition process. Some practices have evidence-based protocols for asthma, diabetes, and CHF that are built into EHRs and charts. Most of the protocols were developed and distributed to the networks by CCNC. Staff of one network shared that it took a while for some providers to start adhering to the evidence-based guidelines: "Some of them have been doing what they do for 20–30 years and it's hard to change."

Staff at one network shared that they have transformed guidelines such as the 1,000-page National Institutes of Health (NIH) asthma treatment guideline into two-page cheat sheets so that they prompt providers at the point of care into "doing the right thing." To assure that practices are meeting evidence-based guidelines for these diseases, AHECs conduct annual audits and provide results and comparisons with national benchmarks to the practices. Despite the availability of multiple protocols and tools assisting practices with adherence to evidence-based guidelines, several providers identified the need for additional materials targeting additional diseases and processes, such as pain management. Future efforts are likely to expand the use of evidence-based guidelines for additional diseases and processes geared towards the Medicare population.

Practice staff use a variety of tools and patient education techniques facilitated by CCNC, such as a refrigerator magnet that shows symptoms of hyper- and hypoglycemia; the self-management toolkit, where patients keep their medical records so that they and providers know when they last had their HbA1cs, what the value was, and what the range should be; and guides on asthma control. CCNC's self-management toolkit also serves as a place to keep track of all medications from all prescribing providers. The notebook is completed by the patient and reviewed by nurse care managers initially. Afterwards, it can be brought to medical appointments with primary care providers and specialists or ER visits. In supporting practice efforts around diabetes and CHF, nurse care managers at one network use a telephonic health program to help manage diabetes and CHF patients.

North Carolina MAPCP Demonstration practices continue the focus on medication safety through provision of clinical pharmacy and care management services that have been provided to Medicaid patients. Networks have over 15 years of experience in providing clinical pharmacy and care management services for Medicaid and the ABD dual eligible patient populations. One network aims to reduce readmissions and costs related to medication interactions. The state is tracking medication reconciliation and readmission rates.

Clinical pharmacists rely a great deal on the Pharmacy Home system for medication data (see **Section 6.1.1** for more information). In addition, providers at practices with advanced EHRs are receiving alerts for patients that need refills, keeping track of patient's medications, and identifying duplications and drug-drug interactions.

Nurse care managers and clinical pharmacists conduct medication reviews and reconciliations for poly-pharmacy patients with the goal of identifying and rectifying expired, duplicate, or incorrect dosage medications, as well as understanding reasons why patients might be not taking their medicines as prescribed. They also work in tandem to counsel high-risk patients taking multiple medications, and serve as a resource to patients with pharmacy-related concerns. In the fraction of practices with embedded nurse care managers or clinical pharmacists, face-to-face interaction can occur directly following patients' appointments so that unanswered questions and remaining needs can be addressed at that time. When needed, nurse care managers conduct home visits to assess the appropriateness of medications and patient compliance. Clinical pharmacists or pharmacy technicians coordinate prescriptions and communicate identified prescription drug safety issues with primary care providers and specialists.

One of the networks visited has increased its focus on fall prevention since joining the MAPCP Demonstration and is beginning to manage more elderly Medicare patients. Nurse care managers at this network conduct home visits to assess home environments and patients' safety and mobility by identifying potential hazards for patient falls and implementing preventive measures (e.g., inspections for loose rugs, damaged wheelchair ramps, sharp edges on furniture, straight razors used for personal hygiene). In addition, they connect Medicare patients with community resources that are available to assist with needs that are not covered by Medicare to prevent falls and injuries. These include bathroom equipment such as rails, tub bench, and shower chair or home improvements like grab bars or wheelchair ramps that faith-based organizations offer free of charge.

Several respondents noted improvements in patient care, including better patient education; improved documentation; better management of diabetes, asthma, hypertension, and hyperlipidemia; and better coordination of services. Several practices mentioned improving follow-up, keeping records of patient visits to other care settings, and making sure patients receive follow up care as needed. In the words of one provider: "We are able to touch more lives with people who otherwise would be lost in the system... When the elderly person goes back to their home, they don't have to be afraid that no one is there to guide them through the system to keep them from ending up in a worse state than what they started with." One nurse care manager reported that they can have a psychological impact on some patients, as they realize "I'm important and somebody cares about me," and they start to be more conscious of

their own health. Similarly, practices noted improved patient knowledge of their conditions and adherence to physician recommendations for self-management.

However, network-specific differences exist; while nurse care managers representing one network are in the process of applying multiple strategies for preventing patient falls, nurse care managers representing another network shared that they lack basic information about community resources for the elderly in their area and limit their activity to traditional care management functions that historically have been provided to the Medicaid population. Site visit interviewees noted that it is too soon to see changes in health outcomes as a result of quality of care and patient safety initiatives.

6.3.2 Impacts on Quality of Care, Patient Safety, and Health Outcomes

Quantitative data assessing the impacts of the North Carolina MAPCP Demonstration on quality of care, patient safety, or health outcomes on Medicare beneficiaries are not yet available. Future annual analyses and reports will attempt to assess the impact on these outcomes. Beginning with the second annual report, we will include descriptive and, where appropriate, multivariate analyses of process of care quality indicators, EHR Meaningful Use rates, prevention quality indicators, as well as outcomes on mortality, and incidences of serious medical events, using Medicare data. We will also provide results on self-reported health status based on the PCMH-Consumer Assessment of Healthcare Providers and Services (CAHPS) survey.

6.4 Access to Care and Coordination of Care

6.4.1 Implementation of State Initiative and Practice Features Expected to Improve Access to Care and Coordination of Care During Year 1

This section seeks to address evaluation research questions on the level of evidence that the North Carolina PCMH initiative has resulted in more timely delivery of health services, better or enhanced access to a PCMH, and better coordination and continuity of care for Medicare and Medicaid beneficiaries. For this report, we have not conducted any quantitative analyses but have relied upon findings from our initial site visit to answer these research questions.

Participating practices have a number of processes and procedures in place that enhance access to care. Many practices have open access and dedicated time for same-day appointments. Most also have recorded messages providing instructions for after-hours and weekend care. There has been a big change in access to specialty care, particularly in rural areas. One network reported that with the MAPCP Demonstration fees they receive, they now have cardiologists, pain management specialists, and nephrologists come from urban to rural areas once or twice a week to see patients. The staff of one network reported that they wrote policies to refer all after-hours care to the local urgent care center, which has an interoperable medical records system with the PCMHs. Some practice staff reported hiring certified diabetes nurse educators to work with diabetic patients, and instituting a telephonic health program for patients with heart failure.

Practice staff also reported changes related to enhancing care coordination. Several practice staff and nurse care managers reported that the PMPM payments have allowed networks

to be able to hire more nurse care managers, social workers, and behavioral health coordinators, and to place them in new locations. Having nurse care managers located in physician office locations to help coordinate care has improved the practices' ability to schedule appointments with other physicians, connect patients to resources for other health needs, or coordinate and arrange transportation for beneficiaries. Furthermore, some practices hired a care coordinator (not a licensed registered nurse) to schedule specialist appointments, arrange patient transportation, contact community organizations, and perform other more administrative tasks that do not require a nursing license.

One network has hired a palliative care coordinator who was in the process of connecting with physicians and patients to distribute information about her services. Those services will include preparation of advance care directives and living wills with patients and their families. Two networks now have inpatient care managers who receive data from local hospitals when patients are admitted and travel to hospitals to meet with these patients. During the discharge planning process, the inpatient care managers discuss questions such as the following:

- What led to hospitalization?
- What do you need immediately and at home?
- Do you have transportation?
- How will you get to follow-up appointments?
- How do you get and eat regular meals?
- Can we review your medication list?

Several nurse care managers reported that they have put a lot of emphasis on educating patients and connecting them with resources in the community, especially transportation, for which Medicare has less generous coverage than Medicaid. However, the four participating networks vary in the degree to which care managers have knowledge of their community's available resources. One network has a close connection with a senior center that the nurse care managers call to ask if funds are available to pay for a patient's transport to the cancer center and parking fees. They also educate patients on bus schedules and cost. Nurses and social workers in this county sometimes drive patients to appointments. A few practices link patients with food banks and Meals on Wheels if they know that the patient does not have a steady food supply or social or family support nearby. Such community resources are not available or not known to nurse care managers in another network.

Site visit interviewees suggested that nurse care managers have had encounters with more patients due to changes made as a result of the MAPCP Demonstration. Patients have started to contact the nurse care manager first rather than going to the ER when sick. Coordination with the ER has improved and the nurse care managers can get patients in to see the PCMH physicians more quickly than if the patient called the doctor's office directly. As one nurse care manager noted, they see "a real cultural shift in not taking a sick child to the ER." The nurse

care managers reported that they are doing whatever is needed to keep patients out of the ER and, as a result, they hope to see reductions in ER and hospital utilization soon.

NCQA PPC[®] PCMH[™] recognition also impacted practices' access and care coordination activities. A nurse reported that NCQA recognition "has improved the quality of [their] medical home because processes that [the practice staff] were not doing consistently before, they are now." Nurse care managers reported that they are more motivated and more cognizant of the extra coordination required for patients with multiple comorbid conditions. Patients react now to the education they are receiving on access to care, and are starting to respond, for example, by calling for same-day appointments.

Practice staff reported additional relevant changes in care delivery that are ongoing or planned for the near future. Some practices have posters in Spanish and full-time interpreters for bi-lingual beneficiaries. Others reported educating and reminding beneficiaries that they do not have to automatically go to the ER when sick and that they instead can make a same-day appointment with their PCMH. Nurse care managers are seeking out patients with behavioral health issues to help coordinate their medical and behavioral health care. Many practices reported that their nurse care manager is an important "middle man" between the patient and pharmacist for medication reconciliation.

6.4.2 Impacts on Access to Care and Coordination of Care

Quantitative data assessing the impacts of the North Carolina MAPCP Demonstration on access to care and coordination of care on Medicare beneficiaries are not yet available. Future annual analyses and reports will attempt to assess the impact on these outcomes. Beginning with the second annual report we will include descriptive and multivariate analyses of several indicators of access to care and coordination of care. Claims-based indicators will include primary care physician and specialist visit rates; ratio of primary care visits to total ambulatory care visits; percentage of discharges from the hospital for a medical admission with a follow-up visit within 14 days; rate of unplanned readmissions within 30 days after discharge; the percentage of ER visits that do not lead to a hospitalization; and a continuity of care index, which measures the concentration of visits among providers in the practice that is the beneficiary's usual source of care or to whom the beneficiary was referred by a provider in that practice. In addition, we will analyze a measure of care coordination based on responses to the PCMH-CAHPS survey.

6.5 Beneficiary Experience with Care

6.5.1 Implementation of State Initiative and Practice Features Expected to Improve Beneficiary Experience with Care During Year 1

CCNC nurse care managers' activities to connect patients to community resources, enhance access to care, and encourage self-management and active participation in decisions about care are expected to improve beneficiary experience with care. These activities, which are discussed in preceding sections, include connecting patients with transportation services, food banks, and disease-specific education classes; providing CCNC self-management toolkits to patients; and assisting patients with making appointments. Many nurse care managers have recently completed motivational interviewing and palliative care trainings to enhance activities

for advance care planning with aging patients. These activities are particularly important for the engagement of Medicare beneficiaries and their caregivers in long-term care decisions.

Several PCMH-related practice changes will affect patient-provider communication to an extent. The staff of several practices reported that they are working to enhance communication with patients regarding their care, including telephone follow-up on specialist appointments, lab work, test results, and preventative screening reminders.

Several nurse care managers noted that their support and services seem to be empowering patients who otherwise would have no advocate when confronting issues that affect their health care and self-management capabilities. One nurse care manager discussed a patient with COPD for whom she had arranged placing a hospital bed in the home: “The patient was very appreciative and we developed a good relationship, so she felt like she could call me when she needed something.” Another nurse care manager noted that her Medicare patients only feel comfortable talking specifically with her about “tough subjects like depression and incontinence,” after the visit with their doctor.

6.5.2 Impacts on Beneficiary Experience with Care

Quantitative data assessing the impacts of the North Carolina MAPCP Demonstration on beneficiary experience with care are not yet available. In the second annual report, we plan to report our findings from the PCMH-CAHPS survey administered to Medicare beneficiaries.

6.6 Effectiveness (Utilization & Expenditures)

6.6.1 Implementation of State Initiative and Practice Features Expected to Affect Patterns of Utilization and Expenditures During Year 1

According to its MAPCP Demonstration application, North Carolina estimates that Medicare will achieve savings of approximately \$37 million (\$25.2 million net of payments to practices and Networks) over the course of the demonstration. The identified savings are generated from four key areas of intervention: 1) a 5.9% average reduction in hospital readmissions across the three years of the demonstration; 2) a 3.65% average reduction in potentially preventable admissions across the three years of the demonstration; 3) reduced unnecessary ER use, and 4) implementation of EHRs.

Interviewees identified a range of care management activities that they expected would affect utilization and costs in North Carolina MAPCP Demonstration practices. Nurse care managers identified increasing primary care use, care coordination, and working with hospitals to identify high-risk patients to reduce unnecessary utilization. Network managers identified consistent use of evidence-based guideline protocols by providers and the role of clinical pharmacists in medication reconciliation and monitoring patient adherence as important for utilization and cost reductions. Network managers had hired additional nurse care managers, citing the importance of their personal interactions with patients and physicians as key ways to help promote effective care. One nurse care manager reported going to hospitals on a regular basis to participate in meetings with hospital physicians and discharge staff to address excessive ER use and readmissions.

A network manager reported the need to focus efforts on at-risk patients so that they could most effectively reduce unnecessary utilization. They reported using risk scores to identify high-risk patients. Also, CCNC supplies providers with reports on patients with the highest utilization. Although not all providers use these reports, many have increased their focus on patients with high utilization as a result of joining the demonstration.

Most interviewees were looking forward to using claims data for Medicare patients. They were already using claims data for Medicaid patients prior to the MAPCP Demonstration through CCNC and understood its potential effectiveness for Medicare patients.

Interviewees reported two changes implemented prior to the MAPCP Demonstration that have continued: 1) Project IMPACT at the AccessCare network that tracks ER utilization for Medicaid enrollees and identifies patients with the highest ER use; and 2) BCBSNC's BQPP, which incentivizes practices to implement PCMH protocols.

6.6.2 Year 1 Findings on Effectiveness

In this section, we present descriptive statistics and estimates of the demonstration effects from the quarterly fixed effects regression models (*Section 1.2.3, Equation 1.1*) for three Medicare expenditure outcomes (total expenditures, expenditures for short-stay, acute care hospitals, and expenditures for ER visits) and three utilization outcomes (all-cause acute care hospitalizations, ER visits, and 30-day unplanned readmissions). The results are based on 27 quarters of data.

- Baseline period: January 2006–September 2011 (23 quarters). This is the period prior to the start of the North Carolina MAPCP Demonstration.
- Demonstration period: October 2011–September 2012 (4 quarters). This is the first year of the North Carolina MAPCP Demonstration.

The descriptive statistics reported here are weighted averages of the Medicare expenditure outcomes and utilization rates from 2006 through the first demonstration year. The averages are calculated separately for (1) beneficiaries assigned to North Carolina MAPCP Demonstration practices, (2) beneficiaries assigned to PCMHs in the comparison group, and (3) beneficiaries assigned to non-PCMHs in the comparison group. The weights adjust the averages for differences in demonstration eligibility and for observable differences in beneficiary-, practice-, and geographic-level characteristics.

The regression models (see *Section 1.2.3*) were estimated separately using two distinct comparison groups: (1) beneficiaries assigned to PCMHs in the comparison group, and (2) beneficiaries assigned to non-PCMHs in the comparison group. The regression results aim to answer two key evaluation questions:

1. Did the North Carolina MAPCP Demonstration affect expenditures and utilization rates? Specifically, was the North Carolina MAPCP Demonstration associated with slower growth in Medicare expenditures or reductions in utilization, relative to beneficiaries assigned to comparison practices?

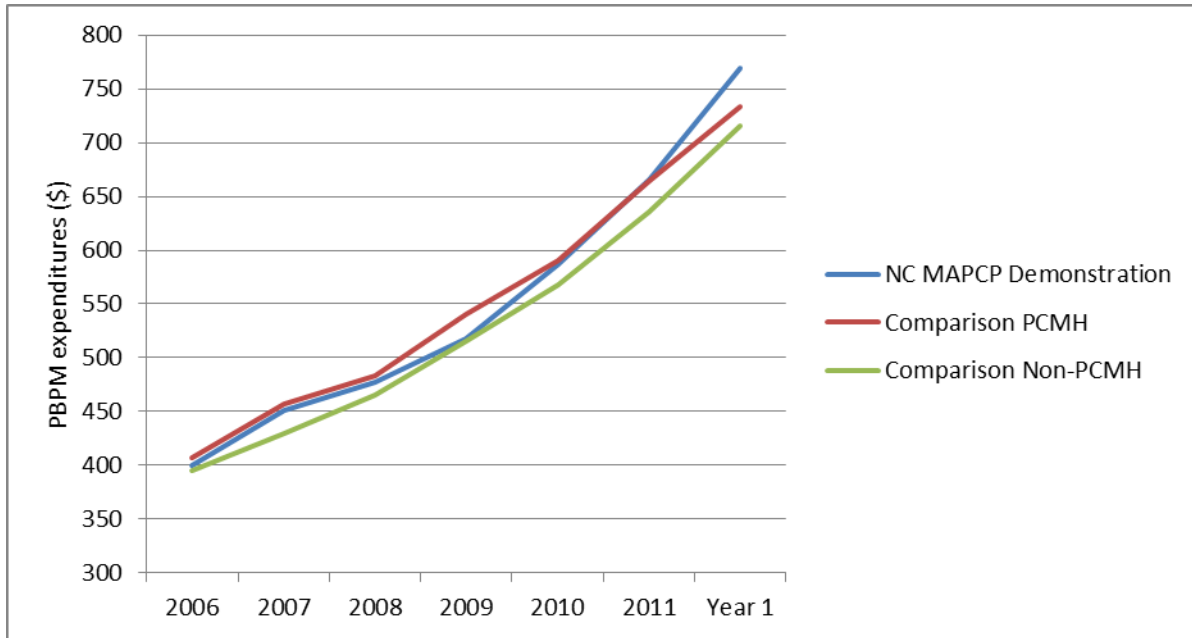
2. Did the demonstration effect differ, depending on whether beneficiaries assigned to North Carolina MAPCP Demonstration practices were compared to either (1) beneficiaries assigned to PCMHs in the comparison group, or (2) beneficiaries assigned to non-PCMHs in the comparison group?

The regression tables presented below will help answer these questions. They contain estimates of the demonstration effects for each quarter, and their standard errors. For expenditures, these are “difference-in-differences” effects. Negative estimates indicate that the growth in expenditures was smaller for beneficiaries assigned to participating practices than for beneficiaries assigned to practices in the comparison group. Conversely, positive expenditure estimates indicate that the growth in Medicare expenditures was larger for beneficiaries assigned to participating practices than for beneficiaries assigned to practices in the comparison group. We also report the average demonstration effect over the entire first year of the demonstration, calculated as a weighted average of the four quarterly estimates (see *Section 1.2.3*).

For the rates (per 1,000 beneficiaries or hospital discharges) of all-cause, acute care hospitalizations, ER visits, and 30-day unplanned readmissions, the quarterly demonstration effects represent, for each demonstration quarter, the (regression-adjusted) change in average utilization among beneficiaries assigned to participating practices, relative to beneficiaries assigned to comparison practices. Negative estimates suggest that during particular demonstration quarters the state initiative was able to lower the utilization rate for beneficiaries assigned to participating practices, relative to beneficiaries assigned to comparison practices. Conversely, positive estimates suggest that the state initiative was associated with increased utilization rates in certain quarters during the demonstration period. As with the expenditure outcomes, we also report the average demonstration effect for utilization rates over the entire first year of the demonstration, calculated as a weighted average of the four quarterly estimates.

Descriptive statistics. Average (PBPM) Medicare expenditures and average utilization rates (per 1,000 Medicare FFS beneficiaries) from 2006 through the first year of the MAPCP Demonstration are shown in *Figures 6-2 through 6-7*. Total Medicare expenditures (*Figure 6-2*), expenditures for short-stay, acute care hospitals (*Figure 6-3*) and expenditures for ER visits (*Figure 6-4*) increased among all beneficiaries between baseline and the demonstration period. However, expenditures appeared to increase more quickly for beneficiaries assigned to demonstration practices relative to beneficiaries assigned to comparison practices. Rates of all-cause, acute-care hospitalizations (*Figure 6-5*) increased over time along with rates of ER visits (*Figure 6-6*) and unplanned readmissions (*Figure 6-7*). The greatest volatility was seen in the trend in rates of unplanned readmissions.

Figure 6-2
North Carolina: Trend in average total PBPM Medicare expenditures from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to North Carolina MAPCP Demonstration practices, comparison PCMHs and comparison non-PCMHs

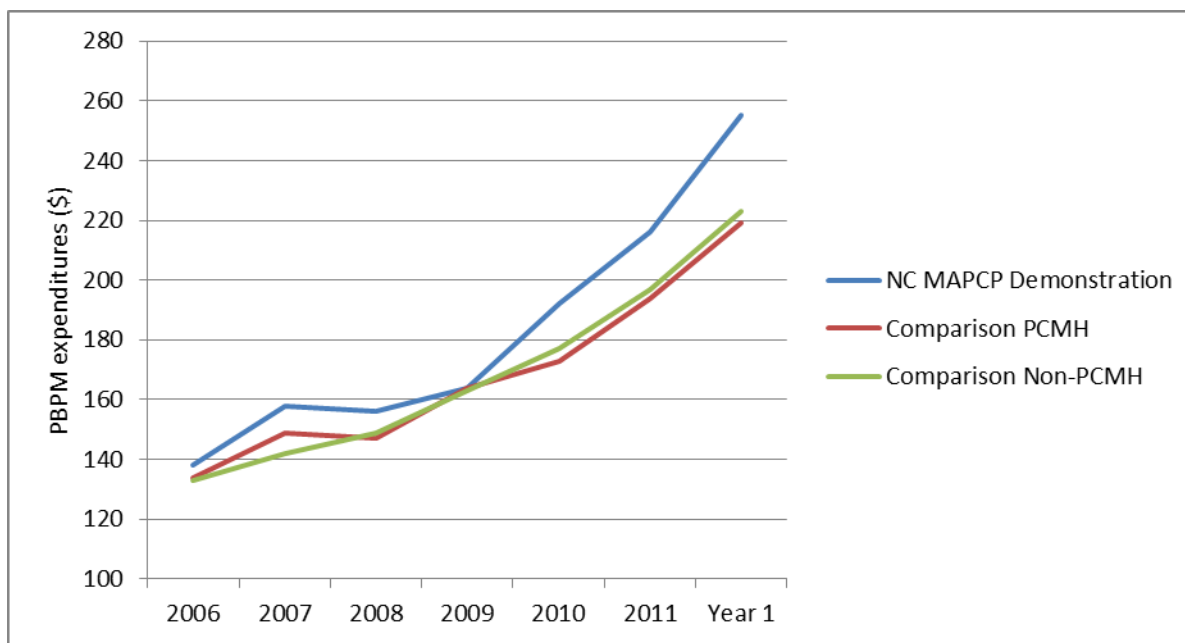


NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; PBPM = per beneficiary per month.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in North Carolina started on October 1, 2011, the 2011 averages were calculated over the period January–September 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period October 2011–September 2012. These amounts do not include fees paid by Medicare as a result of participation in the North Carolina MAPCP Demonstration.

Figure 6-3

North Carolina: Trend in average PBPM Medicare expenditures for short-stay, acute-care hospitals from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to North Carolina MAPCP Demonstration practices, comparison PCMHs and comparison non-PCMHs

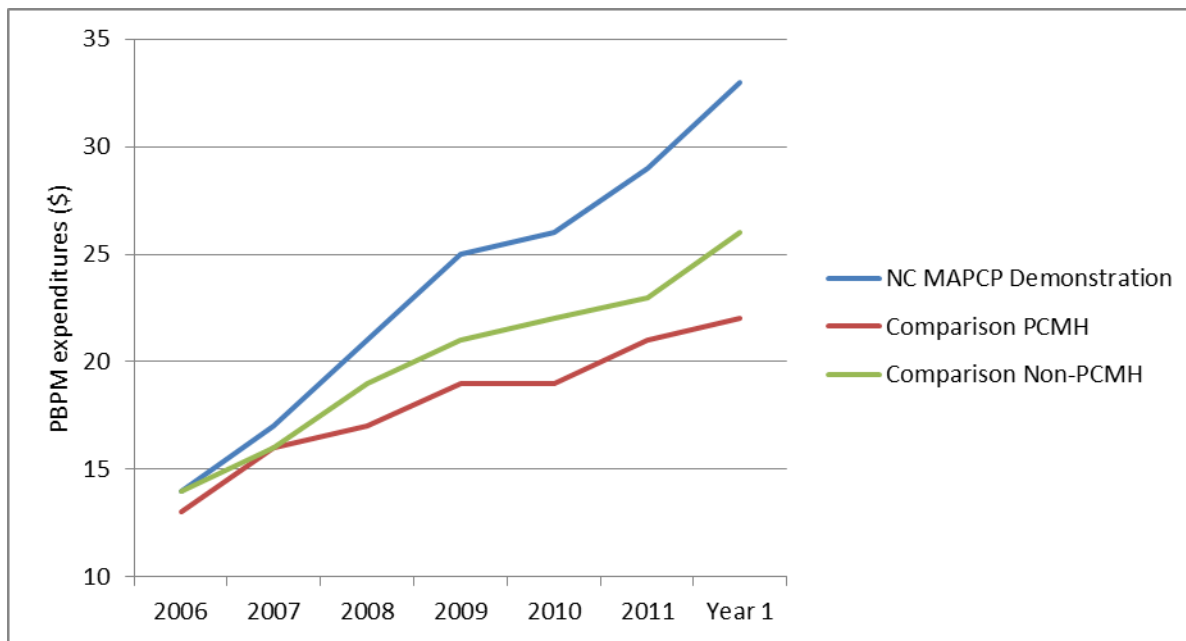


NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; PBPM = per beneficiary per month.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in North Carolina started on October 1, 2011, the 2011 averages were calculated over the period January–September 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period October 2011–September 2012. These amounts do not include fees paid by Medicare as a result of participation in the North Carolina MAPCP Demonstration.

Figure 6-4

North Carolina: Trend in average PBPM Medicare expenditures for ER visits and observation stays from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to North Carolina MAPCP Demonstration practices, comparison PCMHs and comparison non-PCMHs¹

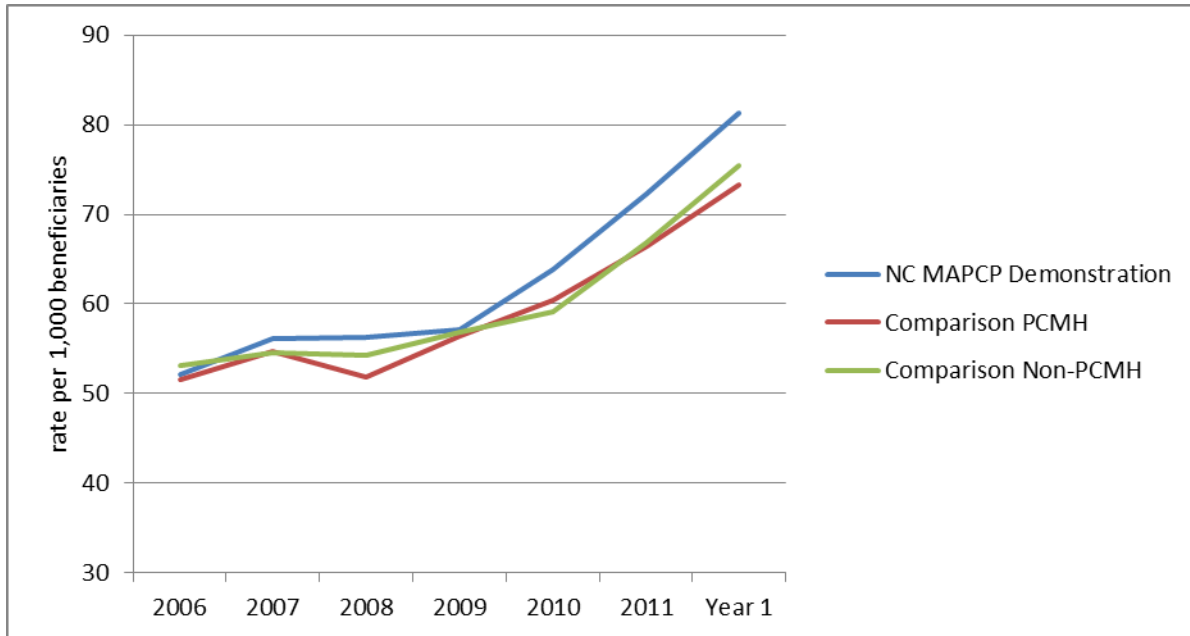


NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; PBPM = per beneficiary per month; ER = emergency room.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in North Carolina started on October 1, 2011, the 2011 averages were calculated over the period January–September 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period October 2011–September 2012. These amounts do not include fees paid by Medicare as a result of participation in the North Carolina MAPCP Demonstration.

¹ This excludes Medicare expenditures for ER visits that led to a hospitalization.

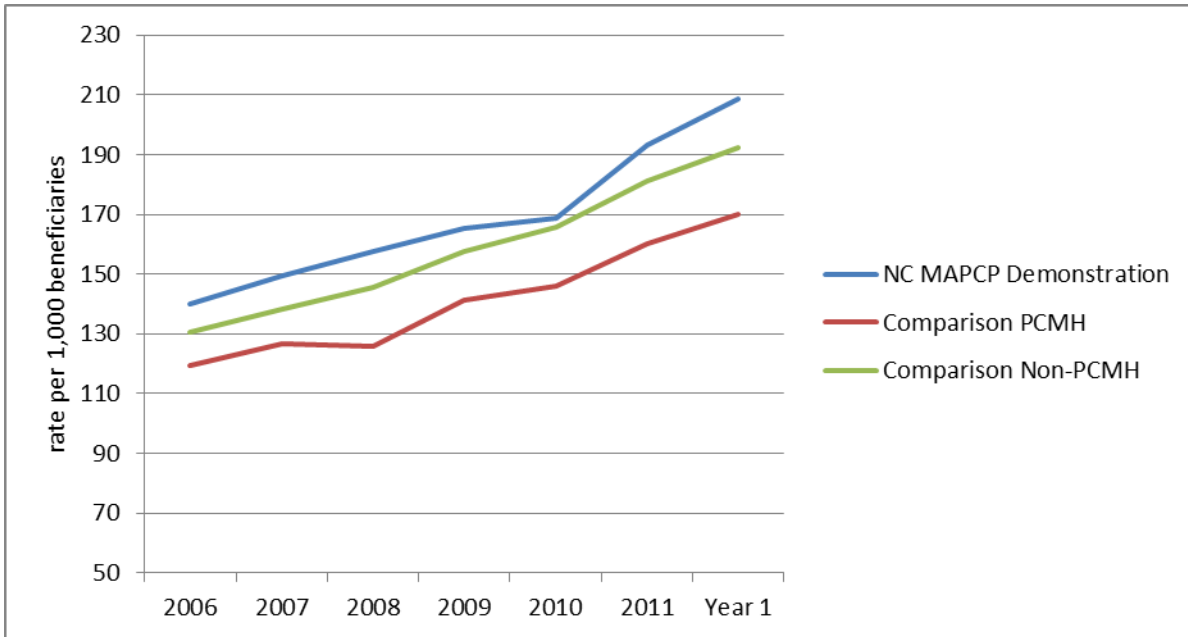
Figure 6-5
North Carolina: Trend in average rate of all-cause, acute-care hospitalizations per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to North Carolina MAPCP Demonstration practices, comparison PCMHs and comparison non-PCMHs



NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in North Carolina started on October 1, 2011, the 2011 averages were calculated over the period January–September 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period October 2011–September 2012.

Figure 6-6
North Carolina: Trend in average rate of ER visits and observation stays per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to North Carolina MAPCP Demonstration practices, comparison PCMHs and comparison non-PCMHs¹

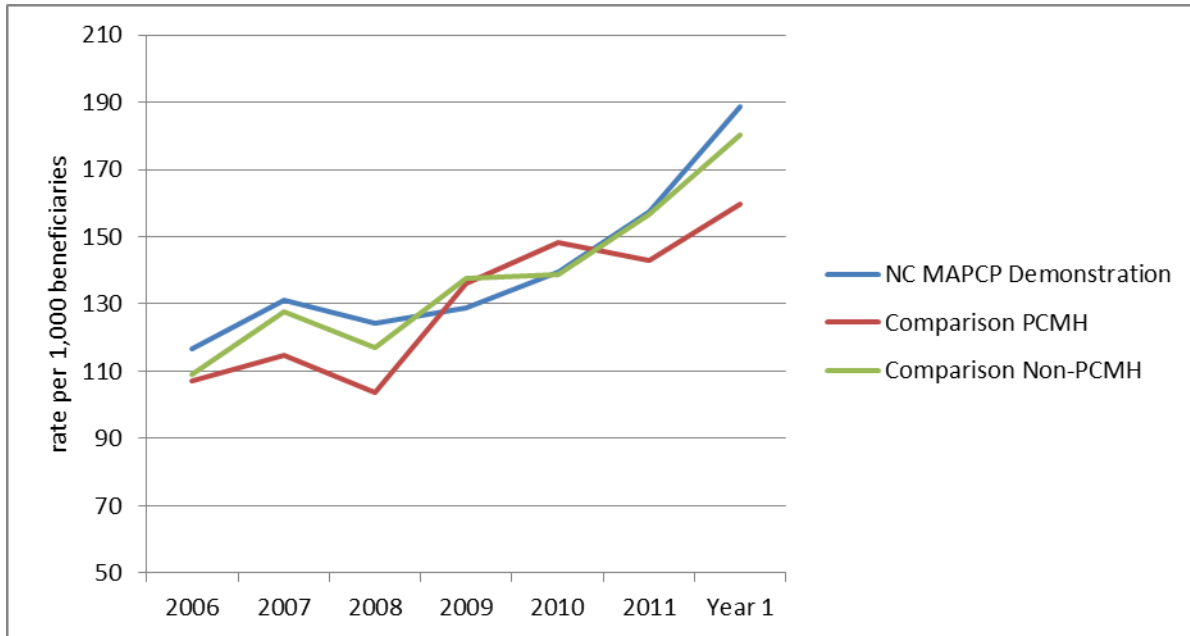


NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; ER = emergency room.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in North Carolina started on October 1, 2011, the 2011 averages were calculated over the period January–September 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period October 2011–September 2012.

¹ This includes ER visits that led to a hospitalization.

Figure 6-7
North Carolina: Trend in average rate of unplanned hospital readmissions per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to North Carolina MAPCP Demonstration practices, comparison PCMHs and comparison non-PCMHs



NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in North Carolina started on October 1, 2011, the 2011 averages were calculated over the period January–September 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period October 2011–September 2012.

Regression estimates. Quarterly difference-in-difference estimates for Medicare expenditures and utilization rates are given in *Table 6-5* and *Table 6-6*. The tables also include weighted averages of all quarterly difference-in-difference estimates to summarize the demonstration effect during the first four quarters of the MAPCP Demonstration.

Table 6-5
North Carolina: Quarterly difference-in-differences estimates for PBPM Medicare expenditures during the first year of the North Carolina MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to MAPCP Demonstration PCMHs vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Quarter	North Carolina MAPCP Demonstration PCMH vs. CG PCMH			North Carolina MAPCP Demonstration PCMH vs. CG Non-PCMH		
	Total (\$)	Acute Care (\$)	ER (\$)	Total (\$)	Acute Care (\$)	ER (\$)
Oct–Dec 2011	58.29*	26.21*	3.42*	71.38*	31.45*	2.54
	(26.14)	(14.43)	(1.60)	(26.46)	(14.50)	(1.75)
Jan–Mar 2012	37.19	24.26	6.37*	35.55	20.11	5.43*
	(38.03)	(20.17)	(1.91)	(32.30)	(17.51)	(1.83)
Apr–Jun 2012	44.26	18.09	5.88*	37.76	14.28	3.99*
	(31.65)	(15.17)	(1.58)	(27.71)	(13.09)	(1.55)
Jul–Sep 2012	63.87*	42.13*	8.22*	54.05*	32.75*	5.83*
	(28.45)	(13.14)	(1.92)	(26.45)	(13.44)	(1.87)
Average ¹	50.36*	27.95*	6.28*	47.36*	23.92*	4.66*
	(27.09)	(12.72)	(1.45)	(23.58)	(11.20)	(1.41)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room.

The table contains the difference-in-differences estimates for Medicare expenditures during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

¹ This is a weighted average of the four quarterly difference-in-differences estimates, where the weights are the numbers of eligible beneficiaries who were assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

Table 6-6

North Carolina: Quarterly demonstration effect estimates for utilization rates (per 1,000 beneficiaries) during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to North Carolina MAPCP Demonstration PCMHs vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Quarter	North Carolina MAPCP Demonstration PCMH vs. CG PCMH			North Carolina MAPCP Demonstration PCMH vs. CG Non-PCMH		
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)
Oct–Dec 2011	5 (3.8)	6 (6.5)	35* (15.2)	6* (3.5)	4 (6.3)	18 (11.2)
Jan–Mar 2012	5* (3.0)	8* (4.9)	38* (16.8)	4 (2.4)	10* (5.3)	20* (9.8)
Apr–Jun 2012	3 (2.6)	5 (5.2)	3 (15.6)	1 (2.5)	–1 (5.1)	15 (12.4)
Jul–Sep 2012	6* (3.2)	12* (6.4)	31* (15.9)	5* (2.7)	9* (5.0)	23* (11.0)
Average ¹	5* (2.3)	8* (4.2)	25* (10.6)	4* (1.9)	6 (3.8)	19* (6.6)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room.

The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

Due to the non-linearity of the regression models for utilization, the demonstration effect estimates do not have a difference-in-differences interpretation.

¹ This is a weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who were assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

From *Tables 6-5* and *6-6* we reach the following conclusions about the impact of the North Carolina MAPCP Demonstration on Medicare FFS beneficiaries during the first year of the demonstration.

- Between the baseline period and the first demonstration year, **total Medicare expenditures** (Part A and B), **expenditures for short-stay, acute-care hospitals** and **expenditures for ER visits** increased faster for beneficiaries assigned to North Carolina MAPCP Demonstration practices relative to beneficiaries assigned to PCMHs and non-PCMHs in the comparison group.
- **Expenditures for short-stay, acute-care hospitals** increased faster among North Carolina MAPCP Demonstration beneficiaries in the first and fourth demonstration quarters relative to both comparison PCMHs and non-PCMHs.
- **Expenditures for ER visits** increased faster among North Carolina MAPCP Demonstration beneficiaries in all quarters relative to PCMH comparison practices and from the second quarter forward relative to non-PCMH practices.
- The rates of **all-cause, acute-care hospitalizations and unplanned readmissions** increased during the first year of the demonstration relative to both comparison groups. The rates of ER visits increased relative to beneficiaries assigned to comparison PCMHs only.

Cohort 1 analysis. The quarterly fixed effects model was also estimated using only data from the beneficiaries in “cohort 1.” These are beneficiaries who were first assigned to a MAPCP Demonstration practice or comparison practice during the first quarter of the demonstration (October–December 2011). As discussed in more detail in *Section 1.2.3*, the purpose of a cohort 1 analysis was to follow more or less stable intervention and comparison groups through the first year of the demonstration, which yields estimates of the demonstration effect that are not affected by rolling entry of new beneficiaries into the MAPCP Demonstration. The full set of cohort 1 estimates for Medicare expenditures and utilization rates are given in *Tables 6A-1 and 6A-2* in *Appendix 6A*, respectively. For convenience we repeat here the average estimates for the first demonstration year in *Table 6-7*. On comparing these estimates with the ones for the full sample in *Tables 6-5 and 6-6*, we note the following differences and similarities.

- Similar to the estimates based on the full sample of beneficiaries, the growth in **total Medicare expenditures, expenditures to short-stay, acute-care hospitals, and expenditures to emergency rooms** between the baseline period and first demonstration year were higher among cohort 1 beneficiaries assigned to North Carolina MAPCP Demonstration practices, relative to cohort 1 beneficiaries assigned to comparison practices.
- Unlike the corresponding estimate based on the full sample of beneficiaries, cohort 1 beneficiaries assigned to North Carolina MAPCP Demonstration practices did not experience an increase in rates of **all-cause, acute care hospitalizations** relative to non-PCMH practices or an increase in **ER visits** relative to PCMH practices.

Table 6-7

North Carolina: Average demonstration effect estimates during the first demonstration year for Medicare expenditures and utilization rates, comparing performance for Medicare beneficiaries first assigned in October–December 2011 to North Carolina MAPCP Demonstration PCMHs, comparison PCMHs and non-PCMHs

Outcome	North Carolina MAPCP Demonstration PCMH vs. CG PCMH		North Carolina MAPCP Demonstration PCMH vs. CG Non-PCMH	
	Average Effect	Standard error	Average Effect	Standard error
Total expenditures (\$)	75.60*	(28.11)	73.42*	(25.16)
Acute care expenditures (\$)	43.43*	(14.43)	40.37*	(13.14)
ER expenditures (\$)	7.51*	(1.76)	5.18*	(1.72)
All-cause hospitalizations (per 1,000 beneficiaries)	5*	(3.0)	4	(2.5)
ER visits (per 1,000 beneficiaries)	6	(5.6)	3	(5.0)
Unplanned readmissions (per 1,000 beneficiaries)	28*	(15.8)	15*	(7.1)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room. The table contains the average demonstration effect estimates and standard errors for the first year of the MAPCP Demonstration, for Medicare expenditures and utilization rates. The average estimate is a weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries in each quarter.

For Medicare expenditures, the demonstration effects can be interpreted as difference-in-differences.

* p<0.10

Summary of evaluation findings. Our analyses of Medicare expenditures and utilization rates during the first year of the MAPCP Demonstration provide some preliminary evidence about the effectiveness of the demonstration for Medicare FFS beneficiaries. The evidence can be summarized as follows.

- There is no evidence that the North Carolina MAPCP Demonstration reduced the growth in total Medicare expenditures between the baseline period and the first year of the demonstration. In fact, total expenditures increased more for beneficiaries assigned to North Carolina MAPCP Demonstration practices than for beneficiaries assigned to comparison practices (PCMH and non-PCMH). This result holds in both the cohort 1 analysis and in the analysis of the full sample of beneficiaries.
- There is no evidence that the North Carolina MAPCP Demonstration reduced the growth in expenditures for short-stay, acute-care hospitals or expenditures for ER

visits. These expenditures increased more for beneficiaries assigned to North Carolina MAPCP Demonstration practices than for beneficiaries assigned to comparison practices (PCMH and non-PCMH). This result holds in both the cohort 1 analysis and in the analysis of the full sample of beneficiaries.

- There is no evidence that the North Carolina MAPCP Demonstration reduced the rate of all-cause, acute-care hospitalizations, ER visits or 30-day unplanned readmissions during the first year of the demonstration.

6.6.3 Medicare Budget Neutrality in Year 1 of the MAPCP Demonstration

In this section, we present estimates of budget neutrality in the first year of the MAPCP Demonstration using the methodology described in *Section 1.2.3*. *Table 6-8* reports the estimated gross and net savings for North Carolina during the first year of the MAPCP Demonstration relative to the PCMH comparison group. Results are presented separately by the four quarters and then summed to produce annual estimates of savings and fees as a whole.

Total gross savings to Medicare was $-\$9,467,541$, reflecting the findings reported earlier that growth in Medicare expenditures was greater among beneficiaries assigned to MAPCP Demonstration practices compared to beneficiaries assigned to PCMH comparison group practices. Total MAPCP Demonstration fees paid out based on eligible quarters were $\$1,908,341$. Medicare's net savings are estimated to be $-\$11,375,882$, or $-\$643.63$ per full-year eligible beneficiary. These findings indicate that the MAPCP Demonstration in North Carolina did not generate cost savings in the first year of the demonstration.

Table 6-8
Estimates of gross savings, fees paid, & net savings, Year 1 of the MAPCP Demonstration, North Carolina

Budget Neutrality Parameter	MAPCP Demonstration Quarter (Year 1)				Year 1 Total	90% Confidence Interval	
	Oct–Dec 2011	Jan–Mar 2012	Apr–Jun 2012	Jul–Sep 2012		Lower	Upper
Difference in quarterly expenditures per beneficiary	\$199.40**	\$64.19	\$108.38	\$185.61**	\$557.58	—	—
Eligible beneficiary quarters	11353	18364	20478	20503	70698	—	—
Total gross savings	–\$2,263,788	–\$1,178,785	–\$2,219,406	–\$3,805,562	–\$9,467,541*	–\$18,796,955	–\$138,304
Total MAPCP Demonstration fees	\$303,789	\$491,308	\$556,139	\$557,105	\$1,908,341	—	—
Net savings	–\$2,567,577	–\$1,670,093	–\$2,775,545	–\$4,362,667	–\$11,375,882	—	—
Average expenditures (comparison group)	\$2,116	\$2,247	\$2,282	\$2,144	\$8,789	—	—
Total expenditures (comparison group)	\$24,022,948	\$41,263,908	\$46,730,796	\$43,958,432	\$155,976,084	—	—

NOTES:

*p<.10; **p<.05; ***p<.01

Difference in quarterly expenditures per beneficiary: Estimated difference in average Medicare Part A and B expenditures between beneficiaries assigned to North Carolina MAPCP Demonstration practices and those assigned to PCMHs in the comparison group, excluding beneficiaries with less than 3 months of demonstration eligibility.

Eligible beneficiary quarters: Sum of participating beneficiaries' fractions of quarters eligible to participate in the MAPCP Demonstration, excluding beneficiaries with less than 3 months of eligibility.

Total gross savings: Combined savings effect per beneficiary times the number of eligible beneficiary quarters. Savings are the negative of the expenditure difference. Positive savings indicates that the intervention group's expenditures increased less than the comparison group's expenditures. Negative savings indicate that the intervention group's expenditures increased more than the PCMH comparison group's expenditures.

Total MAPCP Demonstration fees: Sum of MAPCP Demonstration fees, excluding fees paid on behalf of beneficiaries with less than 3 months of eligibility.

Net savings: Gross savings minus total MAPCP Demonstration fees.

Average expenditures (PCMH comparison group): Medicare expenditures per beneficiary in the comparison group.

Total expenditures (PCMH comparison group): Average expenditures per beneficiary times the number of North Carolina MAPCP Demonstration beneficiaries' eligible quarters.

SOURCE: Medicare claims January 1, 2006–September 30, 2012

6.7 Special Populations

6.7.1 Targeting of Special Populations and Tailored Interventions During Year 1

North Carolina’s demonstration does not target any particular special population for special interventions or services. Care management is particularly focused on high-risk subpopulations, including people at high risk for readmission, people with multiple chronic conditions, people with polypharmacy issues, and patients in care transitions. Because there is overlap between patients in care transitions, patients at risk for readmission, and patients with multiple chronic conditions, these high-risk groups are likely to receive high levels of care management services and, therefore, may derive more benefit than the average patient in the demonstration. Because Medicare beneficiaries often have many conditions or characteristics that make them high-risk subpopulations, the nurse care managers report that they take more of a “whole gamut” approach, rather than having any specific interventions for special populations in North Carolina.

When our site visit took place, interviewees believed it was too early to determine the effects of the demonstration on complex patients with multiple conditions or multiple medications, as care managers had only been linked to or embedded in practices for a short time. There was anecdotal evidence that some patients with multiple medications are being managed better so that polypharmacy issues do not arise, which may in turn prevent unnecessary ER visits, hospital admissions, or readmissions.

6.7.2 Impacts on Special Populations

Quantitative data assessing the impacts of the MAPCP Demonstration on special populations are not yet available. In future reports, we plan to report our findings on the impacts of the demonstration on special populations as defined by each state initiative or special populations of policy interest.

6.8 Discussion

The MAPCP Demonstration in North Carolina is building on the model established by CCNC and used with Medicaid beneficiaries since 1980s. Cooperation among multiple payers and entities was critical during this early phase of the state initiative, and some early challenges have been resolved.

Under the MAPCP Demonstration, practices in North Carolina have continued primary care quality of care and patient safety interventions such as focusing on medication safety and adopted new interventions such as falls prevention. Practices have also made changes to enhance access to care and coordination of care by expanding access or better coordination of discharge planning, care transition, and greater use of care managers.

As Medicare joined the existing Medicaid PCMH program, payers worked through a time-consuming and difficult process of agreeing to common standards and operational approaches. Though difficult, this process likely was facilitated by high-level agreement as to the value of PCMH. BCBSNC had already begun making enhanced payments to providers participating in its PCMH program prior to the MAPCP Demonstration, and the state employee

health plan had already considered using CCNC's networks as a mechanism for care coordination. Thus, the MAPCP Demonstration provided the impetus for consolidating efforts across payers. Although similarities across the payers exist, program operations across the four payers are not fully integrated.

While the PMPM payments to practices from Medicaid and Medicare mitigate the financial burden of practice transformation to a degree, practice respondents agreed that the BCBSNC enhanced fee schedule offers a more significant increase in reimbursement to providers in the small, rural practices that are the majority in this state initiative. Some practices report specific uses for the Medicare-generated revenues that they received (e.g., EHR improvements, subsidizing a reduced volume of patients), while other practices just put the revenues into general operating funds.

Practices also have benefitted from an array of non-financial assistance from CCNC and their local networks. Practice staff interviewed during the site visit unanimously expressed that materials and guidance from CCNC or their network were valuable for the NCQA recognition process and continue to be an important resource for their ongoing work. In addition, CCNC has successfully expanded its care management and clinical pharmacy models to serve Medicare patients.

The most time consuming change for practices during the first year of the MAPCP Demonstration was the adoption or expansion of EHRs. This has been an important facilitator for many other PCMH-related practice process changes regarding care coordination, quality of care, and patient safety. However, further integration between CMIS, CCNC's dedicated online web portal for nurse care managers, and practice EHRs may be needed, as having to log on to separate systems was identified as a barrier to frequent and consistent use of the portal by practice staff.

A related early challenge was that case management referrals and data flow from multiple payers were not part of CMIS; however, CCNC integrated all Medicare and BCBSNC claims data into the CCNC Informatics Center and the CMIS at the end of 2012. The State Demonstration to Integrate Care for Dual Eligible Individuals will also likely increase Medicare data availability for CCNC. Providers and nurse care managers are looking forward to increased data access and expect that this will enable them to have more impact on non-Medicaid patients than was previously possible.

The rural environment of North Carolina has also presented some challenges in implementation of the MAPCP Demonstration. The majority of MAPCP Demonstration practices have one or two providers, few financial and staffing resources, and historically low reimbursement rates due to a lack of negotiating power. Patients in these areas are accustomed to poor access and confront a wide range of geographical, social, and financial barriers in seeking care. Literacy may also be an issue for elderly patients. Despite the shortage of primary care providers and a cultural mistrust of "outsiders" in some demonstration regions, CCNC and its nurse care managers have been able to strengthen relationships with providers and patients through local provider network leadership and by hiring nurse care managers native to the area that they serve. However, respondents agreed that there is a dire lack of behavioral health providers and resources in these communities.

Despite the structural changes that have been made within the participating practices and the health system that surrounds these practices to improve access to and continuity of care, patient safety and quality of care, these efforts have not translated into lower rates of growth in Medicare expenditures or acute care utilization to date. Many practice and network respondents emphasized that much effort was spent on practice transformation and building capacity during the first year. We observe increases in Medicare expenditures and acute care utilization among the full set of Medicare beneficiaries. However, a subset analysis did suggest that participating practices had more success in reducing the rate of hospitalization and ER visit growth among Medicare beneficiaries who were early entrants into the MAPCP Demonstration compared with performance of beneficiaries who joined the demonstration later in the first year.

The practice and network staff interviewed showed great motivation and commitment to their MAPCP Demonstration efforts. As practices pursue entrance into the BQPP and possibly the 2011 NCQA PPC[®] PCMH[™] recognition standards, many noted that they are prepared for these next steps. However, one state staff member captured the thoughts of many respondents when discussing goals for the upcoming year now that many practices are recognized PCMHs: “It’s going to take reinforcement, with ‘You’re a medical home now. How are you going to use these tools? How do you keep it going?’” Many practices plan to turn their focus to quality, safety, and outcomes improvements that they will try to achieve through using their newly-established PCMH tools like EHRs, evidence-based protocols, data feeds, care management, and clinical pharmacy.

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CHAPTER 7 MINNESOTA

In this chapter, we present qualitative and quantitative findings related to the implementation of the Health Care Homes (HCH) initiative, Minnesota's multi-payer initiative. We report qualitative findings from our first of three annual site visits to Minnesota, as well as quantitative findings using Medicare fee-for-service (FFS) claims data to report characteristics of beneficiaries and participating practices in the state initiative, descriptive statistics and estimates of the demonstration effects for Medicare payment and utilization outcomes, and estimates of budget neutrality.

For the first round of site visit interviews, which occurred from October 10 through October 12, 2012, three teams traveled to the Twin Cities of Minneapolis and St. Paul and surrounding areas; we conducted follow-up interviews by telephone with key informants in harder-to-reach locations. The focus of the site visits was on early implementation experiences and practice transformation activities that were necessary to join the MAPCP Demonstration. We interviewed health care providers (e.g., physicians, nurse practitioners, nurses) and administrators from six HCHs to learn about the effects of the state policies on their practice transformation activities and the quality and effectiveness of the health care they delivered before and after Medicare's entrance. We met with key state officials involved with the implementation of the MAPCP Demonstration to learn how the state's HCH initiative (including the state-developed practice certification standards, technical assistance to practices, and multi-tiered payment model) was developed and implemented, and how specific performance goals were established. We also met with payers to hear their experiences with implementation and thoughts on whether the payments to practices were effective in terms of producing desired outcomes or whether modifications were warranted. Lastly, we met with patient advocates and provider organizations to learn if they had observed an improved beneficiary experience with care and any changes to the way care is delivered.

This chapter is organized by major evaluation domains. *Section 7.1* reports state implementation activities, as well as baseline demographic and health status characteristics of Medicare beneficiaries and characteristics of practices participating in the HCH initiative. *Section 7.2* reports practice transformation activities. The subsequent sections of this chapter report our findings for the five evaluation domains related to outcomes: quality of care, patient safety, and health outcomes (*Section 7.3*); access to care and coordination of care (*Section 7.4*); beneficiary experience with care (*Section 7.5*); effectiveness as measured through health care utilization, Medicare expenditures, and budget neutrality (*Section 7.6*); and special populations (*Section 7.7*). We conclude this chapter with a discussion of early findings (*Section 7.8*).

7.1 State Implementation

In this section, we present findings related to the implementation of Minnesota's HCH initiative and changes made by the state, practices, and payers when Medicare joined their ongoing multi-payer initiative as part of the MAPCP Demonstration. We focus on providing information related to a subset of the state implementation evaluation questions that lend themselves to being answered in the early part of the MAPCP Demonstration. Specifically, we address the following:

- What are the features of the state initiative?
- What changes did practices and payers make in order to take part in the HCH initiative and meet the participation requirements? What was involved in making these changes? What challenges did they face?
- What kinds of structural and organizational changes did the state, practices, and payers make to accommodate Medicare’s participation in the HCH initiative and to better serve the needs of Medicare beneficiaries? How did administrative burdens and resource allocations change as a result of Medicare’s participation?
- Does Medicare’s participation in the HCH initiative have any spillover effects on the state’s Medicaid program or private payers?
- What early lessons were learned?

The state profile in *Section 7.1.1* of this report draws on a variety of sources, including: quarterly reports submitted to CMS by Minnesota HCH initiative project staff; monthly state/CMS calls; news articles; state and federal websites; and the site visit that was conducted in October 2012. *Section 7.1.2* presents a logic model that reflects our understanding of the link between specific elements of the HCH initiative and expected changes in outcomes. *Section 7.1.3* presents key findings gathered from the site visit and describes the implementation experience of state officials, payers, and providers. We conclude the State Implementation section with lessons learned in *Section 7.1.4*.

7.1.1 Minnesota State Profile as of October 2012 Evaluation Site Visit

The Minnesota HCH initiative, under the auspices of the Minnesota Department of Health and the Minnesota Department of Human Services, is a cornerstone of the state’s comprehensive health reform enacted in 2008 and is intended to transform Minnesota’s primary care delivery system to improve population health, improve patients’ experience of care, and reduce per capita costs of care. Prior legislation established HCHs to serve complex populations in public programs. The HCH initiative of 2008 significantly builds upon the initial design by mandating participation of Medicaid, the state employee health plan, and certain private insurers, and by creating multi-payer-supported, state-certified HCHs throughout the state. Medicare joined the state initiative on October 1, 2011.

State environment. Minnesota’s 2008 health reform legislation required, among other reforms, development of certification standards for HCHs, care coordination payments from both public and private payers, provider reporting of standardized quality measures, use of all-payer encounter data for “provider peer grouping” to enable informed consumer choice, and definitions for at least seven “baskets of care” with quality measures for each type of care episode. Development of certification standards for HCHs was undertaken by the Minnesota Department of Health, while the Minnesota Department of Human Services was involved in developing a multi-tiered payment methodology (described below).

Minnesota's primary care providers are often part of large, integrated health systems or multi-specialty group practices that include nationally recognized health care leaders such as the Mayo Clinic and HealthPartners. Only non-profit health plans are permitted by law to operate fully insured products in the state. Self-insured employer plans, not subject to much of state law, cover roughly 40% of the state's population and are not required to participate in the HCH initiative. Although self-insured plans are not required to make payments, the state expects some of these plans to eventually decide to participate voluntarily.

The state is encouraging the adoption and use of health information technology (IT) through many policies and activities. For example, state law requires all hospitals and other health care providers to have an interoperable electronic health record (EHR) system in place by 2015. State law also requires health care providers to electronically submit data on quality measures to Minnesota Community Measurement, a multi-stakeholder organization founded by health plans. Health plans and third party administrators also must submit data to a multi-payer claims database. To become certified as a HCH, practices must have searchable electronic registries.

Minnesota has several relevant programs operating in the demonstration area and across the state that may affect health outcomes for participants in the demonstration or in the comparison population:

- A Section 646 Medicare Health Quality demonstration related to advanced care planning operates in four southeastern Minnesota counties. These counties are precluded from participating in the MAPCP Demonstration, but may receive HCH payments from payers in the state other than Medicare. Mayo Clinic is located in one of these counties.
- A three-year Systems Integration Grant involving the Aging Services Division of the Minnesota Department of Human Services and the regional Area Agencies on Aging aims to build closer connections between the HCHs and aging services.
- A Beacon Community grant to eleven counties in the southeast region of the state focuses on connecting participating providers' EHRs.
- Minnesota's Institute for Clinical Systems Improvement (ICSI), a nonprofit organization dedicated to improving health care quality, launched a "RARE" ("Reducing Avoidable Readmissions Effectively") campaign, which has participation from a number of hospitals and health systems across the state. The initiative's stated goal was to prevent 4,000 avoidable readmissions within 30 days of hospital discharge between July 1, 2011, and December 31, 2012. Participating hospitals are adopting Eric Coleman's care transitions model for Medicare beneficiaries at risk of readmission within 30 days, which involves hospital-sponsored nurses making follow-up calls to recently discharged patients.

In addition, several initiatives that had yet to be implemented at the end of Minnesota's first year of the MAPCP Demonstration but have the potential to have future impacts on practices and patients in Minnesota.

- Minnesota has been awarded a contract through CMS’s State Demonstration to Integrate Care for Dual Eligibles to design a model for integrating Medicare and Medicaid financing and delivery of care for this population.
- CMS’s Innovation Center announced that Minnesota’s Metropolitan Area Agency on Aging had received approval to participate in CMS’s Community-based Care Transitions Program in August 2012. The Agency will work with Hennepin County Medical Center, North Memorial Medical Center, and the CareChoice nursing home consortium to offer care transition services to effectively manage Medicare patients’ transitions and improve their quality of care.
- CMS approved the state Medicaid program’s Accountable Care Organization (ACO)-style Health Care Delivery Systems demonstration, now called the Integrated Health Partnerships demonstration, in August 2012. This demonstration will allow groups of providers and integrated delivery systems to become eligible for shared savings starting in 2013.
- The state was awarded a CMS State Innovation Model “testing” award in 2013, which is allowing the state to expand its health information exchange (HIE) and health IT infrastructure, develop a workforce of community health workers and care coordinators, and support primary care physicians who wish to transform their practices into HCHs.
- In 2009, Minnesota’s legislature directed the Minnesota Board on Aging to establish an Alzheimer’s Disease Working Group to make policy and program recommendations to the legislature to prepare the state to meet the challenges of the disease. This group, now called Prepare Minnesota for Alzheimer’s 2020, continues to monitor progress on legislative actions, coordinate implementation of Alzheimer’s-related policy changes, and examine the HCH capabilities needed to effectively serve this population.

Demonstration scope. *Table 7-1* shows participation in Minnesota’s MAPCP Demonstration at the end of the first year of the demonstration. For purposes of our evaluation, we consider practices that became certified as a HCH and were *eligible* to receive MAPCP Demonstration payments – regardless of whether they actually received MAPCP Demonstration payments – as “participating” in the MAPCP Demonstration. Although only a small share of eligible HCH practices had chosen to submit claims for MAPCP Demonstration fees as of the end of the first year of the MAPCP Demonstration (September 30, 2012), both the state staff leading Minnesota’s HCH initiative (who conducted in-depth site visits to all practices seeking certification) and the evaluators of this state’s initiative (who interviewed a sample of practices who were and were not receiving MAPCP Demonstration payments) both believe it is accurate to think of practices as “participating” in the HCH initiative even if they did not receive MAPCP Demonstration payments. This is because: 1) practices had transformed the way their practice delivered care, including hiring dedicated care coordinators and offering 24/7 access to care, regardless of whether they were receiving Medicare MAPCP Demonstration payments, 2) practices were usually receiving enhanced HCH revenues from private payers that were at least

partially covering the cost of the transformations they had made to their practice, and 3) practices tended to engage in enhanced care coordination activities for all of their patients, regardless of payer.

The number of practices that were certified as an HCH and located in an MAPCP Demonstration-eligible county, and therefore participating in the MAPCP Demonstration for purposes of our evaluation, was 121 as of September 30, 2012, and the number of participating providers at these practices was 1,027. The cumulative number of Medicare FFS beneficiaries that had been cared for by a participating practice for at least three months was 65,612.

Originally, the state had hoped to have 250 practices certified and receiving monthly care coordination payments through the statewide MAPCP Demonstration by the end of CY 2012. However, only 160 practices were certified as HCH practices and eligible to bill for Medicare MAPCP Demonstration payments by December 31, 2012. Only 60% of these practices were actually receiving MAPCP Demonstration payments. The reasons that the number of practices certified as an HCH and receiving Medicare MAPCP Demonstration payments was lower than expected include that (1) some were pediatric practices that do not have Medicare patients; (2) practices in four counties ultimately ended up being deemed ineligible to participate in the MAPCP Demonstration due to their participation in another CMS effort; and (3) practices that were part of a large health care system that had previously committed to participating in the MAPCP Demonstration later opted to become a Pioneer ACO instead. We identify additional reasons why many providers chose not to submit claims to Medicare for MAPCP Demonstration payments later in this chapter.

The state estimates that about half a million patients are receiving care from certified HCH practices. Providers are eligible for monthly HCH care coordination payments for the subset of these patients that have one or more chronic conditions.

Table 7-1
Number of practices, providers, and Medicare fee-for-service beneficiaries participating in the Minnesota Health Care Homes (HCH) initiative

Participating Entities	Number as of September 30, 2012
HCH initiative practices ¹	121
Participating providers ¹	1,027
Medicare fee-for-service (FFS) beneficiaries ²	65,612

NOTE: The subset of HCH practices that actually chose to submit claims to Medicare for monthly MAPCP Demonstration fees is much smaller and not shown in this table. HCH = Health Care Homes

SOURCES: ¹ARC MAPCP Demonstration Provider File; ²ARC Beneficiary Assignment File (SAS Output tab52c.xls 07/30/2014). (See chapter 1 for more detail about these files).

Table 7-2 displays the characteristics of the HCHs participating in the MAPCP Demonstration in Minnesota as of September 30, 2012. There were 121 participating HCHs with an average of nine providers per practice. More than 90% of these practices were office-based, with small numbers of federally qualified health centers (FQHCs), critical access hospitals, and

rural health clinics. Most of these practices were located in metropolitan counties (88%) with the remainder in rural (9%), and micropolitan (3%) areas.

Table 7-2
Characteristics of practices participating in the Minnesota Health Care Homes initiative as of September 30, 2012

Characteristic	Statistic
Number of practices	121
Number of providers	1,027
Average number of providers per practice	9
Practice type (%)	
Office based	92.6
Federally qualified health center	1.6
Critical access hospital	0.8
Rural health clinic	5.0
Practice location type (%)	
Metropolitan	88
Micropolitan	3
Rural	9

SOURCES: ARC Q5 MAPCP Demonstration Provider File and SK&A office-based physician data file (see chapter 1 for more detail about these files).

In *Table 7-3*, we report demographic and health status characteristics of Medicare FFS beneficiaries assigned to our “participating” HCH practices during the first 12 months of the MAPCP Demonstration (October 1, 2011 to September 30, 2012). Beneficiaries with less than 3 months of eligibility for the demonstration are not included in our evaluation or this analysis. Of the beneficiaries who were assigned to “participating” HCHs during the first year of the demonstration (for purposes of our evaluation, that is), a little more than one third were between the ages of 65 and 75, around a quarter (24%) were under the age of 65, and 29% were between the ages of 76 and 85, with a mean beneficiary age of 70 years. Fifty-eight percent of beneficiaries were female, 80% of participants were urban-dwelling, 20% were dually eligible for Medicare and Medicaid, and 29% were originally eligible for Medicare due to disability. One percent of beneficiaries had end-stage renal disease and 2% resided in a nursing home in the year prior to their assignment to an HCH initiative practice.

Table 7-3
Demographic and health status characteristics of Medicare fee-for-service beneficiaries participating in the Minnesota Health Care Homes initiative from October 1, 2011 through September 30, 2012

Demographic and health status characteristics	Percentage or mean
Total beneficiaries	65,612
Demographic characteristics	
Age < 65 (%)	24
Ages 65–75 (%)	34
Ages 76–85 (%)	29
Age > 85 (%)	13
Mean age	70
White (%)	91
Urban place of residence (%)	80
Female (%)	58
Medicaid (%)	20
Disabled (%)	29
End-stage renal disease (%)	1
Institutionalized (%)	2
Health status	
<i>Mean Hierarchical Condition Category (HCC) score groups</i>	1.04
Low risk (< 0.48) (%)	26
Medium risk (0.48–1.25) (%)	49
High risk (> 1.25) (%)	24
<i>Mean Charlson Index score</i>	0.73
Low Charlson Index score (= 0) (%)	68
Medium Charlson Index score (≤ 1) (%)	15
High Charlson Index score (> 1) (%)	17
Chronic conditions (%)	
Heart failure	4
Coronary artery disease	8
Other respiratory disease	8
Diabetes without complications	13
Diabetes with complications	4
Essential hypertension	22
Valve disorders	2

(continued)

Table 7-3 (continued)
Demographic and health status characteristics of Medicare fee-for-service beneficiaries participating in the Minnesota Health Care Homes initiative from October 1, 2011, through September 30, 2012

Demographic and health status characteristics	Percentage or mean
Chronic conditions (%) (continued)	
Cardiomyopathy	1
Acute and chronic renal disease	7
Renal failure	3
Peripheral vascular disease	1
Lipid metabolism disorders	14
Cardiac dysrhythmias and conduction disorders	9
Dementias	0
Strokes	1
Chest pain	4
Urinary tract infection	5
Anemia	7
Malaise and fatigue (including chronic fatigue syndrome)	3
Dizziness, syncope, and convulsions	6
Disorders of joint	5
Hypothyroidism	5

NOTE: Percentages and means are weighted by the fraction of the year that a beneficiary met MAPCP Demonstration eligibility criteria. Demographic and health status characteristics are calculated using the Medicare Enrollment Data Base (EDB) and claims data for the one-year period prior to a Medicare beneficiary first being attributed to a PCMH after the start of the MAPCP Demonstration. Urban place of residence is defined as those beneficiaries living in Metropolitan or Micropolitan Statistical Areas defined by the Office of Management and Budget (OMB).

SOURCE: SAS Output tab52c.xls 07/30/2014

We use three measures to describe beneficiaries' health status during the year prior to their assignment to a HCH Demonstration practice: Hierarchical Condition Category (HCC) score, Charlson Comorbidity Index, and diagnosis of 22 chronic conditions. Minnesota beneficiaries participating in the HCH initiative had a mean HCC score of 1.04, meaning that they were 4% sicker than the average Medicare FFS beneficiary or, in other words, that they were predicted to be 4% more costly than an average Medicare FFS beneficiary in the subsequent year. Sixty-eight percent of the population had a low (zero) score on the Charlson Comorbidity Index, indicating that these beneficiaries did not receive medical care for any of the 18 clinical conditions contained within the index in the year prior to their assignment to an HCH practice.

The most common chronic conditions diagnosed among the Medicare FFS beneficiaries were hypertension (22%), (uncomplicated) diabetes (14%), and lipid metabolism disorders (14%).

Practice expectations. Minnesota has developed comprehensive HCH certification standards that include the following:

- HCHs must establish a system to screen patients and offer HCH services to all who have or are at risk for complex or chronic conditions.
- Participants must have 24/7 access to staff through an on-call provider or phone triage system.
- HCHs must use a searchable electronic registry to support care coordination, track patient care, and manage populations.
- HCHs must use a team that includes the primary care provider and care coordinator to develop a care plan and make regular face-to-face patient contact. Care coordination includes tracking admissions, referrals, and test results; post-discharge planning; medication reconciliation; working with community-based resources; transition planning; and linking to external care plans. Patients must have the opportunity to fully engage in planning and shared decision making.
- HCHs must have an active quality team and a quality plan, and they must be able to measure and track change. At the end of their first year of certification, HCHs must report on certain quality measures and track at least one quality indicator. By the end of year two, HCHs must meet state-established quality benchmarks on patient health, patient experience, and cost-effectiveness measures.

Support to practices. Unlike other MAPCP Demonstration states, participating practices in Minnesota that have obtained HCH certification must submit claims each month to receive HCH care coordination payments from participating public and private payers. Practices may bill for care coordination services on a monthly basis even if the patient does not have a regular face-to-face visit in the office during that month. The per member per month (PMPM) payment to HCHs is tiered based on a patient's number of chronic conditions; payments are increased if a severe and persistent mental illness is present or if English is not the patient's first language. No care coordination payment is made for those without any major (as specified by the state) chronic conditions. Care coordination payments made by payers are listed in *Table 7-4*.

Table 7-4
Payer care coordination payments

Tier	Patient complexity	Medicaid FFS PMPM	Medicare PMPM
Tier 0	No major chronic conditions	\$0.00	\$0.00
Tier 1	1–3 major chronic conditions	\$10.14	\$10.14
Tier 2	4–6 major chronic conditions	\$20.27	\$20.27
Tier 3	7–9 major chronic conditions	\$40.54	\$30.00
Tier 4	10+ major chronic conditions	\$60.81	\$45.00

NOTES: Per member per month (PMPM) payments are increased by 15% if the patient is diagnosed with serious and persistent mental illness or if the patient’s primary language is not English. If both situations occur, payments are increased by 30%. Private plans must be consistent with Medicaid fee-for-service (FFS) but can be flexible in their payment approaches.

Minnesota is unique in the demonstration because, rather than using an attribution method for determining MAPCP Demonstration Medicare payments, providers must submit monthly claims. The state’s efforts to encourage certified HCH practices to bill for monthly HCH care coordination payments have not been successful. As of September 2012, 72 practices were submitting Medicare claims for HCH care coordination fees, for a total of \$440,065 in payments from Medicare for eligible beneficiaries during the first year of the demonstration – but over half of this amount went to a single practice, and many practices received only a few thousand dollars that first year. Many other eligible practices chose not to submit claims for MAPCP Demonstration payments at all. (We discuss billing issues later in this chapter.)

In terms of non-monetary support to practices, a 13-month grant from the Minnesota Department of Health paid for community care teams (CCTs) in three locations to focus on coordinating care, transitions management, and building community partnerships for population management. This grant, which ran from June 2011 to June 2012, has now ended; two of the three CCTs are currently active, and the third has applied for grant funding to continue its work. All three CCTs are expected to participate in the State Innovation Model grant.

State practice transformation assistance has also included:

- five regional HCH nurse consultants who assist practices and clinic systems in becoming certified by providing technical support and project management consulting, educating practices on practice redesign, and facilitating and expanding relationships with groups in the community such as local public health, social service, and mental health organizations;
- facilitation of a three-phase statewide HCH learning collaborative that helps practices transform and prepare for HCH certification and recertification;
- mini-grants (\$5,000) from the state to dozens of practices to support transformation into HCHs, to be used for purchases of EHR systems, training, and other infrastructure investments;

- expert support and technical assistance to help safety net providers (FQHCs, community clinics, and rural health clinics) adopt the HCH model, funded through a \$100,000 state contract; and
- feedback reports generated by Minnesota Community Measurement on how HCHs perform on key HCH quality benchmarks.

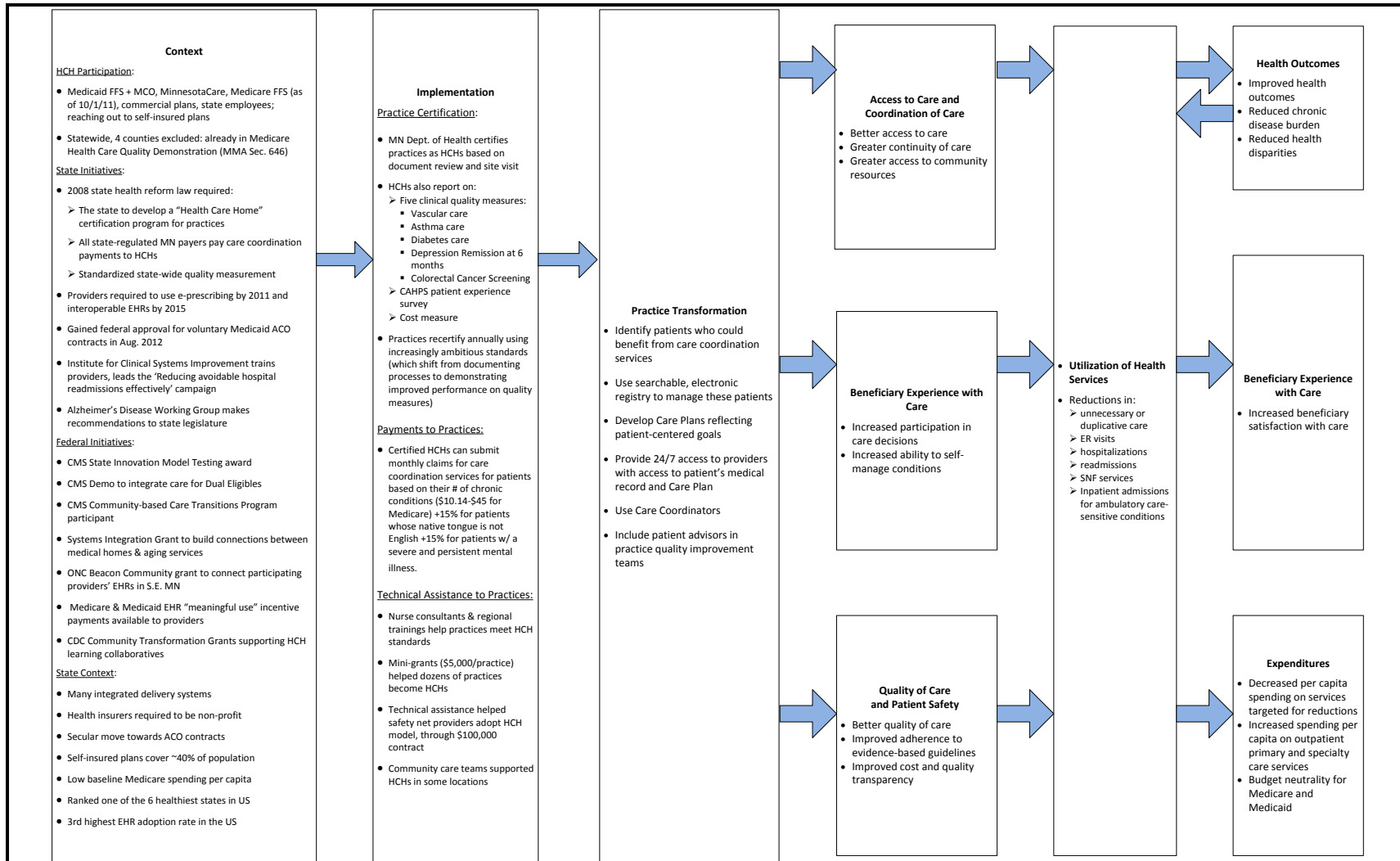
7.1.2 Logic Model

Figure 7-1 portrays a logic model of Minnesota’s HCH initiative. The left-hand side of the figure describes the context for the demonstration, including the scope of the state’s initiative, other state and federal initiatives that affect the HCH initiative, and key contextual features of the health care landscape in Minnesota—such as the fact that health plans are required to be non-profit in Minnesota and the secular move toward ACO contracts underway in that state. The demonstration context impacts the implementation of the HCH initiative, shown in the second box, which incorporates a number of strategies to promote practice transformation to a HCH (e.g., requiring participating practices to meet state-developed, patient-centered medical home (PCMH)-style certification standards, requiring providers to bill each month to receive HCH payments). Meeting the state’s certification standards is supposed to demonstrate that a practice has adopted new care processes, such as those listed in the third box of the diagram. Beneficiaries served by these transformed practices are expected to have better access to more coordinated, safer, and higher-quality care, have better patient experiences with care, and be more engaged in decisions about treatments and management of their conditions. These improvements promote more efficient utilization of health care services. These changes in utilization are expected to produce improvements in health outcomes and beneficiary experience with care, as well as reductions in total per capita expenditures—resulting in savings or budget neutrality for the Medicare program and cost savings for other payers involved in the initiative.

7.1.3 Implementation

This section uses primary data gathered from the site visit to Minnesota in October 2012, and presents key findings from the implementation experience of state officials, payers, and providers to address the evaluation questions described in *Section 7.1*.

**Figure 7-1
Logic Model for Minnesota Health Care Homes**



ACO: Accountable Care Organization; CMS: Centers for Medicare and Medicaid Services; ER: Emergency Room; EHR: Electronic Health Record; FFS: Fee-for-Service; HCH: Health Care Home; MCO: Managed Care Organization; MMA: Medicare Modernization Act; MN: Minnesota; ONC: Office of the National Coordinator for Health Information Technology; SE: Southeast; SNF: Skilled Nursing Facility

External Factors Affecting Implementation

Minnesota's political environment has shifted slightly over the course of the demonstration. The state's HCH law was initiated and passed under a Republican governor and a Democratic legislature; in 2010 the state elected a Democratic governor and a Republican legislature. Then in 2012, voters elected both a Democratic governor and legislature. While support for the demonstration has continued throughout this period, a 20-day government shutdown in 2011 led to staff turnover in the executive branch, particularly among key IT staff.

As noted above, Minnesota has a number of concurrent ongoing health reform initiatives, some of which are directly connected to the HCH initiative and some of which are unrelated. Some initiatives, like Minnesota's mandate for providers to implement electronic prescribing by 2011 and EHRs by 2015, are supporting the infrastructure needed for HCHs. These mandates are increasing EHR penetration, which is useful for helping practices to meet the HCH initiative's reporting goals. Despite these gains, one state official noted that gaps in EHR penetration still exist: "EHR adoption is good overall, but when you get into the smaller, rural practices, adoption is not as widespread."

The external factor that is perhaps having the largest impact on the HCH initiative is the secular movement in Minnesota toward ACO-style shared savings contracts, which are called "total cost of care" contracts in the state. The state's Medicaid agency has now launched an accountable care demonstration (the Integrated Health Partnerships demonstration, formerly called the Health Care Delivery Systems Demonstration) based on shared savings models and aimed at primary care providers, specialists, and integrated delivery systems, though this initiative did not begin until after the first year of Minnesota's MAPCP Demonstration. Commercial payers in the state are also increasingly interested in total cost of care contracts with providers in their networks, and had actually already entered into such contracts at the beginning of the state's MAPCP Demonstration.

Under these arrangements, practices can earn bonuses by providing HCH services and reducing costs associated with emergency room (ER) visits and hospital admissions. The returns to practices of effectively providing HCH services come in the form of these shared savings as opposed to upfront compensation through monthly HCH fees. This development was identified in site visit interviews as a key reason that some providers were opting to obtain HCH certification but not submitting claims for monthly payments. This is because under ACO-style contracts, practices have an incentive to lower the total amount of payments received for services, since the lower their total spending, the larger their "shared savings" bonus will be; because of this, any MAPCP Demonstration fees that practices received would cut into their ability to lower the total amount of payment received for services, and therefore reduce the amount of their "shared savings" bonus.

One payer voiced the challenges these initiatives pose for HCHs: "One of the questions I've heard... is how this whole accountable care organization move fits with the Health Care Home initiative. They're not inconsistent but if you're moving toward a total cost of care contract it either is or is not a total cost of care contract. Where would a separate payment for medical home come in?"

Evolution of Pilot Implementation with Medicare's Entrance

Structural and organizational changes needed to accommodate Medicare.

Interviewees in Minnesota reported minimal structural, organizational, or programmatic changes to accommodate Medicare's participation. The organizational infrastructure supporting HCHs was laid following the passage of the legislation authorizing the HCH initiative in 2008, prior to the demonstration.

The introduction of Medicare into the initiative had little impact on commercial payers, but it did have implications for Minnesota's Medicaid program. Coordinating between Medicaid and Medicare for dual eligible beneficiaries under the demonstration has been a challenge for the state. Theoretically, respondents agree that Medicare should pay HCH fees for beneficiaries enrolled in both FFS Medicare and Medicaid, but the state was struggling to operationalize this policy at the time of our visit in October 2012 – for example, when a patient was insured by both FFS Medicare and a Medicaid managed care plan, it was unclear which payer was the primary payer and should therefore make the HCH payment to the patient's provider. In contrast, Medicaid was the clear payer for beneficiaries dually enrolled in a Medicare Advantage plan and Medicaid—who make up nearly three-quarters of dual eligible beneficiaries—since Medicare Advantage plans are not participating in Minnesota's HCH initiative.

Medicare's entrance also prompted the state to create a steering and resource committee focusing on the needs of and issues encountered by older adults in the community (e.g., transitions for the frail elderly and disabled). This effort emerged out of recognition of the unique needs of the Medicare population.

Attribution and enrollment before and after Medicare's entrance. As noted earlier, compared to other state MAPCP Demonstration initiatives, Minnesota has a unique approach to patient attribution. Unlike the attribution process used in the other MAPCP Demonstration states, participating HCH practices must bill for care coordination services provided, with payment amounts determined by the complexity of each patient. (The state's experiences with billing for care coordination services will be discussed in more detail below.)

Also, patient enrollment into the HCH program is not passive; although certified HCHs may offer HCH services to any patients who have or are at risk of developing complex or chronic conditions or any patients interested in participation, it requires an explicit agreement from the patient. The state's HCH certification standards require that HCHs have in place a process for discussing features of the HCH with patients, including the role of the care coordinator and what is different under the HCH model from the care they previously received. Patients must be informed that participation in the HCH is voluntary and their agreement to participate must be documented. Practices must provide patients with a written document, either paper or electronic, that further explains the features of the HCH discussed in the verbal communication. The discussion about the HCH must be documented in the patient's medical record and the provider must flag in the record the patient's participation status in the HCH. As a result, all providers with access to the patient's medical records should know the patient's enrollment status in the HCH.

The state's approach to attribution and enrollment did not change with Medicare's entrance.

Changes in resource allocations and financing as a result of Medicare’s participation. As noted earlier, Minnesota’s payment methodology—which was designed and implemented prior to Medicare joining the state’s initiative—is based on PMPM payments that are tied to patient complexity via a tiering system. This payment methodology was originally implemented in July 2010 for Medicaid and participating commercial payers. Medicare adopted this methodology (but with slightly lower payment rates for patients in complexity tiers 3 and 4) when it joined the Minnesota MAPCP Demonstration as a payer in October 2011.

Spillover effects on Medicaid and private payers as a result of Medicare’s participation. Interviewees in Minnesota had positive things to say about the spillover effects of Medicare’s participation. For example, other payers welcomed Medicare’s entrance into the demonstration as not only offering additional revenue into practices, but also encouraging the participation of providers. Without the entrance of Medicare, the goals being pursued by Medicaid and the commercial payers might not have been met. One payer interviewed on our site visit was unequivocal about the importance of Medicare’s entrance to the success of the initiative: “Medicare’s involvement is a must. Such a high percentage of hospitalizations are paid for by Medicare, that if they’re not involved it’s not enough incentive for the hospitals. So it’s a positive thing that Medicare is involved.”

This sentiment was echoed by an advocate who observed the effect that Medicare’s entrance had on the initiative: “We saw people embracing [the concept] and people wanting to address the older population; they were much more interested. We couldn’t get anyone’s attention before [Medicare’s entrance]. Big health systems, little health systems, and the Minnesota Medical Association were at the table talking about it [after Medicare’s entrance]. They were willing to engage. We had the promise of economies of scale for them to be able to afford and think about how to bring the geriatric expertise into their practice.”

Impact of data systems in Minnesota’s HCH initiative. Minnesota has a history of fostering data collection and data sharing capacity. In 2008, the state legislature passed a mandate that all hospitals and health care providers in the state have an interoperable EHR by 2015. The state’s efforts to support adoption of EHRs and to build capacity for health information exchange are being coordinated by the Minnesota Department of Health through the Minnesota e-Health Initiative, a public-private collaborative. The e-Health Initiative is not only providing strategic direction for HIE in the state, it also distributes grants and loans to build EHR capacity in rural and community clinics, and it hosts an annual e-Health Summit to share lessons learned about EHR adoption and HIE capacity-building.

Minnesota had a Medicaid provider portal, known as MN-ITS, before the launch of the HCH initiative. The state has leveraged this portal to provide support to providers and practices that are certified as HCHs. Providers can use an “e-tier” tool available through the portal to enter a patient’s conditions and receive classification to an Adjusted Clinical Group or expanded diagnosis cluster score that will be translated into the complexity tier the patient would be placed in under the HCH payment methodology. Minnesota Community Measurement is also collecting quality data from both HCH and non-HCH practices across the state.

Minnesota implemented a centralized electronic data system to collect information from clinics pursuing HCH certification. The project proved to be more complex than initially

expected, requiring manual workarounds at times; for instance, one official noted that “there was a lot of using Excel spreadsheets outside the database and then adding them in [to the database manually] later.” The state is adding recertification functionality to the database, but these functions remained in the testing stages at the time of the site visit.

Impact of technical assistance to practices in Minnesota’s HCH initiative. Support and directives from Minnesota’s legislature, as well as the presence of a leading nonprofit health improvement collaborative, have guided Minnesota’s technical assistance strategy since the inception of its HCH initiative. Minnesota’s 2008 health care reform statute required the commissioners of health and of human services to establish a learning collaborative to offer HCHs the opportunity to exchange information about quality improvement and best practices. Certified HCHs are required by the statute to participate in the learning collaborative. This work is ongoing and did not change with the entrance of Medicare into the initiative.

The state contracted with ICSI to conduct a three-phase learning collaborative for providers. In the first phase, ICSI conducted webinars and conference calls in different regions of the state for uncertified and recently certified practices. The goal of this first phase was to lay a foundation on which the collaborative could build. The second phase was aimed at certified HCHs and focused on experience sharing. National experts and speakers from successful practice teams or clinics in the state were brought in to discuss their experiences. It consisted of two face-to-face meetings with webinars in between. Participants used these forums, primarily conference calls, to engage in open discussions of HCH implementation. Moving forward, the state plans to offer semi-annual in-person meetings and more frequent webinars.

After some mixed reviews of the usefulness of the technical assistance delivered by ICSI (described below in **Section 7.2**), the state decided to bring HCH learning collaborative activities in-house after its contract with ICSI ended in June 2012 in an attempt to better meet the needs of HCHs. The state is developing a care coordination curriculum in response to feedback from practices that they need more training on this topic.

As noted above, the state also uses nurse consultants to support practices in preparing for the HCH certification process. Nurse consultants work with interested practices, helping with practice facilitation (i.e., the process of a practice becoming a HCH) and gap analysis. Once clinics apply to become HCHs, they are assigned a nurse planner who works with them as they undergo the certification process.

7.1.4 Lessons Learned

Minnesota’s HCH initiative has made large strides forward since the state announced the first certified HCHs in August 2010. Interviewees agreed that Medicare’s entry into Minnesota’s program helped raise awareness among providers and moved the state closer to its goal of having much of the population served by a HCH. Provider interest in participating increased as the prospect of additional financial support from a major payer like Medicare became a reality.

Minnesota’s experience has also shown that a culture of innovation offers opportunities, but can also carry risk. Some practices in the state have declined to participate in the demonstration—or have received HCH certification but have opted not to bill for HCH care coordination services delivered—due to expectations of greater revenues under alternative

payment arrangements that many providers have already entered into with many payers in the state. In addition, Medicaid's Health Care Delivery Systems Demonstration will also use an ACO-style payment methodology that could potentially yield more revenues for health systems, making participation in that initiative potentially more attractive than the HCH initiative.

7.2 Practice Transformation

This section seeks to answer evaluation research questions related to describing the features of the practices participating in the Minnesota HCH initiative, identifying the changes that practices made in order to take part in the MAPCP Demonstration and meet participation requirements, describing technical to practices, summarizing early views on the payment model, and giving an account of experiences with the demonstration thus far. We rely upon findings from our initial site visit and secondary data provided by the state to answer these research questions.

7.2.1 Changes Practices Made to Join the MAPCP Demonstration

Practices are making a number of changes related to HCH certification, administrative issues, and health IT, in order to participate in the MAPCP Demonstration.

PCMH recognition. As noted earlier, Minnesota developed its own HCH standards for certification instead of using an existing PCMH certification program, as other MAPCP Demonstration states did. Minnesota chose to develop its own HCH standards because many in the state felt the NCQA PPC[®] PCMH[™] recognition program put too much emphasis on health IT. NCQA was also painted as having less of a patient focus than Minnesota's HCH standards, since NCQA does not require practices to have a patient advisor to become certified as a PCMH. Despite concerns over the NCQA PPC[®] PCMH[™] requirements for health IT, Minnesota practices still need to be able to generate electronic registries of care coordination patients and report quality data to Minnesota Community Measurement. These functions rely heavily on having some health IT in place.

To bring more practices into the HCH program, the state has granted "variances" to some practices, temporarily exempting them from meeting some of the HCH requirements. For example, a variance may be given when a practice is offering 24/7 access but needs to do a better job of educating its patients about its availability, or a practice needs to implement an audit to ensure the after-hours process is working. In such instances, practices have the full year until recertification to clear the variance but are asked to provide quarterly reports to the state to indicate if these variances have been corrected.

Practices felt that the HCH certification process was not ideal. In particular, many practices interviewed during the site visit felt the documentation requirements of the certification process were burdensome – even though they require producing notably less documentation than NCQA's PCMH recognition requirements. This was especially true among smaller practices.

Also, although the process of recertification was just getting underway during our site visit, practices felt recertification after 15 months, which was the state's planned timetable, would be too frequent because it would not allow enough time for changes to take place. Despite the burdens of recertification they already face, providers we interviewed indicated that they

were expected to continually expand the patient populations to whom they offer care coordination services.

Although there were differences among the practices we spoke to, most indicated that they were engaged in some of the HCH activities prior to the formal certification process. Some had already been trying to improve primary care on their own, while others had begun engaging in formal care coordination activities as a result of the state's HCH initiative.

Once certification has been granted, the state expects practices to identify patients with chronic health needs who could benefit from care coordination and other HCH services, and begin providing those services. Most practices seemed to be able to identify patients who would benefit from care coordination and care plans, but some had a hard time. The state left choosing specific patient populations to target for care coordination services up to the discretion of the practices, and did not set a specific threshold for the number of patients that had to receive HCH services. Instead, it used a more holistic approach that assessed whether practices were coordinating care and had care plans on file for an appropriate number of patients, reviewed the types of patients receiving care coordination, and considered the approach used to identify those patients.

Most of the practices we met with indicated that increasing the degree of care coordination patients received and developing individualized care plans was a big part of HCH practice transformation. Practices were using extra payments they received to pay for the care coordinators they had hired at the time of their HCH certification, although there were billing problems that limited these payments (discussed below). Tracking referrals, getting test results and reporting back to patients were all important parts of "closing the loop" in care coordination. While this was happening with specialists and laboratories, practices sometimes found it more challenging to work with hospitals to know when admissions and discharges were occurring. However, several practices noted that their local hospitals were beginning to cooperate with their efforts to coordinate care by providing information on patients' discharges. Providers often cited the lack of interoperability between EHR systems as a barrier to obtaining medical records from other providers.

One barrier that some practices and advocates noted was that patients sometimes did not receive the care coordination and care planning that was available if they did not consent to receiving these services, since patient consent is required under state law for the HCH initiative. State officials indicated that getting physicians directly involved in patients' decisions about whether to participate in the HCH initiative was an effective way to get reluctant patients to accept care coordination. Practices reported having different policies in terms of whether to offer care coordination services to patients who agreed to receive care coordination, but for whom they could not collect a monthly HCH care coordination payment. Care coordinators were also supposed to be referring patients to community resources, but some practices questioned how frequently this was actually happening.

One practice felt that the requirement for a patient advisory committee was "over the top," especially since the magnitude and scope of activities patients should be involved in was not clearly defined. On the other hand, while the state only requires patients to advise on practices' quality programs, some practices have gone above and beyond the requirement by

having patients involved in activities such as establishing parenting classes or patient discussion groups.

Administrative changes. Given that the addition of care coordination was cited as one of the biggest changes associated with the HCH initiative, it is not surprising that hiring new staff to perform these care coordination activities was also cited as a major change in practice structure. Care coordination required practices to identify or hire staff who could work with physicians and patients. Practices varied in terms of the type of training their care coordinators had—including registered nurses (RNs), licensed practical nurses, medical assistants, community health workers, and social workers. There was a general sense that care coordinators had to have good “people skills” in order to interact effectively with patients and physicians. One state staff member told us practices that were hiring new care coordinators (as opposed to carving out time in existing staff members’ schedules) tended to be located in the Minneapolis-St. Paul area or be part of larger health care systems.

Within a given practice, there could sometimes be a mix of backgrounds among its care coordinator staff. One practice used nurses to manage more complex patients and staff with less clinical training focused on less complex patients. In another practice, less-trained care managers followed patients’ care, monitored medication tolerance, and brought reactions to medications to clinicians’ attention, while RNs dealt with more medically focused questions. One patient advocate we spoke with thought care coordinators in the practices they were familiar with were not seasoned in cooperating with other resources in the community that are also working with their patients, and did not know how to do geriatrics well, though it remains to be seen whether this observation holds true for all practices across the state.

No practices felt that having Medicare participate in the demonstration led to major changes in their approach to providing HCH services. It appears that after a practice begins adopting an HCH approach to service provision, many offer HCH services to all patients with chronic conditions who may benefit from such services.

Health information technology. One state official noted that it was hard for a practice to be installing an EHR at the same time they were trying to implement the other aspects of the HCH model. However, this interviewee recognized that many Minnesota practices already had EHRs in place before the HCH certification process started. This was because many are part of large integrated delivery systems that had made the investments in IT. Other practices began implementing EHR systems in order to remain competitive and be able to meet the state’s quality reporting requirements which will become mandatory in 2014.

Several practices were using their EHRs to generate patient registries that identified those chronic needs patients who could benefit from HCH services. These were often patients with diabetes, asthma, CHF or vascular disease. One practice hoped to use its EHR to develop a prevention registry that would allow them to track patients who were due for various types of screening. Having an EHR also allowed practices to generate electronic patient records that could be sent along with referrals via email or fax.

7.2.2 Technical Assistance

Overall, there was limited enthusiasm for the learning collaborative sessions sponsored by the state, though practices did see them as useful networking opportunities that built collegiality among the practices. These learning sessions have focused on a variety of HCH-related topics. One practice told us that as a result of information they learned at a recent learning collaborative session, they were currently working on identifying patients' readiness to change their lifestyle, which is related to helping patients meet their health goals. Another practice told us that the most useful learning collaborative session they attended allowed practices to share examples of different quality projects they were undertaking as part of their quality plan.

Although many practices were focusing on the care coordination aspects of the HCH model during the first year, they also felt that more formal training in this aspect of the HCH would be useful.

7.2.3 Payment Supports

Many practices reported that Minnesota's HCH payment system (described in *Section 7.1.1*) is difficult to deal with. First, it requires practices to assign patients to complexity tiers, which presented some issues. For one, the state believes that practices are generally "undertiering"—meaning they are being overly conservative in their assessments of the severity and number of chronic conditions their patients have, and are receiving lower monthly HCH payments than they might be entitled to. Interviewees suggested two reasons for this phenomenon. Providers may be seeking to avoid over-tiering for fear of being subject to payment disallowances. The discrepancy may also reflect the different data available to the state (claims data) compared to the provider (clinical records).

Although it was used prior to Medicare joining the HCH initiative, some payers and practices questioned whether the tiering approach is appropriate for identifying non-Medicare patients served by HCHs who could benefit from care coordination services. Questions were also raised about whether the tiers adequately capture the complexity of the dually eligible beneficiary population, whose number of chronic conditions may not reflect the true complexity of their care coordination needs. Providers also were concerned that a patient could have a single, severe condition that requires more effort to manage than several well-controlled conditions—yet the payment methodology would more highly reward treating the patient with multiple well-controlled conditions. One payer felt that "the tiering system itself is not representative of the amount of the complex care coordination that gets given" because patients may have intense service needs, even if they do not have enough conditions or touch enough service systems to qualify as a higher-tier patient on the HCH complexity scale.

A second major issue with Minnesota's payment approach is that submitting a monthly claim when a patient had not been seen face-to-face—a central tenet of many PCMH payment systems—was difficult for practices to undertake, since most practice billing systems require an actual visit to generate a claim. One state official explained the decision of some practices not to bill for care coordination services by suggesting "the providers aren't set up to bill for it, and it would be too little money to be worth [modifying their billing system to submit claims for services not associated with a face-to-face visit]." As a result, relatively few practices were

billing payers – including Medicare – that required claims to be submitted to receive monthly HCH care coordination payments. Practices also avoided billing payers who were charging patients co-pays for monthly HCH fees, since patients complained about paying such co-pays in months when they were not seen by their provider. Some practices also told us payers were not set up to accept claims using the new care coordination codes.

Although this was a multi-payer demonstration, providers saw two major gaps in the patients they served that also reduced their incentives to develop the appropriate billing systems needed to receive the HCH payments. First, self-insured private employer health plans (ERISA plans) are not yet participating in the HCH initiative, though the state is trying to get these plans to join. In addition, practices could not bill for HCH services for Medicare enrollees covered by Medicare Advantage plans, since such plans were not participating in the HCH initiative according. Some practices told us that so many of their Medicare patients were in these plans that they simply ignored billing for the remainder of their Medicare patients. In addition, the total cost of care contracts, discussed earlier, that practices are increasingly participating are providing further disincentives to submit claims for HCH payments.

The relatively low interest among HCH practices in billing Medicare for monthly care coordination payments also may be related to the fact that primary care practices that were interested in the HCH model and had already implemented some of its aspects in 2009 (before HCH certification began) tended to serve a lower percentage of Medicare patients than other practices, according to a 2009 state-wide survey (American Academy of Pediatrics—Minnesota Chapter et al., 2009). Despite these impediments and disincentives to bill payers for HCH services, some practices that have a large share of their patients covered by Medicare FFS have figured out how to bill and valued the revenues that they received. There were not many of these practices and they tended to be located in rural areas or, at least, outside the Minneapolis-St. Paul area. Recent data on Medicare MAPCP Demonstration payments shows an extremely skewed distribution of payments. One practice stands out dramatically, accounting for 37% of the Medicare patients for whom a HCH claim had been received and 44% of the Medicare payments made in the fall of 2012 (September through November). Since the majority of this practice's patients are elderly, it has a stronger incentive than most to assure that it is maximizing revenues from Medicare.

7.2.4 Summary

The overall goal of the HCH initiative is to get practices to understand the value of primary care and to participate in a process that allows them to become certified and function as HCHs. Although many bought into these objectives, some practices indicated that the initiative started too quickly and would have benefited from more upfront planning related to the appropriateness of the tiering system for determining which patients would be eligible for HCH payments and the amount that would be paid. Practices did feel that patients and providers were satisfied with the changes in care coordination taking place, but the lack of interoperability between health IT systems remains a problem. Overall, the payment problems seem to be creating the biggest challenges and, if not solved, could affect the sustainability of the effort.

7.3 Quality of Care, Patient Safety, and Health Outcomes

7.3.1 Implementation of State Initiative and Practice Features Expected to Improve Quality of Care, Patient Safety, and Health Outcomes During Year 1

One of the care processes emphasized in the HCH standards with the greatest potential to impact health care quality, patient safety, and health outcomes is the state’s requirement that practices use an electronic registry to actively manage their patients with chronic conditions. As with other HCH requirements, the state allows practices flexibility in how they interpret this requirement, leaving practices discretion to decide what information to capture in their registry and precisely how to use their registry. For example, one practice told us they used their registry to generate lists of patients with particular conditions to follow-up with, and their registry alerted them when a patient had missed an appointment or had a new one coming up. Another practice told us their registry—which they described as “intense”—tracks 60 measures (e.g., whether patients with coronary artery disease were taking aspirin, whether bone density tests were being done); they thought this registry was core to ensuring the practice was improving the care it delivered to these patients. Another practice staff member told us they believed improved outcomes had been generated thanks to more proactive efforts to bring patients back in for follow-up visits, systematically identify and address gaps in care, conduct medication titration, and engage in patient education.

Although adhering to evidence-based guidelines regarding the delivery of preventive services is another HCH care process with the potential to improve quality, the delivery of preventive services seems to have less of a focus in the HCH initiative than managing existing chronic conditions, based on our conversations with practice staff.

Similarly, while medication reconciliation—a care process associated with improved patient safety—was often mentioned in interviews with practice staff, practices usually had begun engaging in this before the HCH initiative or were doing so as part of separate care transitions interventions currently underway in the state.

In addition to encouraging practices to adopt new care processes aimed at improving quality, safety, and outcomes, practices in Minnesota (regardless of whether they are participating in the HCH initiative) are required to report on a number of annual quality measures to Minnesota Community Measurement, including measures related to asthma, diabetes, vascular health, depression, and colorectal cancer screening; these data are posted online. Practice staff we interviewed often commented favorably about these measures. Two high-performing practices told us the measures collected by this entity were well-tested and aligned well with evidence-based medicine. Another practice told us the quality measure data available on the state’s quality measure reporting website (prior to the launch of the HCH initiative) is useful for caring for complex patients—particularly the measures about diabetes, vascular care, and depression. Another practice told us they used data from this website to convince laggard providers in their practice that they were not doing a particular clinical process as often as they should be, which in turn made these providers more receptive to adopting new care processes aimed at rectifying this deficiency. The state had intended to give the subset of Minnesota practices that are certified as HCHs regular reports documenting their performance on these measures on an ongoing basis; however, at the time of our interviews (in October 2012) this process had not yet started.

7.3.2 Impacts on Quality of Care, Patient Safety, and Health Outcomes

At this early stage in Minnesota’s HCH initiative, very little evidence of improvement in care quality, patient safety, and health outcomes yet exists. Quantitative data assessing the impacts of the MAPCP Demonstration on quality of care, patient safety, or health outcomes on Medicare beneficiaries are not yet available. Future annual analyses and reports will attempt to assess the impact on these outcomes. Beginning with the second annual report, we will include descriptive and, where appropriate, multivariate analyses of process of care quality indicators, EHR Meaningful Use rates, prevention quality indicators, as well as outcomes on mortality, and incidences of serious medical events, using Medicare data. We will also provide results on self-reported health status based on the PCMH-Consumer Assessment of Healthcare Providers and Services (CAHPS) survey.

7.4 Access to Care and Coordination of Care

7.4.1 Implementation of State Initiative and Practice Features Expected to Improve Access to Care and Coordination of Care During Year 1

The HCH care process likely to have the greatest impact on access to care is the requirement that practices offer live access to a practice staff member with access to a patient’s medical records and care plan 24 hours a day, 7 days a week. Practices used a variety of approaches to meet this 24/7 access requirement, most commonly rotating on-call responsibilities among providers or care coordinators. In one practice where each provider was on-call for his own patients, the provider, patients and their families could communicate using an electronic portal. Another practice told us they were meeting the 24/7 access requirement through a patient flow coordinator housed in a local centralized call center. We were told that rural practices had difficulty complying with the 24/7 standard, since they often did not have a large number of providers to share on-call duties and practices sometimes had recruited providers with promises that they would not have to serve on-call. State staff reported that they frequently gave practices a variance for this ambitious standard.

Care coordination is also a key requirement of the HCH standards, which practices must meet either through a newly hired staff member or an existing staff member with dedicated time in their schedule to work on such duties. To identify which patients to offer these care coordination services, practices are asked to devise practice-specific criteria and use them to identify patients with chronic conditions that would benefit from enhanced care coordination. As a result, the patients that HCH practices target with enhanced care coordination services vary. For example, some practices are targeting all patients with particular chronic conditions, while one is honing in on patients with chronic conditions who had been recently discharged from the hospital, and another is looking for patients who also have socioeconomic characteristics that increase the complexity of their treatment. The share of patients in a practice that were being offered care coordination services was often small—approximately 2%–3% of the practice’s total patient panel, based on our interviews.

There was substantial overlap in the tasks care coordinators performed across sites, though each practice seemed to have their coordinators conduct a slightly different set of activities. Care coordinators’ specific functions are typically tailored to each patient’s needs, but they often included

- serving as the main point-of-contact for patients when they had questions (e.g., tracking down answers to questions about medications) and triaging;
- pre-visit planning, making sure patients' charts are up-to-date, and developing and updating patient care plans and patient-centered health goals;
- making sure patients get to specialist appointments or other referrals, and then obtaining medical records from these appointments;
- scheduling follow-up visits for patients at appropriate intervals, and coordinating appointments so a patient can be seen for multiple problems in a single visit; and
- referring patients to social services in the community (e.g., getting patients signed up for Meals on Wheels, giving them information on assisted living housing, urging patients to take advantage of available mental health resources in the community).

Practices often told us care coordinators were using electronic registries to coordinate patients' care, such as by checking their registry to see which patients needed services, when they needed them, and whether they actually received them. Respondents told us that care coordinators are also responsible for "tying up a lot of loose ends."

There was variation in some aspects of the care coordination services that HCH practices are offering. In addition to the variation in the clinical backgrounds of practices' care coordinators noted earlier, we observed variation in how they function along several dimensions:

- **Work site.** Care coordinators in the Minneapolis-St. Paul area and in larger health care systems tended to work directly out of practice sites, whereas in other practices care coordinators worked in locally staffed, but centralized, call centers serving multiple practice sites, according to a state staff member.
- **Patient panel size.** Care coordinators are managing different numbers of patients, ranging from 65 to 160 patients per care coordinator.
- **Registries.** The information in the registries that care coordinators use to manage their patients with chronic conditions often varies across practices.
- **Activities.** In addition to the care coordination activities commonly mentioned above, some less frequently mentioned duties included working on advance directives, submitting prior authorizations, ordering medical equipment, and managing care transitions out of the hospital.

We sometimes heard that care coordinators met in-person with patients to review their conditions (either right after meeting with a physician, or through separately scheduled appointments). During these encounters, care coordinators would collaboratively develop patient-centered health goals, figure out how to meet those goals, and sometimes engage in motivational interviewing.

As noted above, one of the duties of care coordinators is to refer patients to social services in the community that could benefit them, but some practices questioned how frequently

this was actually happening. Indeed, one patient advocate we spoke with thought care coordinators were not seasoned in cooperating with other resources in the community that their patients are using. While the state has thus far not recommended particular services or processes to use for particular patient populations, one of the state’s HCH initiative steering committee subgroups is currently focused on finding community resources that care coordinators could use to help certain special populations access additional services, with a focus on helping Medicare beneficiaries. The state is also preparing tips for care coordinators on how to identify other care coordinators these patients might have through other programs, and what a care plan should contain for this population. The group working on this has also discussed the need to educate and train non-HCH care coordinators to educate them about the role of the HCH care coordinator, and to do this on an ongoing basis since there is regular turnover among care coordinators.

7.4.2 Impacts on Access to Care and Coordination of Care

Quantitative data assessing the impacts of the HCH initiative on access to care and coordination of care on Medicare beneficiaries are not yet available. Future annual analyses and reports will attempt to assess the impact on these outcomes. Beginning with the second annual report we will include descriptive and multivariate analyses of several indicators of access to care and coordination of care. Claims-based indicators will include primary care physician and specialist visit rates; ratio of primary care visits to total ambulatory care visits; percentage of discharges from the hospital for a medical admission with a follow-up visit within 14 days; rate of unplanned readmissions within 30 days after discharge; the percentage of ER visits that do not lead to a hospitalization; and a continuity of care index, which measures the concentration of visits among providers in the practice that is the beneficiary’s usual source of care or to whom the beneficiary was referred by a provider in that practice. In addition, we will analyze a measure of care coordination based on responses to the PCMH-CAHPS survey.

7.5 Beneficiary Experience with Care

7.5.1 Implementation of State Initiative and Practice Features Expected to Improve Beneficiary Experience with Care During Year 1

HCH practices are required to engage in several new activities likely to change patients’ experience with care. One state staff member thought the changes that practices were making that were likely to be the most visible to patients were the presence of dedicated care coordinators (since patients now have an easily accessible person they can go to with questions) and the requirement that providers develop patient-specific care plans (since providers are now explicitly asking patients what their health goals are). While we were told that “a lot” of practices do care planning well, a state staff member also noted that strengthening these areas was something they recommended to “a lot” of practices. This state staff member noted that care planning was the HCH standard that the state most frequently gave practices “variances” for.

Other practice activities were cited as potentially resulting in changes to patients’ experiences with care. A practice we spoke with thought that “PDSA cycles”⁴¹ and quality

⁴¹ PDSA cycles are practice-identified quality improvement projects that involve four steps: Plan, Do, Study, Act. Source: American Academy of Pediatrics—Minnesota Chapter et al., 2009.

improvement projects that they were now doing to try to improve care processes were having a positive impact on beneficiary experience in their practice. Another practice told us they were now providing patients with packets of information explaining what they could expect from the practice by participating in the state's HCH initiative.

Practices are also seeking to improve patients' experience by involving patients as advisors to their practices. This requirement was noted as a key difference between Minnesota's HCH standards and NCQA's PPC[®] PCMH[™] standards, and something that, with the exception of FQHCs, nearly all practices that have become certified as HCHs had not previously had in place. One practice that was part of a large health care system told us the new patient advisors that sit on its advisory board have helped them understand what their patients need, determine what their patients understand from the information they send to them, and identify what they need to do to improve patient satisfaction. However, one patient advocate thought that with all the new processes the state is trying to get in place in practices, not much focus is being put on getting practices to view patients as partners and involve them in shared decision making about treatment options.

To measure patient experience of care, Minnesota will begin regularly fielding a version of the Clinician and Group (CG)-CAHPS survey (which asks about the patient's "last visit") among HCH and non-HCH practices in 2013. The state is still working through how best to meet two sets of state regulations using a common CAHPS survey instrument—since its quality rule requires a patient experience survey to be fielded among patients of all of the state's practices *every other* year, while its HCH rule requires such a survey to be fielded among HCH practices *every year*. The state has advised that it is likely to transition to the "PCMH" version of CG-CAHPS (which asks about care received "over the past year" and includes additional PCMH-related questions) in future years.

Payers and practices currently vary in the extent to which they are collecting and using patient experience survey data. One payer told us about a practice that was using the Patient Activation Measure instrument to assess patient activation and then determine at what level to engage these patients, but for the most part patient experience surveys did not come up in our interviews.

7.5.2 Impacts on Beneficiary Experience with Care

Quantitative data assessing the impacts of the MAPCP Demonstration on beneficiary experience with care are not yet available. In the second annual report, we plan to report our findings from the PCMH-CAHPS survey administered to Medicare beneficiaries.

7.6 Effectiveness (Utilization & Expenditures)

7.6.1 Implementation of State Initiative and Practice Features Expected to Affect Patterns of Utilization and Expenditures During Year 1

Minnesota expects that participation in the MAPCP Demonstration will produce average savings of \$27 per beneficiary per month (PBPM), compared to the pre-demonstration average Medicare spending (for Parts A and B) of \$575 PBPM in Minnesota. Nearly all of these savings are expected to come from reduced spending on inpatient acute care hospital services (\$29

PBPM), though the state also expects small decreases in spending on ER visits (\$1 PBPM) and skilled nursing facility services (\$1 PBPM). It expects spending on outpatient primary care and specialty services to go up slightly (by \$4 PBPM). Net of HCH payments, Minnesota estimates that Medicare will save \$15.20 PBPM.

In addition, many other payment and delivery system reforms and quality improvement efforts have taken place in the past, are currently underway, and are planned for the future in Minnesota (as noted earlier in *Section 7.1*). Prior initiatives aimed at improving care quality, and developing HCH capabilities in particular, could have already generated savings in HCH practices, leaving little room for additional efficiencies. Spillover of these initiatives to non-HCH practices could also undermine the possibility of finding impacts of the HCH initiative on utilization and expenditures.

7.6.2 Year 1 Findings on Effectiveness

In this section, we present descriptive statistics and estimates of the demonstration effects from the quarterly fixed effects regression models (*Section 1.2.3, Equation 1.1*) for three Medicare expenditure outcomes (total expenditures, expenditures for short-stay, acute-care hospitals, and expenditures for ER visits) and three utilization outcomes (all-cause, acute-care hospitalizations; ER visits; and 30-day unplanned readmissions). The results are based on 27 quarters of data.

- Baseline period: January 2006–June 2010 (18 quarters). This is the period prior to the launch of the HCH initiative in Minnesota.
- Pilot period: July 2010–September 2011 (5 quarters). This is the period after the start of the HCH initiative, but prior to Medicare joining the initiative.
- Demonstration period: October 2011–September 2012 (4 quarters). This is the first year after Medicare joined the HCH initiative. In Minnesota, a substantial number of practices did not start participating in the HCH initiative until after Medicare joined as a payer.

The descriptive statistics reported here are weighted averages of the Medicare expenditure outcomes and utilization rates from 2006 through the first demonstration year. The averages are calculated separately for (1) beneficiaries assigned to practices that participated in the HCH initiative before Medicare joined (the “HCH pilot” group), (2) beneficiaries assigned to practices that started participating in the HCH initiative after Medicare joined (the “HCH non-pilot” group), and (3) beneficiaries assigned to non-HCH practices in the comparison group. The weights adjust the averages for differences in demonstration-eligibility and for observable differences in beneficiary-, practice-, and geographic-level characteristics. For this report, we use beneficiaries that RTI assigned to participating HCHs using a claims-based assignment algorithm used by the majority of MAPCP Demonstration states (described in *Chapter 1*).

The regression models (see *Section 1.2.3*) were estimated separately using two distinct intervention groups ([1] beneficiaries assigned to HCH pilot practices; and [2] beneficiaries

assigned to HCH non-pilot practices) and one comparison group ([1] beneficiaries assigned to non-HCHs). The regression results aim to answer the following key evaluation question:

1. Did the HCH initiative affect Medicare expenditures and utilization rates during the MAPCP Demonstration period? Specifically, was the initiative associated with slower growth in Medicare expenditures or reductions in utilization, relative to beneficiaries assigned to comparison practices?

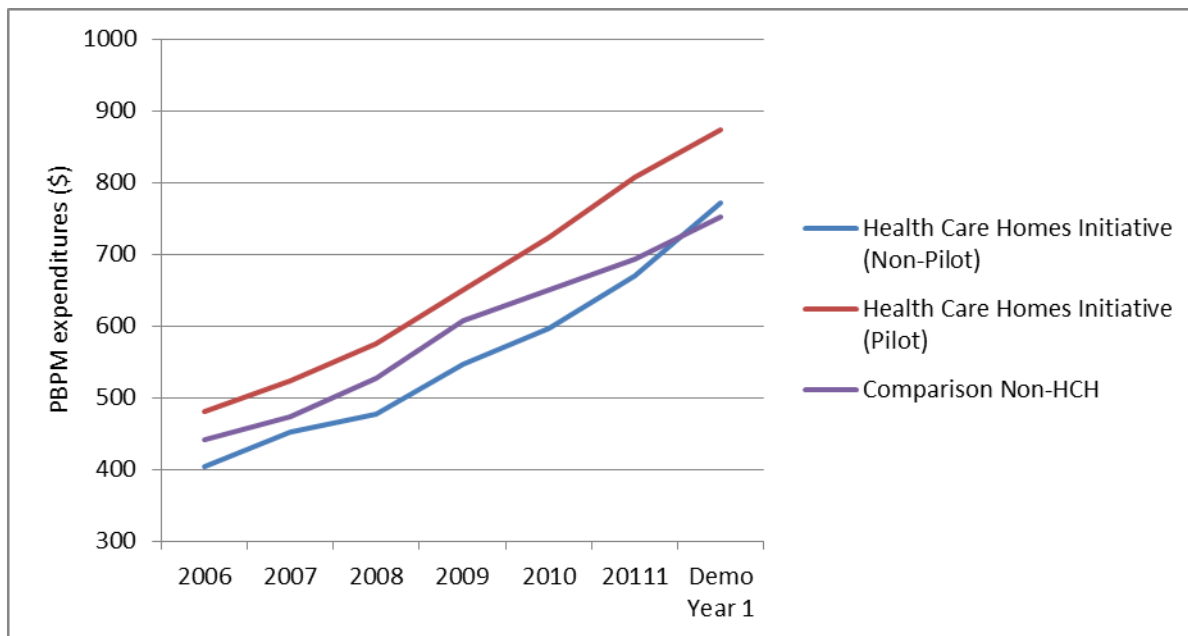
The regression tables presented below will help answer this question. They contain estimates of the demonstration effects for each quarter, and their standard errors. For expenditures, these are “difference-in-differences” (D-in-D) effects. Negative estimates indicate that the growth in expenditures was smaller for beneficiaries assigned to participating practices than for beneficiaries assigned to practices in the comparison group. Conversely, positive expenditure estimates indicate that the growth in Medicare expenditures was larger for beneficiaries assigned to participating practices than for beneficiaries assigned to practices in the comparison group. We also report the average demonstration effect over the entire first year of the demonstration, calculated as a weighted average of the four quarterly estimates (see *Section 1.2.3*).

For the rates (per 1,000 beneficiaries or hospital discharges) of all-cause, acute care hospitalizations, ER visits, and 30-day unplanned readmissions, the quarterly demonstration effects represent, for each demonstration quarter, the (regression-adjusted) change in average utilization among beneficiaries assigned to participating practices, relative to beneficiaries assigned to comparison practices. Negative estimates suggest that during particular demonstration quarters the state initiative was able to lower the utilization rate for beneficiaries assigned to participating practices, relative to beneficiaries assigned to comparison practices. Conversely, positive estimates suggest that the state initiative was associated with increased utilization rates in certain quarters during the demonstration period. As with the expenditure outcomes, we also report the average demonstration effect for utilization rates over the entire first year of the demonstration, calculated as a weighted average of the four quarterly estimates.

Descriptive statistics. Average PBPM Medicare expenditures and average utilization rates (per 1,000 Medicare FFS beneficiaries) from 2006 through the first year of the MAPCP Demonstration are shown in *Figures 7-2 through 7-7*. Total Medicare expenditures (*Figure 7-2*) showed an increasing trend and were always the highest among beneficiaries assigned to HCH pilot practices. The same was true for expenditures for short-stay, acute care hospitals (*Figure 7-3*). Between 2006 and the first year of the MAPCP Demonstration, expenditures for ER visits (*Figure 7-4*) also increased and were always the lowest among beneficiaries assigned to HCH non-pilot practices. The same patterns were observed for the rates of all-cause, acute care hospitalizations (*Figure 7-5*) and ER visits (*Figure 7-6*). Finally, the rate of 30-day unplanned readmissions (*Figure 7-7*) increased but was more volatile. In 2011 and the first demonstration year, the rate for beneficiaries assigned to HCH pilot practices was higher compared to beneficiaries assigned to HCH non-pilot practices or non-HCHs in the comparison group.

Figure 7-2

Minnesota: Trend in average total PBPM Medicare expenditures from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to HCH pilot and non-pilot practices and comparison non-HCH practices

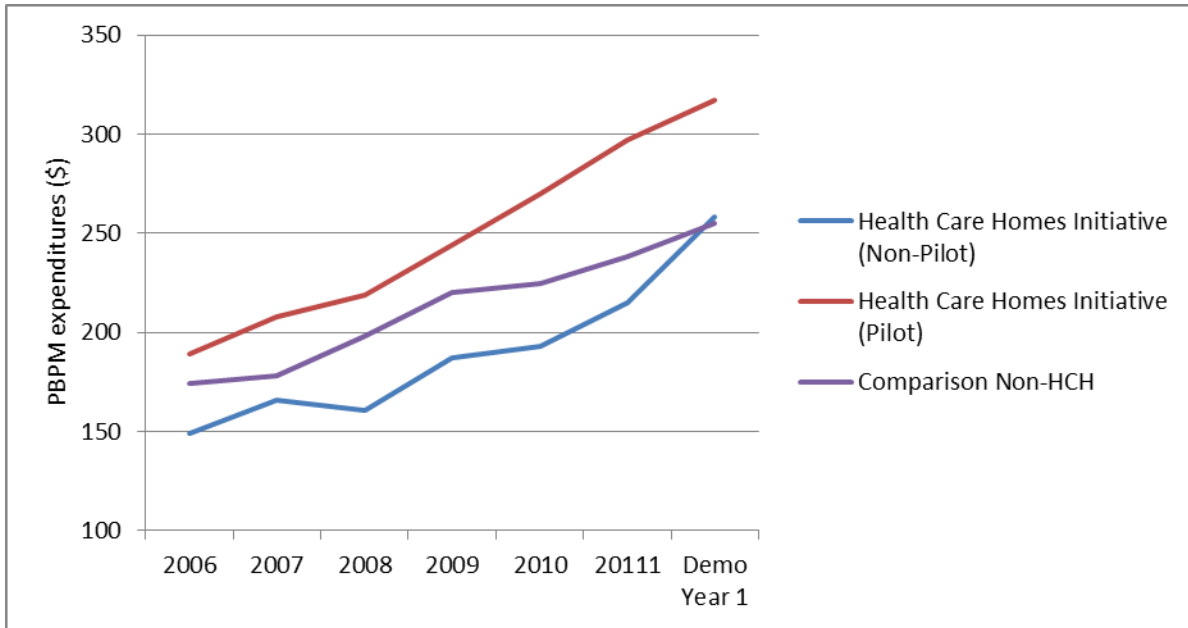


NOTES: MAPCP = multi-payer advanced primary care practice; HCH = health care homes; PBPM = per beneficiary per month.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Minnesota started on October 1, 2011, the 2011 averages were calculated over the period January–September 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period October 2011–September 2012. These amounts do not include fees paid by Medicare as a result of participation in the HCH initiative.

Figure 7-3

Minnesota: Trend in average PBPM Medicare expenditures to short-stay, acute-care hospitals from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to HCH pilot and non-pilot practices and comparison non-HCH practices

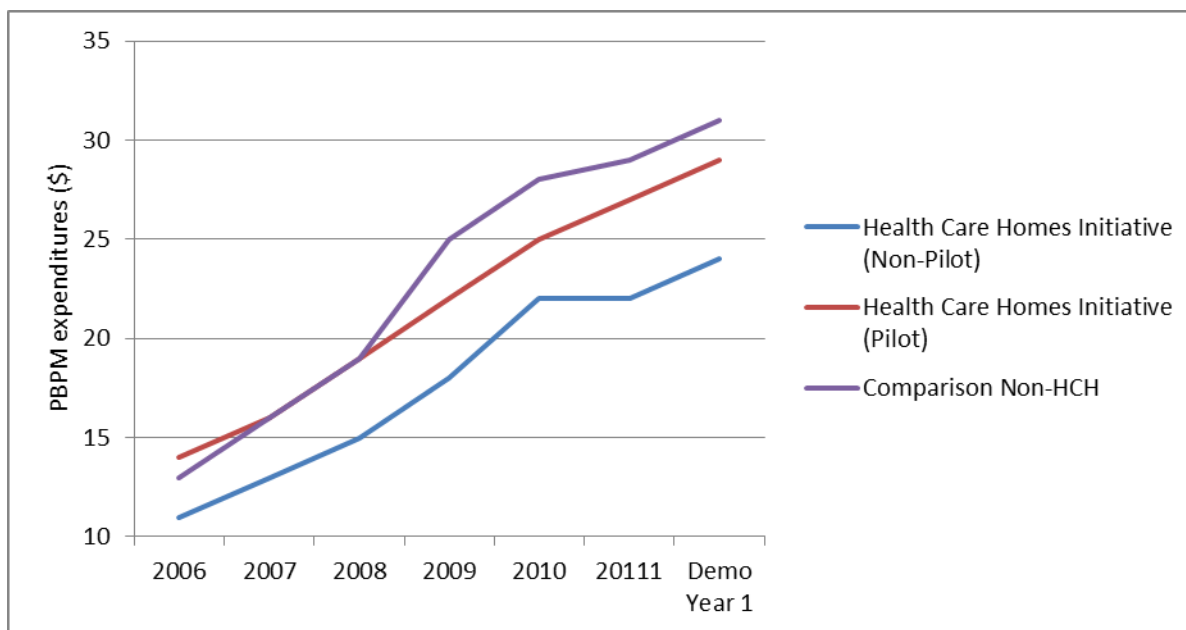


NOTES: MAPCP = multi-payer advanced primary care practice; HCH = health care homes; PBPM = per beneficiary per month.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Minnesota started on October 1, 2011, the 2011 averages were calculated over the period January–September 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period October 2011–September 2012. These amounts do not include fees paid by Medicare as a result of participation in the HCH initiative.

Figure 7-4

Minnesota: Trend in average PBPM Medicare expenditures for ER visits and observation stays from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to HCH pilot and non-pilot practices and comparison non-HCH practices¹

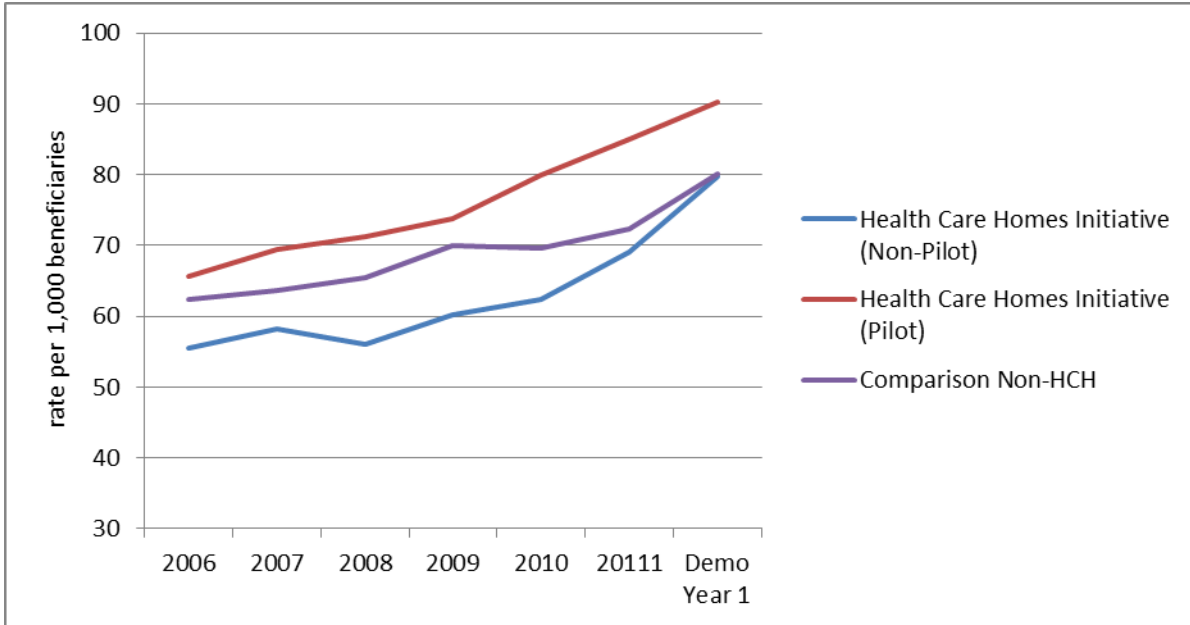


NOTES: MAPCP = multi-payer advanced primary care practice; HCH = health care homes; PBPM = per beneficiary per month; ER = emergency room.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Minnesota started on October 1, 2011, the 2011 averages were calculated over the period January–September 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period October 2011–September 2012. These amounts do not include fees paid by Medicare as a result of participation in the HCH initiative.

¹ This excludes Medicare expenditures for ER visits that led to a hospitalization.

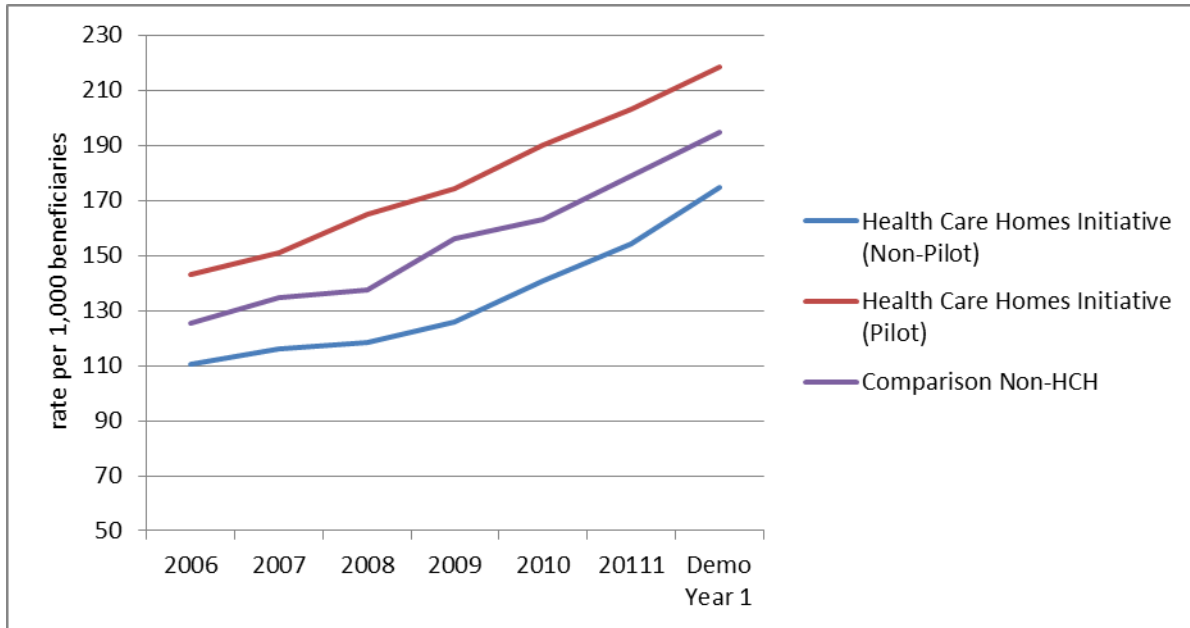
Figure 7-5
Minnesota: Trend in average quarterly rate of all-cause, acute-care hospitalizations per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to HCH pilot and non-pilot practices and comparison non-HCH practices



NOTES: HCH = health care homes; FFS = fee for service; MAPCP = multi-payer advanced primary care practice.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Minnesota started on October 1, 2011, the 2011 averages were calculated over the period January–September 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period October 2011–September 2012.

Figure 7-6
Minnesota: Trend in average rate of ER visits and observation stays per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to HCH pilot and non-pilot practices and comparison non-HCH practices¹

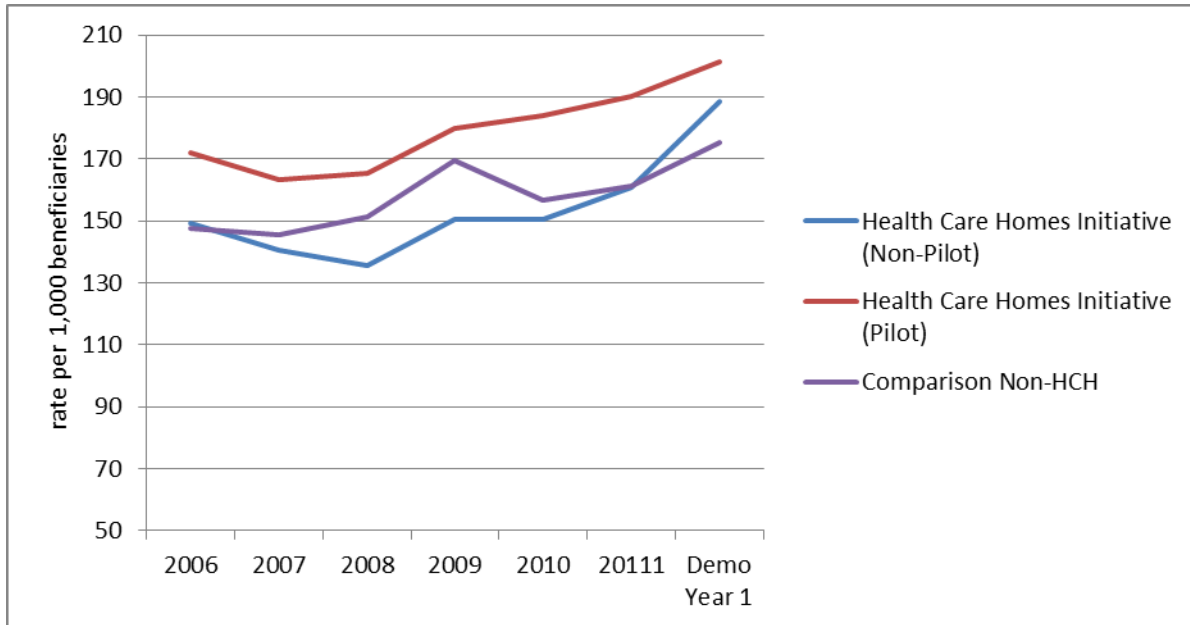


NOTES: HCH = health care homes; FFS = fee for service; MAPCP = multi-payer advanced primary care practice; ER = emergency room.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Minnesota started on October 1, 2011, the 2011 averages were calculated over the period January–September 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period October 2011–September 2012.

¹ This includes ER visits that led to a hospitalization.

Figure 7-7
Minnesota: Trend in average rate of unplanned hospital readmissions per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to HCH pilot and non-pilot practices and comparison non-HCH practices



NOTES: HCH = health care homes; FFS = fee for service; MAPCP = multi-payer advanced primary care practice.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). Because the MAPCP Demonstration in Minnesota started on October 1, 2011, the 2011 averages were calculated over the period January–September 2011. Averages for the first year of the MAPCP Demonstration (“Demo Year 1”) were calculated over the period October 2011–September 2012.

Regression estimates. Quarterly demonstration effects for Medicare expenditures and utilization rates, and their weighted average over the first year of the MAPCP Demonstration, are given in *Table 7-5* and *Table 7-6* for beneficiaries assigned to HCH non-pilot practices (i.e., practices that did not participate in the HCH initiative until Medicare joined as a payer), and in *Table 7-7* and *Table 7-8* for beneficiaries assigned to HCH pilot practices (i.e., practices that participated in the HCH initiative before Medicare joined as a payer).

Table 7-5

Minnesota: Quarterly difference-in-differences estimates for PBPM Medicare expenditures during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to HCH non-pilot practices vs. beneficiaries assigned to comparison non-HCH practices

Quarter	HCH non-pilot vs. CG		
	Total (\$)	Acute Care (\$)	ER (\$)
Oct–Dec 2011	–2.14 (30.03)	–12.91 (19.00)	–2.18* (1.19)
Jan–Mar 2012	22.49 (22.73)	18.83 (15.02)	–3.14* (1.79)
Apr–Jun 2012	–14.97 (24.58)	–10.83 (16.90)	–4.80* (1.49)
Jul–Sep 2012	81.10* (18.38)	54.36* (10.49)	–1.94 (1.46)
Average ¹	20.72 (18.43)	11.63 (11.39)	–3.01* (1.00)

NOTES: MAPCP = multi-payer advanced primary care practice; HCH = health care homes; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room.

The table contains the difference-in-differences estimates for Medicare expenditures during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

¹ This is a weighted average of the four quarterly estimates, where the weights are the numbers of eligible beneficiaries who were assigned to a HCH non-pilot practice in each quarter.

* p<0.10

Table 7-6
Minnesota: Quarterly demonstration effect estimates for utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to HCH non-pilot practices vs. beneficiaries assigned to comparison non-HCH practices

Quarter	HCH non-pilot vs. CG		
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)
Oct–Dec 2011	1 (3.7)	–3 (5.7)	5 (11.9)
Jan–Mar 2012	4 (3.6)	2 (7.9)	20* (10.7)
Apr–Jun 2012	–2 (4.3)	–13 (8.5)	–18 (17.9)
Jul–Sep 2012	10* (2.9)	–1 (6.6)	17 (16.8)
Average ¹	3 (2.8)	–4 (6.1)	6 (9)

NOTES: MAPCP = multi-payer advanced primary care practice; HCH = health care homes; CG = comparison group; ER = emergency room.

The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

Due to the non-linearity of the regression models for utilization, the demonstration effect estimates do not have a difference-in-differences interpretation.

¹ This is a weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who were assigned to a HCH non-pilot practice in each quarter.

* p<0.10

Table 7-7

Minnesota: Quarterly difference-in-differences estimates for PBPM Medicare expenditures during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to HCH pilot practices vs. beneficiaries assigned to comparison non-HCH practices

Quarter	HCH pilot vs. CG		
	Total (\$)	Acute Care (\$)	ER(\$)
Oct–Dec 2011	–42.33 (26.97)	–34.19* (17.26)	–2.40 (1.67)
Jan–Mar 2012	16.97 (27.87)	16.76 (15.54)	–1.93 (1.58)
Apr–Jun 2012	–27.19 (30.02)	–19.40 (20.56)	–1.66 (1.81)
Jul–Sep 2012	23.65 (25.33)	30.17* (14.56)	–0.80 (1.86)
Average ¹	–7.71 (21.27)	–2.14 (12.08)	–1.71 (1.30)

NOTES: MAPCP = multi-payer advanced primary care practice; HCH = health care homes; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room.

The table contains the difference-in-differences estimates for Medicare expenditures during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

¹ This is a weighted average of the four quarterly difference-in-differences estimates, where the weights are the numbers of eligible beneficiaries who were assigned to a HCH pilot practice in each quarter.

* p<0.10

Table 7-8
Minnesota: Quarterly demonstration effect estimates for utilization rates (per 1,000 beneficiaries) during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to HCH pilot practices vs. beneficiaries assigned to comparison non-HCH practices

Quarter	HCH pilot vs. CG		
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)
Oct–Dec 2011	–4 (3.0)	–9* (4.5)	9 (12.2)
Jan–Mar 2012	–1 (5.1)	–4 (8.5)	9 (14.8)
Apr–Jun 2012	–7 (4.4)	–15* (6.3)	–30* (16.8)
Jul–Sep 2012	–1 (3.2)	–12* (6.0)	–18 (16.4)
Average ¹	–3 (3.1)	–10* (4.9)	–7 (9.8)

NOTES: MAPCP = multi-payer advanced primary care practice; HCH = health care homes; CG = comparison group; ER = emergency room.

The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

Due to the non-linearity of the regression models for utilization, the demonstration effect estimates do not have a difference-in-differences interpretation.

¹ This is a weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who are assigned to a HCH pilot practice in each quarter.

* p<0.10

From *Tables 7-5* and *7-6*, we reach the following conclusions about the impact in the first year of the MAPCP Demonstration for Medicare FFS beneficiaries assigned to HCH non-pilot practices (i.e., practices that did not become certified as a HCH until after Medicare joined the state initiative as a payer).

- Between the baseline period and the first demonstration year, the growth in **total Medicare expenditures** and **expenditures for short-stay, acute care hospitals** was similar for beneficiaries assigned to HCH non-pilot practices and comparison practices.
- Between the baseline period and the first demonstration year, **expenditures for ER visits** increased less for beneficiaries assigned to HCH non-pilot practices than for beneficiaries assigned to comparison practices. However, the magnitudes of the estimated effect, $-\$3.01$ relative to comparison practices, was marginal.
- During the first year of the MAPCP Demonstration, beneficiaries assigned to HCH non-pilot practices did not experience a change in the rates of **all-cause, acute care hospitalizations, ER visits** or **30-day unplanned readmissions** relative to beneficiaries assigned to comparison practices.

From *Tables 7-7* and *7-8*, we reach the following conclusions about the impact in the first year of the MAPCP Demonstration for Medicare FFS beneficiaries assigned to HCH pilot practices (i.e., practices that became certified as a HCH early on, before Medicare joined the initiative as a payer).

- The growth in **expenditures for ER visits** was similar for beneficiaries assigned to HCH pilot practices and comparison practices.
- During the first demonstration year, beneficiaries assigned to HCH pilot practices experienced a decrease in the rate of **ER visits** relative to beneficiaries assigned to practices in the comparison group.

Cohort 1 analysis. The quarterly fixed effects model was also estimated using only data from the beneficiaries in “cohort 1.” In Minnesota, these are beneficiaries who were first assigned to a HCH pilot practice, a HCH non-pilot practice, or a comparison practice during the first quarter of the demonstration (October–December 2011); it does not include those beneficiaries who were newly assigned during a later quarter. As discussed in more detail in *Section 1.2.3*, the purpose of a cohort 1 analysis was to measure the demonstration effects on stable intervention and comparison groups. In the data used for this report, cohort 1 beneficiaries comprised 99% of the HCH pilot and non-pilot group and 80% of the comparison group.

The full set of cohort 1 estimates for Medicare expenditures and utilization rates are given in *Tables 7A-1 through 7A-4* in *Appendix 7A*, respectively. For convenience we repeat here the average estimates for the first demonstration year in *Tables 7-9* for beneficiaries assigned to HCH non-pilot practices and in *Table 7-10* for beneficiaries assigned to HCH pilot practices.

Table 7-9
Minnesota: Average demonstration effect estimates during the first year of the MAPCP Demonstration for Medicare expenditures and utilization rates, comparing performance for Medicare beneficiaries first assigned in October–December 2011 to HCH non-pilot practices and comparison non-HCH practices

Outcome	HCH non-pilot vs. CG	
	Average effect	Standard error
Total expenditures (\$)	13.49	(19.58)
Acute care expenditures (\$)	14.32	(12.00)
ER expenditures (\$)	-2.74*	(0.99)
All-cause hospitalizations (per 1,000 beneficiaries)	3	(2.8)
ER visits (per 1,000 beneficiaries)	-6	(7.2)
Unplanned readmissions (per 1,000 beneficiaries)	-1	(10)

NOTES: MAPCP = multi-payer advanced primary care practice; HCH = health care homes; CG = comparison group; ER = emergency room.

The table contains the average demonstration effects and standard errors for the first year of the MAPCP Demonstration, for Medicare expenditures and utilization rates. The average estimate is a weighted average of the four quarterly estimates, where the weights are the numbers of eligible beneficiaries in each quarter.

For Medicare expenditures, the demonstration effects can be interpreted as difference-in-differences.

* p<0.10

Table 7-10
Minnesota: Average demonstration effect estimates during the first year of the MAPCP Demonstration for Medicare expenditures and utilization rates, comparing performance for Medicare beneficiaries first assigned in October–December 2011 to HCH pilot practices and comparison non-HCH practices

Outcome	HCH pilot vs.CG	
	Average effect	Standard error
Total expenditures (\$)	-10.83	(19.46)
Acute care expenditures (\$)	-1.69	(12.16)
ER expenditures (\$)	-1.33	(1.25)
All-cause hospitalizations (per 1,000 beneficiaries)	-4	(3.0)
ER visits (per 1,000 beneficiaries)	-11*	(5.7)
Unplanned readmissions (per 1,000 beneficiaries)	-17	(11.3)

NOTES: MAPCP = multi-payer advanced primary care practice; HCH = Health Care Homes; CG = comparison group; ER = emergency room. The table contains the average demonstration effects and standard errors for the first year of the MAPCP Demonstration, for Medicare expenditures and utilization rates. The average estimate is a weighted average of the four quarterly estimates, where the weights are the numbers of eligible beneficiaries in each quarter.

For Medicare expenditures, the demonstration effects can be interpreted as difference-in-differences.

* p<0.10

On comparing these estimates with the ones for the full sample in *Tables 7-5* through *7-8*, we note the following similarities and differences.

- Similar to the estimates based on the full sample of beneficiaries, the growth in **total Medicare expenditures** and **expenditures for short-stay, acute care hospitals** was similar for cohort 1 beneficiaries assigned to HCH non-pilot practices and comparison practices.
- Similar to the estimates based on the full sample of beneficiaries, the growth in **expenditures for ER visits** was lower for cohort 1 beneficiaries assigned to HCH non-pilot practices than for cohort 1 beneficiaries assigned to comparison practices.
- Similar to the estimates based on the full sample of beneficiaries, cohort 1 beneficiaries assigned to HCH non-pilot practices did not experience a change in any of the utilization measures relative to cohort 1 beneficiaries assigned to comparison practices.

- Similar to the full sample results, cohort 1 beneficiaries assigned to HCH pilot practices experienced a decrease in the rate of **ER visits** relative to beneficiaries assigned to comparison practices.

In sum, the cohort 1 analysis comparing performance of beneficiaries assigned to HCH non-pilot practices and comparison practices revealed no differences with the corresponding analysis based on the full sample. When comparing beneficiaries assigned to HCH pilot practices and comparison practices, the cohort 1 analysis showed no demonstration effects for expenditures for short-stay, acute care hospitals and for the rate of all-cause, acute care hospitalizations, whereas the full sample did. This suggests that beneficiaries who were assigned to HCH pilot practices during later quarters performed relatively well in terms of these measures. On the other hand, cohort 1 beneficiaries assigned to HCH pilot practices seem to perform better in terms of the rate of 30-day unplanned readmissions, compared to beneficiaries who were assigned in later quarters.

Summary of evaluation findings. Our analyses of Medicare expenditures and utilization rates during the first year of the MAPCP Demonstration provide some preliminary evidence about the effectiveness of the demonstration for Medicare FFS beneficiaries. The evidence can be summarized as follows.

- For beneficiaries assigned to HCH non-pilot practices (i.e., practices that became certified as an HCH after Medicare joined the initiative), there is evidence that the state initiative reduced the growth in expenditures for ER visits, although the magnitude of the effect is very small. The other expenditures categories, as well as the utilization measures, appear unaffected.
- There is evidence that the HCH initiative reduced the rate of ER visits for beneficiaries assigned to HCH pilot practices.

7.6.3 Medicare Budget Neutrality in Year 1 of the Minnesota HCH Initiative

We do not present estimates of the degree to which Medicare’s participation in Minnesota’s HCH initiative was budget neutral, due to Minnesota’s unique billing situation.

Normally, we would compare certified HCH practices that were receiving monthly care coordination payments from Medicare through the MAPCP Demonstration to a set of comparison practices that were also certified HCH practices but were not receiving such payments. However, identifying a suitable HCH comparison group has proven challenging in Minnesota, since certified HCH practices that had chosen not to bill Medicare for MAPCP Demonstration payments were often providing HCH services to Medicare beneficiaries and cross-subsidizing the cost of this care using payments from other payers or simply providing these services at a loss – making them an inappropriate comparison group for purposes of a budget neutrality assessment.

Another possible comparison group we could have used was Minnesota practices that had obtained NCQA recognition as a PCMH – but none existed before 2013 in this state. We chose not to use NCQA-recognized PCMH practices from other states as our comparison group

because we believe Minnesota has many unique state-level contextual factors that would have been lost in such an analysis, such as: the large number of practices owned by well-resourced integrated delivery systems in the state; Minnesota’s high rate of EHR adoption; its state-wide quality measure reporting requirements; its prohibition of for-profit health insurance plans; the collaborative culture among its health insurers; and the strong secular move towards ACO contracts in the state.

7.7 Special Populations

7.7.1 Targeting of Special Populations and Tailored Interventions During Year 1

Minnesota’s HCH initiative explicitly targets certain patient populations through its “complexity tier assignment tool”—an algorithm practices use to stratify HCH patients for different payment levels. As noted earlier, the monthly HCH payments that practices can bill are based on the number of major chronic conditions a patient has; practices receive higher payments for patients with a larger number of conditions, and additional payment multipliers are applied if the patient has a serious and persistent mental illness or speaks English as a second language. Because practices now have a financial incentive to identify and offer enhanced services to patients with chronic conditions, a mental illness, or non-native English speakers (particularly the state’s Hmong and Somali population), the state’s hope is that these patient populations will experience improved outcomes. Dual eligible beneficiaries are not targeted except to the extent they are disproportionately represented in the populations identified in the complexity tiers.

7.7.2 Impacts on Special Populations

Quantitative data assessing the impacts of the HCH initiative on special populations are not yet available. In future reports, we plan to report our findings on the impacts of the demonstration on special populations as defined by each state initiative or special populations of policy interest.

7.8 Discussion

The Minnesota HCH initiative is a cornerstone of the state’s comprehensive health reform enacted in 2008, and is intended to transform Minnesota’s primary care delivery system to improve population health, improve patients’ experience of care, and reduce per capita costs of care. Certification of practices has proceeded at a steady pace since the state announced the first certified HCH practices in late summer of 2010, but has lagged behind the state’s original projections.

Unlike other MAPCP Demonstration states, participating practices in Minnesota that have obtained HCH certification must submit claims each month to receive HCH care coordination payments from most participating payers, rather than automatically receiving payments for patients attributed to their practice. (Private payers have been allowed to enter into alternative payment arrangements, such as entering into ACO-style shared savings contracts with HCH practices, and some have chosen to do this.) The major finding from our site visit, analysis of claims for HCH payments, and an informal survey the state fielded among its private payers is that the number of eligible providers billing for monthly HCH claims is significantly lower than expected. For example, in September 2012, only a third of certified HCH practices submitted

MAPCP Demonstration claims to Medicare. Similarly low HCH claims submission rates have been reported in Medicaid and by private payers. A number of explanations have been given by payers and providers for the low number of HCH claims submitted, including the cost of modifying billing systems to generate non-face-to-face claims, the desire to avoid generating claims that would trigger co-pays for patients, and the fact that practices anticipate receiving other revenues to cover the cost of HCH services through ACO-style shared savings arrangements. This low number of providers who submitted claims to receive the monthly care coordination payments available to them through the MAPCP Demonstration has made it difficult to estimate the budget neutrality of Medicare's participation in the state's HCH initiative.

Based on our analysis of Medicare claims data, it does not appear that the HCH initiative has had much impact on key cost and utilization indicators – and the impacts it did have are not always consistent with one another. Looking at our analyses of pilot HCH practices (i.e., those practices that became certified as a HCH early on, before Medicare joined the HCH initiative as a payer), we find that beneficiaries assigned to these practices experienced a decrease in the rate of ER visits in the first year of the MAPCP Demonstration (October 1, 2011–September 30, 2102), relative to comparison group practices – yet the growth in *expenditures* for ER visits was similar for both of these groups. Conversely, turning to our analyses of non-pilot HCH practices (i.e., those practices that became certified as a HCH at the same time or after Medicare joined the HCH initiative), we find that the growth in *expenditures* for ER visits slowed for beneficiaries assigned to these practices, relative to our comparison group – yet ER utilization rates did not change. For both pilot HCH practices and non-pilot HCH practices, the rates of all-cause, acute care hospitalizations and 30-day unplanned readmissions were unaffected.

The fact that the HCH initiative has some impact on ER visits or expenditures is consistent with Minnesota's focus on requiring all certified HCH practices to offer 24/7 access to care. Practices must provide live access to a practice staff member who in turn has access to patients' medical records, to ensure that the staff member has the information they need to best advise the patient. It appears that patients are viewing the availability of such after-hours care as, at least, a partial substitute for visiting the ER. As practices begin to provide more advanced care coordination services, such as care transition nurses to work with newly-discharged hospital patients, we may begin to see changes in hospital readmission rates. Similarly, as practices gain a better understanding of how to best use their care coordinators to help patients with chronic conditions self-manage their conditions, we may begin to see reductions in acute care hospitalizations. Minnesota's experience suggests that the number or costs of ER visits may be the "low hanging fruit" that can be harvested in early years of the medical home initiative, and that reducing hospitalizations and readmissions take more time and effort to achieve.

A few contextual factors should be considered when assessing the impacts of Minnesota's HCH initiative. These factors could have reduced the magnitude of savings attributed to the MAPCP Demonstration, because potential savings and efficiencies had been realized before the MAPCP Demonstration began. Alternatively, they could have facilitated providers' ability to slow the growth of health care spending during the first year of the MAPCP Demonstration by having laid the groundwork needed for the type of practice transformation that produced the savings we estimated. First, there are many complementary (and potentially confounding) payment and delivery system reforms that have been previously implemented, are

currently underway, and are planned in Minnesota, including a strong secular movement toward ACO-style shared savings contracts. Furthermore, prior initiatives have been aimed at improving care quality, and developing HCH capabilities in particular. We also heard from one payer that care coordination has been accepted as a best practice in Minnesota, regardless of whether a practice considers itself an HCH or not. And more generally, the practices we spoke with in Minnesota all appeared to be operating at a relatively advanced level, even though the HCH initiative had only recently begun and some practices had not yet begun to collect HCH payments. Payers also felt that Minnesota practices generally performed at a relatively high baseline level. A 2009 survey found that 73% of primary care practices in Minnesota had already adopted at least some of the components of the HCH model before HCH certification began, and 33% had already participated in the Minnesota Medical Home Learning Collaborative.

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CHAPTER 8 MAINE

In this chapter, we present qualitative and quantitative findings related to the implementation of the Maine patient-centered medical home (PCMH) Pilot, Maine's preexisting multi-payer initiative, which added Medicare as a payer to implement the MAPCP Demonstration. We report qualitative findings from our first of three annual site visits to Maine, as well as quantitative findings using Medicare fee-for-service (FFS) claims data to report characteristics of beneficiaries and participating practices in the state initiative, descriptive statistics and estimates of the demonstration effects for Medicare payment and utilization outcomes, and estimates of budget neutrality.

For the first round of site visit interviews, which occurred from September 26 through September 28, 2012, four teams traveled across the state, covering a geographic region from south of Portland up north to Bangor. The focus of the site visits was on early implementation experiences and practice transformation activities that were necessary to join the MAPCP Demonstration. During the site visit, we interviewed providers, nurses, and administrators from participating practices and collaborating organizations, including staff from community care teams (CCTs), to learn about the effects of the state policies on their practice transformation activities and the quality and effectiveness of the health care they delivered before and after Medicare's entrance. We met with key state officials involved with the implementation of the Maine PCMH Pilot to learn how the payment model and other efforts to support practice transformation, such as learning collaboratives, were chosen and implemented and how specific performance goals were established. We also met with payers to hear their experiences with implementation and whether the payments to practices were effective in terms of producing desired outcomes or whether modifications are warranted. Last, we met with patient advocates and provider organizations to learn if they had observed an improved beneficiary experience with care and any changes to the way care is delivered.

This chapter is organized by major evaluation domains. *Section 8.1* reports state implementation activities, as well as baseline demographic and health status characteristics of Medicare beneficiaries and characteristics of practices participating in the Maine PCMH Pilot. *Section 8.2* reports practice transformation activities. The subsequent sections of this chapter report our findings for the five evaluation domains related to outcomes: quality of care, patient safety, and health outcomes (*Section 8.3*); access to care and coordination of care (*Section 8.4*); beneficiary experience with care (*Section 8.5*); effectiveness as measured through health care utilization, Medicare expenditures, and budget neutrality (*Section 8.6*); and special populations (*Section 8.7*). We conclude this chapter with a discussion of early findings (*Section 8.8*).

8.1 State Implementation

In this section, we present findings related to the implementation of the Maine PCMH Pilot and changes made by the state, practices, and payers when Medicare joined the ongoing multi-payer initiative. We focus on providing information related to a subset of the state implementation evaluation questions that lend themselves to being answered in the early part of the MAPCP Demonstration. Specifically, we address the following:

- What are the features of the state initiative?
- What changes did practices and payers make in order to take part in the Maine PCMH Pilot and meet the participation requirements? What was involved in making these changes? What challenges did they face?
- What kinds of structural and organizational changes did the state, practices, and payers make to accommodate Medicare’s participation in the Maine PCMH Pilot and to better serve the needs of Medicare beneficiaries? How did administrative burdens and resource allocations change as a result of Medicare’s participation?
- Does Medicare’s participation in the Maine PCMH Pilot have any spillover effects on the state’s Medicaid program or private payers?
- What early lessons were learned?

The state profile in *Section 8.1.1* of this report draws on quarterly reports submitted to CMS by PCMH Pilot project staff, monthly state/CMS calls, as well as other sources including news items and state and federal websites, and the site visit that was conducted in September 2012. *Section 8.1.2* presents a logic model that reflects our understanding of the link between specific elements of the Maine PCMH Pilot and expected changes in outcomes. *Section 8.1.3* presents key findings gathered from the site visit and describes the implementation experience of state officials, payers, and providers. We conclude State Implementation section with lessons learned in *Section 8.1.4*.

8.1.1 Maine State Profile as of September 2012 Evaluation Site Visit

The Maine PCMH Pilot was initiated in 2008 following the recommendations of a bipartisan legislative Commission to Study Primary Care Medical Practice, and is intended to transform Maine’s primary care delivery system to one that is patient-centered, effective, efficient and accessible.

Three organizations launched the PCMH Pilot: Maine Quality Forum (part of the Dirigo Health Agency), Maine Quality Counts (a nonprofit collaborative of insurers, providers, and others), and the Maine Health Management Coalition (a nonprofit employer and union-led coalition).⁴² In 2009, after securing the participation of the state Medicaid program, 22 adult and four pediatric practices were chosen to participate in the PCMH Pilot. On January 1, 2010, the Pilot commenced with the participation of Medicaid and three major private health insurers. Despite a change in administration, support for the PCMH Pilot continued with an additional appropriation for Medicaid payments in the 2011 state budget. Additional financial support for implementation of the Pilot has come from the Dirigo Health Agency, the Maine Health Access Foundation, and other private foundations. The MAPCP Demonstration was launched in January 2012.

⁴² The three PCMH Pilot conveners also participate in Aligning Forces for Quality, the Robert Wood Johnson Foundation funded initiative to encourage public reporting of quality data and to provide quality improvement assistance.

State environment. Health care in Maine is organized primarily as a FFS system across public and private payers. Medicaid (MaineCare) operates statewide as a primary care case management (PCCM) program. A small percentage (16%) of Medicare beneficiaries participated in Medicare Advantage plans in 2012. Major private insurers in the State are Anthem Blue Cross Blue Shield, Aetna, CIGNA, and Harvard Pilgrim; all but CIGNA participate in the PCMH Pilot.

Budget challenges are impacting Medicaid coverage in the state. The Maine legislature approved significant cuts in Medicaid in the 2011–2012 legislative session that resulted in the closure of the Dirigo Health Agency, which houses the Maine Quality Forum, at the end of 2013, leaving it unclear where the Maine Quality Forum will reside in 2014. These budget cuts could also result in reducing or eliminating health care coverage for approximately 20,000 people.⁴³ In addition, CMS denied Maine’s request to eliminate coverage for parents with incomes from 100% up to 133% of the Federal Poverty Level (FPL) and for 19 and 20 year olds because of Medicaid maintenance of effort provisions under the Affordable Care Act, while granting permission to reduce coverage under the Medicare Savings Program and eliminate coverage for parents with incomes from 133 up to 200% of the FPL. This will result in reduced benefits for approximately 8,000 people and a loss of coverage for approximately 12,600.⁴⁴

Maine has a number of relevant initiatives across the State that may influence the health outcomes for participants in the PCMH Pilot or comparison group populations. These include the following:

- A Section 2703 Health Home State Plan Amendment was submitted to CMS in the fourth quarter of 2012 by MaineCare to align Maine’s Medicaid health home criteria with the PCMH Pilot. The Maine PCMH Pilot Core Expectations will be used as qualification criteria for participation in the MaineCare Health Homes initiative. Quality Counts and MaineCare collaborated to produce a single application and selection process for both the Phase 2 expansion of the PCMH Pilot and the Health Homes initiative. Most PCMH Pilot practices will serve as Medicaid Health Homes.
- Maine Health Management Coalition, one of the three PCMH Pilot conveners, is encouraging health plan participation in the PCMH Pilot and supports data collection and reporting efforts.
- HealthInfoNet is the non-profit organization operating the state’s health information exchange (HIE) and serving as the Maine Regional Extension Center. Thirty-one of Maine’s 39 hospitals and many ambulatory care sites were connected to HealthInfoNet as of December 2012. Many PCMH Pilot practices are part of the systems that connect to HealthInfoNet, although the process of HealthInfoNet becoming fully functional will continue throughout the demonstration. HealthInfoNet is using additional funding, made available through HITECH and other sources, to

⁴³ Cover, Susan M. “Approved state budget cuts MaineCare, covers gap.” *Portland Press Herald* 16 May, 2012. http://www.pressherald.com/news/approved-budget-cuts-mainecare-covers-gap_2012-05-16.html?pagenum=full

⁴⁴ It is very likely that some of these people are treated in Pilot practices, but there is no way to track the numbers.

increase connectivity with Maine’s other providers. Such efforts include assisting practices with implementation of Electronic Health Records (EHR) systems.

- The Bangor Beacon Community project is working to leverage health Information Technology (health IT) and practice-based care management to improve patient care and quality. Five PCMH Pilot practices (three Penobscot Community Health Center sites and two Eastern Maine Medical sites) participate.
- The State submitted and was awarded a CMS Innovation Center State Innovation Model grant application that supports the formation of multi-payer accountable care organizations (ACOs) by: (1) supporting and strengthening enhanced primary care; (2) supporting and strengthening alignments between primary care and public health, behavioral health, and long-term care; (3) supporting the development of new workforce models for the transformed system, and; (4) aligning measures, data, and analytics across providers.
- Maine was selected by the Robert Wood Johnson Foundation as one of six “superutilizer” national grant sites. The Kennebec Valley Community Care Team will receive technical assistance from the Camden Coalition of Healthcare Providers. The technical assistance will focus on using the Camden Coalition’s “hotspotter” methodology of targeting the most complex patients and focusing on the use of hospital data and outreach to community partners.

Demonstration scope. *Table 8-1* shows participation in the Maine MAPCP Demonstration as of the end of the first year of the demonstration (December 31, 2012). Maine’s demonstration initially included the 22 adult PCMH Pilot practices. The Pilot conveners made the decision to terminate the participation of one practice on September 30, 2012, after being notified that the practice would be closing by December 2012. As a result, there were 21 demonstration practices as of December 31, 2012, and 200 participating providers. The cumulative number of Medicare FFS beneficiaries that had participated in the demonstration for at least three months was 21,497.

Table 8-1
Number of practices, providers, and Medicare fee-for-service (FFS) beneficiaries in the Maine PCMH Pilot

Participating Entities	Number as of December 31, 2012
PCMH Pilot practices ¹	21
Participating providers ¹	200
Medicare (FFS) beneficiaries ²	21,497

NOTE: PCMH Pilot practices include only those practices with attributed Medicare FFS beneficiaries, and participating providers are the providers that are associated with those practices. The numbers of Medicare FFS beneficiaries are cumulative, representing the number of Medicare FFS beneficiaries that had ever been assigned to participating PCMH Pilot practices and participated in the demonstration for at least three months. PCMH = patient-centered medical home.

SOURCES: ¹ARC MAPCP Demonstration Provider File; ²ARC Beneficiary Assignment File (SAS Output tab52c.xls 07/30/2014). (See chapter 1 for more detail about these files).

The state reported the number of all-payer participants enrolled was 68,627 as of the end of year 1 (December 31, 2012). Of the five participating payers, Medicaid is the predominant payer, paying for 43% of PCMH Pilot participants, followed by Medicare (27%), Anthem Blue Cross Blue Shield (17%), Aetna (9%), and Harvard Pilgrim (4%).

Table 8-2 displays the characteristics of the practices with attributed Medicare FFS beneficiaries participating in the Maine PCMH pilot as of December 31, 2012. There were 21 participating practices with an average of ten providers per practice. The majority were office-based practices (52%), but federally qualified health centers (19%), rural health clinics (19%), and critical access hospitals (10%) also participated. These practices were distributed among metropolitan (55%), rural (27%), and micropolitan areas (18%).

Table 8-2
Characteristics of practices participating in the Maine PCMH Pilot as of December 31, 2012

Characteristic	Statistic
Number of practices	21
Number of providers	200
Average number of providers per practice	10
Practice type (%)	
Office based	52
Federally qualified health center	19
Critical access hospital	10
Rural health clinic	19
Practice location type (%)	
Metropolitan	55
Micropolitan	18
Rural	27

SOURCES: ARC Q6 MAPCP Demonstration Provider File and SK&A office-based physician data file (See chapter 1 for more detail about these files).

In **Table 8-3**, we report demographic and health status characteristics of Medicare FFS beneficiaries who were assigned to participating PCMH Pilot practices in Maine during the first 12 months of the MAPCP Demonstration (January 1, 2012 to December 31, 2012). Beneficiaries with less than three months of eligibility for the demonstration are not included in our evaluation or this analysis. Of the beneficiaries who were assigned to PCMH Pilot practices during the first year of the MAPCP Demonstration, 30% were under the age of 65, just over one third (36%) were between the ages of 65 and 75, and almost a quarter were between the ages of 76 and 85, with a mean beneficiary age of 68 years. Fifty-six percent of beneficiaries were female, half of the participants were urban-dwelling, 48% were dually eligible for Medicare and Medicaid, and 39% were originally eligible for Medicare due to a disability. Less than one

percent of beneficiaries had end-stage renal disease and only 0.4% resided in a nursing home during the year prior to their assignment to a PCMH Pilot practice.

Table 8-3
Demographic and health status characteristics of Medicare fee-for-service beneficiaries participating in the Maine PCMH Pilot from January 1, 2012, through December 31, 2012

Demographic and health status characteristics	Percentage or mean
Total beneficiaries	21,497
Demographic characteristics	
Age < 65 (%)	30
Ages 65–75 (%)	36
Ages 76–85 (%)	24
Age > 85 (%)	10
Mean age	68
White (%)	98
Urban place of residence (%)	50
Female (%)	56
Medicaid (%)	48
Disabled (%)	39
End-stage renal disease (%)	.6
Institutionalized (%)	.4
Health status	
<i>Mean Hierarchical Condition Category (HCC) score groups</i>	
	1.11
Low risk (< 0.48) (%)	23
Medium risk (0.48–1.25) (%)	49
High risk (> 1.25) (%)	28
<i>Mean Charlson Index score</i>	
	0.89
Low Charlson Index score (= 0) (%)	59
Medium Charlson Index score (≤ 1) (%)	21
High Charlson Index score (> 1) (%)	20
Chronic conditions (%)	
Heart failure	5
Coronary artery disease	12
Other respiratory disease	14
Diabetes without complications	20
Diabetes with complications	5
Essential hypertension	40
Valve disorders	3

(continued)

Table 8-3 (continued)
Demographic and health status characteristics of Medicare fee-for-service beneficiaries participating in the Maine PCMH Pilot from January 1, 2012, through December 31, 2012

Demographic and health status characteristics	Percentage or mean
Chronic conditions (%) (continued)	
Cardiomyopathy	1
Acute and chronic renal disease	7
Renal failure	3
Peripheral vascular disease	2
Lipid metabolism disorders	29
Cardiac dysrhythmias and conduction disorders	11
Dementias	1
Strokes	1
Chest pain	5
Urinary tract infection	5
Anemia	6
Malaise and fatigue (including chronic fatigue syndrome)	3
Dizziness, syncope, and convulsions	7
Disorders of joint	10
Hypothyroidism	9

NOTE: Percentages and means are weighted by the fraction of the year that a beneficiary met MAPCP Demonstration eligibility criteria. Demographic and health status characteristics are calculated using the Medicare Enrollment Data Base (EDB) and claims data for the one-year period prior to a Medicare beneficiary first being attributed to a PCMH after the start of the MAPCP Demonstration. Urban place of residence is defined as those beneficiaries living in Metropolitan or Micropolitan Statistical Areas defined by the Office of Management and Budget (OMB).

SOURCE: SAS Output tab52c.xls 07/30/2014.

Using three different measures—HCC score, Charlson Comorbidity Index, and diagnosis of 22 chronic conditions—we describe beneficiaries’ health status during the year prior to their assignment to a PCMH Pilot practice. Beneficiaries participating in the PCMH Pilot had a mean HCC score of 1.11, meaning that Medicare beneficiaries assigned to a PCMH Pilot practice were predicted to be 11% sicker in the subsequent year than an average Medicare FFS beneficiary. Twenty-three percent of the beneficiaries had a low (zero) score on the Charlson Comorbidity Index, indicating that these beneficiaries did not receive medical care for any of the 18 clinical conditions contained within the index in the year prior to their assignment to a PCMH Pilot practice.

The most common chronic conditions diagnosed among the Medicare FFS beneficiaries were hypertension (40%), lipid metabolism disorders (29%), (uncomplicated) diabetes (20%), and coronary artery disease (12%).

Practice expectations. All current practices were required to achieve 2008 National Committee for Quality Assurance (NCQA) Physician Practice Connection Patient-Centered Medical Home (PPC[®] PCMH[™]) Level 1 recognition within six months of selection for the PCMH Pilot, plus meet the Pilot's 10 Core Expectations. As of December 31, 2012, 7 practices had achieved Level 1 recognition, 1 practice had achieved Level 2, and 12 practices had achieved Level 3. Core Expectations include

- demonstrated leadership commitment to improving care and implementing the PCMH Pilot;
- team-based approach to care;
- population risk stratification and management of patients who are at risk for adverse outcomes;
- enhanced beneficiary access to care;
- practice integrated care management;
- behavioral and physical health integration;
- inclusion of patients and families in implementing the PCMH model;
- connections to the community, including the local Healthy Maine Partnership and other community resources;
- commitment to reducing unnecessary health care spending, reducing waste, and improving the cost-effective use of health care services; and
- integration of health IT to support improved communication with and for patients.

As a leadership component, PCMH practices must identify care management staff, establish clear roles and responsibilities for these staff, and provide care management training. To foster quality improvement and practice transformation, practices are required to participate in three learning collaborative sessions each year and regular PCMH practice leadership team webinars.

Support to practices. Participating practices receive payments from public and private payers to support care management activities. Since January 2010, Medicaid has been paying practices \$7.00 per member per month (PMPM), half of which is the standard Medicaid PCCM payment and half of which is an additional care management fee. Practices receive a care management fee of approximately \$3.00 PMPM (specific payment amounts are confidential) from commercial insurers. As of January 2012, Medicare began paying a care management fee of \$6.95 PMPM. Between January 1, 2012, and December 31, 2012 PCMH Pilot practices and CCTs received a total of \$2,203,295 in payments from Medicare for beneficiaries assigned to their practices during the first year of the demonstration.

The Maine PCMH Pilot launched CCTs in January 2012 to provide additional care management support to participating practices' most complex patients. Eight CCTs each serve

one or more PCMHs, providing their patients with services that include needs assessment, nurse care management, panel management (i.e., screening, patient identification, scheduling appointments, referrals to care managers and other team members), brief intervention and referral for mental health and substance abuse services, psychiatric prescribing consultation, medication review and reconciliation, transitional care, health coaching, self-management of chronic disease, and connection with community resources. Two new CCTs will be added in 2013 as the demonstration expands to 50 additional practices. All participating payers support CCT services with additional fees. Consistent with the higher needs populations they serve, MaineCare (\$3.00 PMPM) and Medicare (\$2.95 PMPM) make larger CCT payments than do the commercial payers (\$0.30 PMPM).

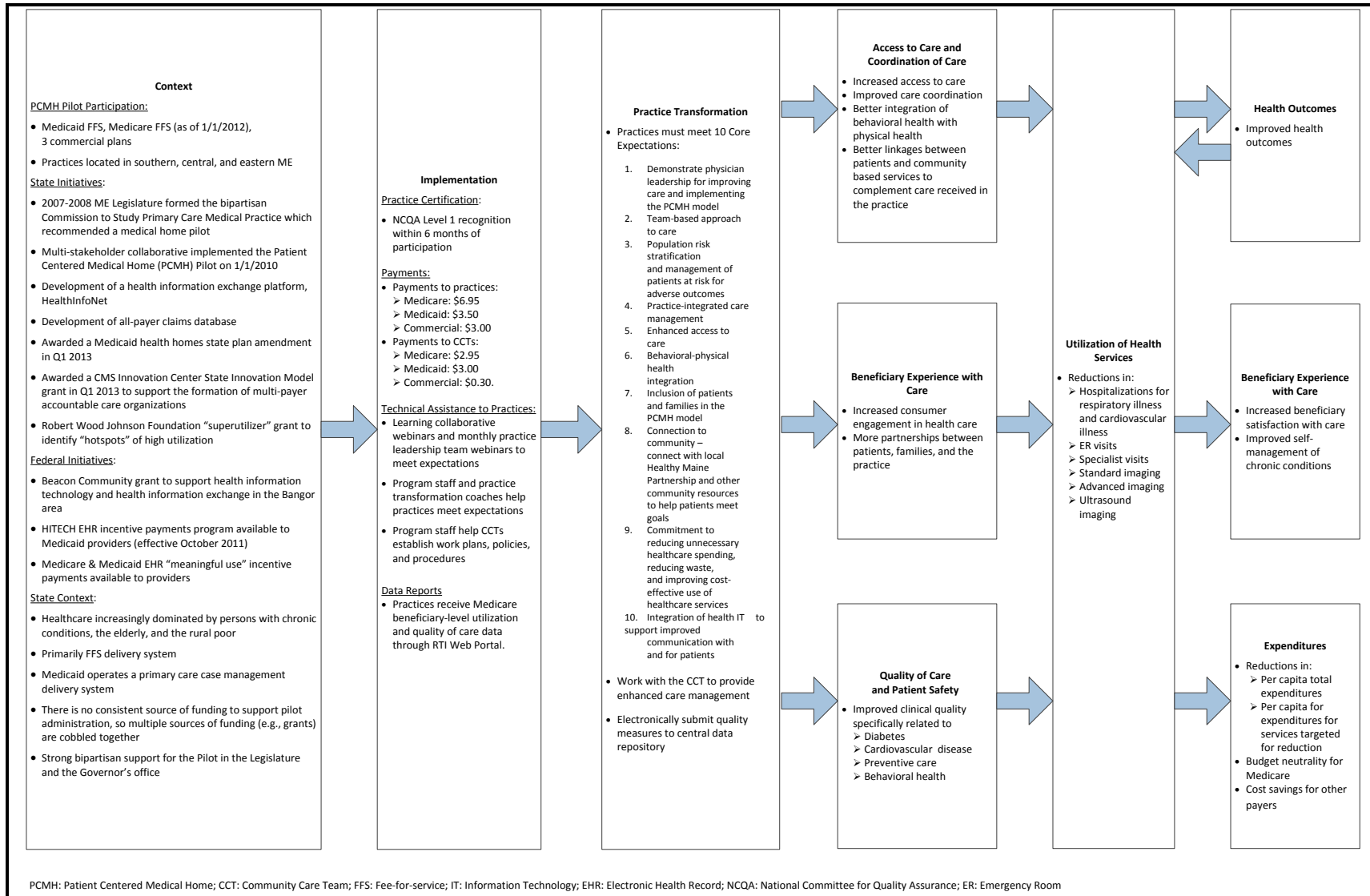
In addition to the learning collaboratives and practice leadership team webinars noted above, quality improvement practice coaching is available from the Maine Practice Improvement Network. Project staff also contract with experts for technical assistance to practices when a subject is outside the Pilot staff's and coach's areas of expertise, such as behavioral health integration, connecting practices with community-based support, and health IT support.

Data and analytics to support clinical care, quality improvement, practice transformation and project evaluation come from various sources. Providers were receiving practice-level feedback addressing dimensions of clinical care and costs. These semi-annual reports were developed through analytic services from Health Dialog that utilized the Maine Health Data Organization's (MHDO) All Payer Claims Database (APCD). That contract ended in 2012 and officials in the state hope to begin providing practice reports again in the first half of 2013. HealthInfoNet is connecting practice and hospital electronic EHRs through the health information exchange (HIE) and to MHDO, and providing a secure portal for accessing patient information, a centralized patient registry, and a quality reporting tool. The Dirigo Health Agency is leading a statewide effort to survey patients about their care experiences; the surveys were fielded from September through November 2012. Maine has contracted with researchers at the University of Southern Maine (USM) Muskie School of Public Service to conduct an evaluation of utilization, cost, and quality outcomes.

8.1.2 Logic Model

Figure 8-1 portrays a logic model of Maine's PCMH Pilot. The left-hand side of the figure describes the context for the demonstration. These include the scope of the demonstration, other state and federal initiatives that affect the PCMH Pilot, and the key features of the state context that affect the Pilot. The context informs the implementation of the PCMH Pilot, which incorporates a number of strategies to promote transformation of practices to PCMHs. Beneficiaries in these transformed practices are expected to have better access to care and coordinated care; receive safer, higher quality care; and be more engaged in decision making about their care and management of their health conditions. These improvements promote more efficient utilization patterns, including reductions in hospitalizations, emergency room (ER) visits, specialist visits, and imaging services. These changes in utilization patterns are expected to produce improved health outcomes (which can, in turn, reduce utilization), greater beneficiary satisfaction with care, changes in expenditures consistent with utilization changes, and reductions in total per capita expenditures, resulting in budget neutrality for the Medicare program and cost savings for other payers involved in the initiative.

**Figure 8-1
Logic Model for Maine PCMH Pilot**



8.1.3 Implementation

This section uses primary data gathered from the site visit to Maine in September 2012 and presents key findings from the implementation experience of state officials, payers, and providers to address the evaluation questions described in *Section 8.1*.

External Factors Affecting Implementation

Throughout the lifetime of Maine’s PCMH Pilot, the political landscape in Maine has been dynamic. Support for the PCMH Pilot has continued through changes in the state legislature from Democratic to Republican control in the 2010 elections and back to Democratic in the 2012 elections, and from a Democratic to a Republican administration in the 2010 gubernatorial election.

Despite continued bipartisan support for the PCMH Pilot and the support of the current governor, the future of state funding for the Pilot’s staff is not clear. The administration plans to phase out the Dirigo Health Agency, home to the Maine Quality Forum, by the end of 2013. Though informants from the state expressed confidence that the Maine Quality Forum and its work would continue, its future remains uncertain. This has significant implications for the MAPCP Demonstration because the Dirigo Health Agency provides crucial sources of funding to the PCMH Pilot, including, among other things, funding a significant portion of the project director’s time. Whether that funding can be shifted to the Medicaid agency and made available to the PCMH Pilot is unknown at this time.

Despite this uncertainty, there is strong private sector buy-in for the PCMH model and the PCMH Pilot from both commercial payers and employer groups represented by the Maine Health Management Coalition. Payers believe in the model; informants from employer purchasing groups made it clear that they think the model will provide their employees with better quality care and patient experiences, along with potential health care savings. They considered their participation as a “no brainer,” but they are anxious to learn about their actual return on investment.

Payers may have additional demands on their attention if Maine receives a federal State Innovation Model grant to explore multi-payer ACOs. A number of interviewees reported that ACOs were already under development in Maine and expressed uncertainty about how ACOs would interact with the PCMH Pilot.

Evolution of Pilot Implementation with Medicare’s Entrance

Structural and organizational changes needed to accommodate Medicare. Strong leadership and buy-in for the concept by all the stakeholders at the table, represented through the three convener organizations, resulted in collaborative efforts that made the state experience in getting the PCMH Pilot up and running relatively straightforward. Although requiring extensive discussions and work, challenges in getting the payers to agree on a common approach were minimal in Maine.

The three participating commercial insurers in the state—Anthem Blue Cross Blue Shield, Aetna, and Harvard Pilgrim—send their per member per month (PMPM) contribution for care management services to Quality Counts, which houses the program staff, and the program

distributes the money to participating practices. Some of the CCT payments also flow through Quality Counts, though some payers pay the care teams directly. Other participants like the state employees plan, unions, large employers, and universities do not handle the administrative aspect at all; the commercial payers, acting as third party administrators, assume responsibility for their contributions. As a result, joining the PCMH Pilot was administratively easy for those purchasers.

While interviewees reported minimal organizational changes to accommodate Medicare's participation, Medicare's entrance did have important administrative implications for the introduction of CCTs. The additional funding from Medicare's participation has provided extra dollars needed to support the CCTs. The launch of the CCTs, however, created additional administrative and organizational complexity for the PCMH Pilot and implementing the CCTs has proven to be more challenging than anticipated. Working out the legal implications and developing the contract language took months longer than the conveners had expected; for instance, payers were concerned that CCT payments would be attributed to the administrative side of their fee structures, because of the medical loss ratio requirements imposed by the Affordable Care Act. To address the CCT payment issue, Quality Counts was brought in to play the role of fiscal intermediary for some of the payers, resulting in thousands of dollars of additional legal expenses for Quality Counts that had not been budgeted.

Attribution and enrollment before and after Medicare's entrance. The attribution process for the commercial payers and MaineCare did not change with the entrance of Medicare. Attribution in the PCMH Pilot is based on assignment of enrollees to a primary care provider rather than any active enrollment process. To ease the attribution process, one commercial payer initially limited participation in the PCMH Pilot to its health maintenance organization (HMO) and point of service plans because enrollees were required to designate a primary care provider. MaineCare relies on the provider assignment for its PCCM program to attribute Medicaid beneficiaries to providers participating in the PCMH Pilot. Inaccuracies in data obtained from the MaineCare claims system have posed challenges for attribution because MaineCare reviews beneficiaries' claims history to assign a primary care provider when beneficiaries do not choose a provider.

Resolving issues with the Medicare attribution process is still a work in progress. One informant noted that some providers "had a hard time figuring out who was on their panel, since many are summer residents. They had people that they would have considered to be their Medicare patient, that were not considered their patient by CMS." Consequently, some of the CCTs have found their panel sizes to be less than expected because their estimates of the number of Medicare beneficiaries attributed to the practices they serve were incorrect.

Changes in resource allocations and financing as a result of Medicare's participation. Financing the PCMH Pilot did not change substantially with the entry of Medicare, except for an additional PMPM commitment from the payers to support the work of the CCTs.

The PMPM payment approach has been well-received by stakeholders and PCMH Pilot participants. One interviewee declared that "per member per month is the way to go" because it couples the support and the latitude that service and care providers need to meet the goals of the

PCMH Pilot: “It’s the way to try to provide as much access as possible and be as responsive as we possibly can be.” However, one payer did note that this payment methodology inhibits payers’ “ability to actually determine how the money is used [in practices] and see measures of success documenting the usage.” This was evident during the site visits, as informants outside of practices were rarely able to say with confidence how the PCMH Pilot payments were being put to use by participating practices.

Securing adequate financing for the administration of the PCMH Pilot remains an ongoing challenge in Maine. The lack of funding for the infrastructure supporting the PCMH Pilot is an important constraint, although by all reports Quality Counts does an excellent job with the funds they have. Despite effective collaboration among the Pilot’s three conveners, they are always cobbling together funding to conduct learning collaboratives and provide other support functions for the practices. One stakeholder quipped, “We are out here basically holding bake sales to do this stuff.”

Spillover effects on Medicaid and private payers as a result of Medicare’s participation. Medicare’s participation had some important positive spillover effects on the PCMH Pilot and its participants by invigorating the effort. One informant described Medicare joining the PCMH Pilot as a “shot in the arm” that is now allowing the PCMH Pilot to spread to enough practices that employers see value in adjusting benefit designs to incent primary care. The State was able to leverage Medicare’s entrance to secure additional commitments from participating commercial payers and other purchasers Medicare’s participation helped convince them to agree to expand to additional practices and increase their commitment from three years to five, extending the life and scope of the PCMH Pilot. As one convener explained, “We didn’t have a hard time convincing them [the commercial payers] once Medicare came on. It’s had a huge impact.”

Because the number of Medicare beneficiaries covered by the PCMH Pilot under Phase 1 was lower than projected, CMS allowed the Phase 2 expansion to include 50 new practices, far more than the 20 new practices originally planned. The other participating payers and Medicaid agreed to support this larger expansion, substantially increasing the size of the initiative.

Impact of data systems in the Maine PCMH Pilot. Maine boasts one of the country’s oldest APCDs and has a leading HIE, HealthInfoNet. However, data streams in the state are not integrated. Neither the HIE nor the APCD are used to help the conveners implement the PCMH Pilot or to help the participating practices improve care delivery. Discharge data from hospitals and claims data remain siloed.

Making the available data useful for participating practices has been a challenge for the Pilot since its inception. Providers around the state vary widely in their data analysis capacity. While large hospital systems and practices associated with them have or contract out for the resources to conduct their own data analysis, smaller hospitals and practices lack these capabilities and cannot use the data available to them to support practice improvement. One informant observed that “although we’ve been a state that is really rich in collecting data, I don’t think we are a state that is rich in analytics.” The MHDO and Onpoint Health Data, the developer of Maine’s APCD, are working to provide analytic capacity to practices.

In addition to these challenges with analysis within the PCMH Pilot, Maine has experienced ongoing challenges with Medicaid data collection that have affected the evaluation of the Pilot. The state's Medicaid claims processing system was replaced in 2010, and officials are still resolving data integrity issues within the system, including inaccurate eligibility information in the claims processing system. The State was hoping to have corrected eligibility information by mid-November 2012 that would be available by January 2013 in the APCD.

CMS makes Medicare data available to participating practices through a web portal created by RTI. The portal provides access to utilization reports and patient-specific information that is used by both practices and CCTs.

Impact of technical assistance to practices in the Maine PCMH Pilot. One of the most useful features of the state's initiative is the extensive work Quality Counts has done with practices to help them meet the goals of the program. Providers have been able to receive assistance from Quality Counts through monthly webinars, calls with quality improvement coaches, regional practice support sessions, and a PCMH Pilot expansion launch event. Quality Counts staff and, in particular, its executive director both received praise from interviewees for keeping the PCMH Pilot well-organized. Interviewees shared very positive overall views of the PCMH Pilot, in large part due to the tireless efforts of Quality Counts and the supports they provide.

Medicare joining the PCMH Pilot did not require changes to the state's technical assistance strategy, beyond expanding it to include CCTs. The state's CCTs receive technical assistance similar to that offered to the practices, including webinars, in-person learning sessions, and site visits by Quality Counts staff. Quality Counts has also supported two CCT mentors who participate in bi-weekly calls with the CCTs and are available to consult with the teams by phone or by email. The expansion of the PCMH Pilot to 50 additional practices and two additional CCTs in January 2013 requires Quality Counts to scale up its technical assistance. Webinars aimed at the 50 new practices and an expansion launch event were held in 2012.

8.1.4 Lessons Learned

Maine's PCMH Pilot has a solid foundation to build on going forward, based on the strong relationships that have been built between the state, commercial payers, and employer groups. The state laid the groundwork for multi-payer collaboration for the PCMH Pilot before Medicare joined, leveraging resources provided by an Aligning Forces for Quality grant from the Robert Wood Johnson Foundation. As a result of Maine's success in achieving strong buy-in from stakeholders, interviewee after interviewee indicated that multi-party collaboration is working very well in Maine.

Strong buy-in from the governor of the state and the commitment and hard work of each of the collaborative members have been crucial factors for success in Maine, as has the highly touted and effective leadership of Quality Counts. However, even support from the governor has not insulated the initiative from fiscal challenges.

The Maine PCMH Pilot is showing the potential benefits of a phased approach to rolling out multi-payer initiatives. The state's opportunity to expand the PCMH Pilot to include an additional 50 practices has had an important and positive effect. Officials were confident that

lessons learned during the first phase of the PCMH Pilot would be useful in ensuring the second phase goes smoothly. The phased approach to the PCMH Pilot will also allow leading practices to mentor and encourage the 50 practices that are joining in 2013.

This expansion and sustained buy-in from participants would not have been possible without the participation of Medicare. Interviewees agreed that Medicare's financial support has been hugely important to the PCMH Pilot.

The PCMH Pilot's expansion will add urgency to the need to resolve the state's lingering data and funding issues. Having consistent and adequate funding sources for the PCMH Pilot is critical for Quality Counts staff and ensuring supportive functions and linkages are in place for participating practices.

A key issue that will be watched closely by the PCMH Pilot's conveners and participating payers is its ability to show a return on investment. The inability of the PCMH Pilot to show a return on investment thus far presents serious risks to the program going forward with respect to commercial payers. One informant suggested that if some payers do not begin to see that information within the next 3 to 6 months (from the September 2012 interview date), they are not sure they can maintain payer support for the PCMH Pilot. State conveners also expressed frustration at the lack of data showing a return on investment.

8.2 Practice Transformation

This section seeks to answer evaluation research questions related to describing the features of the practices participating in the PCMH Pilot, identifying the changes that practices make in order to take part in the demonstration and meet participation requirements, describing technical assistance to practices, summarizing early views on the payment model, and giving an account of experiences with the demonstration thus far. This report presents findings from our initial site visit and secondary data provided by the state to answer these research questions.

8.2.1 Changes Practices Made to Join the Demonstration

Practices are making a number of changes related to NCQA PPC[®] PCMH[™] recognition, administrative issues, and health IT, in order to participate in the MAPCP Demonstration.

PCMH recognition. Consistent with their being chosen as early adopters, most of the participating practices believed they were already meeting many of the expectations of a medical home before joining the PCMH Pilot. According to baseline data collected by the Muskie School of Public Health (Payne & Gray, 2011), 80% of Pilot practices were using an EHR, 68% reported having some sort of care coordination program, and essentially all had taken steps to improve access to care. However, none of the practices had achieved NCQA PPC[®] PCMH[™] recognition prior to their participation in the PCMH Pilot, and all acknowledged making substantial changes in their practice as a result of participating. Practices were required to achieve 2008 NCQA PPC[®] PCMH[™] recognition within six months of selection, and according to the Muskie data, within 4 months of the Pilot's implementation in 2010, 50% of the practices had achieved NCQA Level 1 recognition, 19% were at NCQA Level 2, and 31% were already at NCQA Level 3.

A hallmark of the Maine PCMH Pilot was the state's expectation for the practices to focus on 10 Core Expectations. It was evident in visiting practices that these Core Expectations provided a framework that prioritized and guided practice transformation; almost every practice was able to describe improvements in each of the domains, and conference room walls were covered with posters and work sheets on the 10 Core Expectations, often with charts of progress towards meeting goals in each area. According to self-reported data collected by Quality Counts, by the end of Pilot year 1 (2010), 24 of the 26 practices (this includes the 4 pediatric practices in the Pilot that are not part of the MAPCP Demonstration) had met all of the critical elements of the 10 Core Expectations and at least 80% of all the Core Expectations.

The PCMH Pilot stimulated a wide range of improvements in the practices included in the site visit. Many of these changes were designed to help achieve NCQA PPC[®] PCMH[™] recognition, including better documentation of office policies and procedures, use of an EHR, expanded hours, and improved care coordination. All of the practices we visited had incorporated process-of-care improvements, such as using pre-visit checklists, providing better patient education materials, compiling post-visit summaries including care plans, and using reminders to have laboratory tests done. Several practices we interviewed during the site visit had started innovative new programs, such as group clinics (e.g., for diabetics or patients with chronic pain), new patient education classes, wellness counseling, and initiatives to work collaboratively with palliative care programs and hospices.

Starting to acquire, review, and use quality data to improve performance was also a new process for many practices. Typically the practices picked projects that aligned with the 10 Core Expectations, and they approached these projects with standard "Plan-Do-Study-Act" quality improvement cycles.

Among the practices we interviewed, the larger practices seemed to have a number of advantages in meeting the 10 Core Expectations, implementing care coordination, using and improving their EHR, and starting to use data to improve performance. The larger practices were already further along before joining the PCMH Pilot, and were able to make faster progress once the PCMH Pilot started.

Administrative changes. Most practices reported only minor changes in their administrative structures, although some reported that the PCMH Pilot stimulated important discussions with local hospitals or local specialist consultants. Many practices we spoke to examined how to optimally use their existing staff to improve care, leading to role refinements, new assignments, and clarification of how the practice would function as a team. Some practices added new staff positions, such as medical technicians or physician extenders, and other practices redefined the job descriptions of existing staff, for example designating one of the RNs to perform quality reviews, or one of the physicians to become the "lead quality champion." Most practices interviewed had started or increased the frequency of staff meetings.

A unique aspect of the Maine PCMH Pilot is the core expectation to engage patients in meaningful practice improvement efforts. At the practice level, this was reflected in establishing patient advisory councils or the equivalent; these councils had been adopted by essentially all of the practices we spoke to and none had advisory councils before the PCMH Pilot program. Although practices were leery initially, almost all reported that they now valued the input from

their councils, and actually enjoyed these meetings. The patient engagement projects were further supported by the Maine Quality Counts council and a grant from the Robert Wood Johnson Foundation. The councils provided input and, in some cases, voluntary assistance on constructing a new patient brochure, handling appointments and phone calls, improving office triage, and identifying what patient resources should be available in the waiting room. The councils also provided input and assistance in conducting patient satisfaction surveys, and functioned in many ways as an ongoing “patient focus group” for the practice.

Health information technology. As of December 2012, all but one of the 22 participating practices had implemented an EHR. The EHR each practice used was generally different and did not allow information sharing across practices or with the practice’s local hospital. The functionality, ease-of-use, and satisfaction varied considerably from one EHR to another. Generally, the practices use of an EHR facilitated compliance with providing preventive services (vaccinations, cancer screenings, screening for hypertension or depression or alcohol abuse) at all sites. The practices also used EHR functionality to close the loop and ensure that ordered tests and consults were completed.

All of the practices we interviewed reported using disease registry data to monitor the quality of care and preventive services offered to their patients, another new endeavor sparked by participating in the Maine PCMH Pilot. Typically, these practices used the registry functionality provided by their own EHR and focused on patients with common chronic conditions, such as diabetes and hypertension, and also on patients with multiple comorbidities for more intense surveillance or treatment. The EHR reporting functionality could provide, for example, the HbA1c values for all the diabetic patients in the practice, the average blood pressure values of patients with hypertension, and information on compliance with cancer screening and screening for depression, smoking, and alcohol abuse.

Practices were also using external data. For example, vaccination data provided by the State were being used to help ensure compliance with prevention measures, and data provided by their local hospitals on patients with recent visits to the emergency room (ER) or recent admissions were being used to identify patients needing care transition coordination and to identify patients with frequent admissions or ER visits. Several practices commented on the usefulness of the reports on Medicare beneficiaries, available through the RTI web portal, in identifying gaps in care.

HealthInfoNet is the HIE platform and data repository administered by the Maine Regional Extension Center, through funding by Quality Counts. As of December 2012, HealthInfoNet had successfully connected Maine hospitals to each other, but only a limited number of practice sites were connected and using the system. HealthInfoNet is not expected to be functional across primary care practices within the life of the Maine PCMH Pilot. As an alternative mechanism to share quality data with the state, Pilot practices have been submitting quality data to a platform administered by the University of New Hampshire. Due to technical and financial challenges at the state level, the PCMH Pilot will not be able to provide practice feedback reports using data collected in the APCD until 2013.

8.2.2 Technical Assistance

The state convener, Maine Quality Counts, partnered with the Maine Primary Care Association to sponsor four specific PCMH assistance programs:

1. Pilot practice leadership webinars are monthly webinars that allow practices that had made progress in a specific area to share their lessons learned with other practices. Essentially all of the practices reported having made specific progress within their own practice based on suggestions from these webinars.
2. Learning collaborative sessions are day-long meetings, held three times a year. Practices are required to participate and all sent one or more representatives. Topics chosen for presentation were based on the 10 Core Expectations or common problems, and included such topics as visit pre-planning, open access scheduling, and establishing patient advisory councils.
3. Quality improvement coaches were provided to some, but not all, practices. Some coaches were provided by local hospitals, and some through a collaborative arrangement between Maine Quality Counts and the Maine Practice Improvement Network, a separate state initiative. Coaches worked directly with Pilot practices to identify areas for improvement, develop plans for change, and help assess their impact on the practice. Coaches also assisted with behavioral health integration, connecting practices with community based support, and health IT support.
4. Regional support sessions were held in the Spring of 2011, focusing on variations in practice (identified from Practice Performance Reports generated by Health Dialog) and opportunities to reduce readmissions. These sessions brought together several practices in one area and provided an opportunity to share ideas and approaches to common issues encountered in implementing PCMHs.

Practices viewed the learning collaborative sessions and the monthly webinars as being extremely valuable, and participation has been excellent. Practices we spoke with especially valued being able to learn from and support each other. The practices had the opportunity to interact face-to-face at both the learning collaborative sessions and the regional support sessions, and interactions continued during the webinars. Several practices singled out one of the learning collaborative sessions that focused on how to train and use medical assistants, based on a training program developed at Maine General Hospital, as particularly helpful. Sessions on pre-visit planning, open access scheduling, and establishing patient advisory councils were also mentioned as being helpful.

Practice coaches were also very well received; one practice staff member told us, “We were given a coach—she has been invaluable. Every pilot should have one.” Another said, “You have to get a coach—having a coach is invaluable.”

One practice staff member told us that the “strength of the Pilot is how they are organized. I think they’ve done a fabulous job with bringing practices together that have been selected to be in the Pilot and the networking. I think we’ve learned a tremendous amount from the quarterly educational sessions and monthly phone calls. They have done a fabulous job of setting that up. We have all learned a tremendous amount from each other so that we aren’t each

just recreating the wheel. It's a lot of change and you get frustrated so those [learning opportunities] are really helpful to keep people inspired and working towards their goals.”

8.2.3 Payment Supports

In our discussions with practices, all of them appreciated the financial support provided by the PCMH Pilot. One commented: “I think the way CMS has funded this initiative is a good model—the use of PMPM. If they want patients in a medical home this is how they need to do the funding. The funding mechanism is a good one.”

Many of the practices commented that Medicare funding had helped in securing additional resources for their practices in support of the medical home. Practices with significant Medicare populations were especially delighted to see the increased revenue, and were using these funds to further enhance care and access and to develop or enhance care coordination services. Some used funds to support their bottom line or to hire staff. A few practices reported that the PCMH Pilot funding went directly to a higher level of their organization, limiting their control over how the funds could be used. One had obtained an on-site pharmacist and was planning an on-site anticoagulation clinic. Another had increased the time provided by care coordinators. A third hired a nurse who supported patient education and care coordination.

Although all the practices found the PCMH Pilot funding had helped substantially in meeting PCMH expectations, several said the funding was inadequate to meet all the expectations of a PCMH, such as providing care coordination for all the patients who would benefit from this service. One commented that “we’re getting \$250,000 a year (from all payers). To really do it right we would need \$500,000.” Some practices lamented that more private payers should participate, and that those participating were paying less than the Medicare PMPM rates. One said: “The feds are basically subsidizing the nonpaying/low paying commercial insurers.”

8.2.4 Summary

All of the practices we spoke with were universally happy with the Maine PCMH Pilot and their decision to join. They all felt that the quality of care had improved within their practices, along with patient and provider satisfaction. Most appreciated the many ways that the PCMH Pilot had facilitated their ability to provide high quality and coordinated care. They felt their practices had clearly advanced, in comparison to community practices that had not participated in the PCMH Pilot. Several practices mentioned that they would focus on improving behavioral health services in the future.

The practices voiced several common complaints and concerns, especially their displeasure with the NCQA PPC[®] PCMH[™] recertification requirements. All the practices we spoke with said that the initial recognition process was difficult, and that the recertification process they were all now going through was even worse because the NCQA PPC[®] PCMH[™] standards have changed with the updated 2011 standards. Specifically, the 2011 standards require documenting a clinical care plan, providing patients with a clinic visit summary, documenting full referral tracking, and providing patient education packets. The initial NCQA PPC[®] PCMH[™] application process was especially difficult for the smaller practices. Commenting on the recertification and new standards, one practice lead said, “It makes it almost

unbearable to the practice—the stress level and resources needed to get that recognition.” Another said, “The Pilot has been very disappointing in how they prepared us for this new NCQA. NCQA changed its criteria and we were completely unprepared for that.”

Practices we spoke with were also worried about what would happen if PCMH Pilot funding ended, as it had supported so many different aspects of their improvement programs. One memorable quote we heard on our site visit came from a particularly candid practice staff: “If they don’t keep it going, we will quit.” Another put it more diplomatically, saying: “After the Pilot is over, we may have trouble sustaining some of the positions that we have created.”

8.3 Quality of Care, Patient Safety, and Health Outcomes

8.3.1 Implementation of State Initiative and Practice Features Expected to Improve Quality of Care, Patient Safety, and Health Outcomes During Year 1

Practices use a variety of health IT tools to improve patient quality of care, including EHRs, chronic disease registries, RTI’s Medicare beneficiary utilization reports, and daily discharge reports from local hospitals. Practice staff uses these tools to monitor key quality indicators for their patient panel, identify specific patients that need more attention, and provide specific protocols for office visits, tailored for each patient.

Clinical quality data are reported through the web-based portal maintained by the University of New Hampshire Regional Computing Center. Practices extract data associated with 31 quality indicators on a quarterly basis. Although most interviewed practice staff said that they had implemented some of the required patient safety and quality of care practices prior to the PCMH Pilot, they had not been documenting them nor doing them on a regular basis until the PCMH Pilot. Most practices noted that they focus on clinical indicators for diabetes, asthma, and cardiovascular disease, as well as preventive measures, such as pneumovax immunization rates and regular mammogram and colon cancer screenings. A practice staff member said, “We now [generate] reports on our diabetic patients, our hypertension patients, obese, cardiovascular patients, and [key] preventive measures. And we have seen where we were deficient.” A couple of payers incentivize practices based on a review of quality measures, although they did not specify which ones. One payer sets quality targets and increases the PMPM payment to practices if those targets are met for care management services.

Practices use hospital discharge reports to identify patients who were admitted or visited the ER. They routinely call these patients to make sure that they are taking appropriate medications, understand their care plan, and have made a follow-up appointment with their primary care provider, if needed. Representatives of some of the CCTs that were interviewed noted that they also use the daily reports from hospitals to identify patients that meet the criteria for follow-up care. One CCT provider said, “We’ll find groups of patients that we’re not calling or optimizing as much as we should. It’s a very important tool.” CCTs also use Medicare beneficiary utilization data available through the RTI web portal and lists of patients provided by practices to identify patients that may need extra resources. Practices and CCTs work closely together to coordinate their efforts. A few practice staff noted that it would be more practical and useful if they had one report for their entire patient panel, rather than by specific payers.

Some practices we interviewed use EHRs that include a feature to generate individualized office visit plans directly from their EHR, using standard evidence-based practices. For example, a planned office visit with a diabetic patient could include the standard of care practices (e.g., foot exams), as well as any immunizations or other screenings that may be due. Some practices provide patients with a written care plan or summary of their visit, again using standard of care protocols that are integrated into their EHR. At least one practice provider shared that creating a care plan and documenting it, especially for chronic diseases, was challenging because of limitations with their particular EHR system. At least one practice also mentioned the challenge of sharing each person's care plan with all of the involved providers, but expressed optimism that this feature would soon be available via a care plan messaging pilot.

Some practice administrators and providers said that although some health IT tools were available to them before the PCMH Pilot, their practice did not have sufficient resources to spend the time necessary in working with the reports. The funding available through the PCMH Pilot allowed practices to hire more staff and enhance their health IT capabilities. Despite additional resources, some of the practices we spoke with were still struggling to make the best use of their data because of the functional limitations of their EHR system, inability to integrate their systems with other providers or hospitals, and lack of an all-payer claims report.

In addition to using health IT data to support improvements in quality of care, several practices mentioned that they have monthly quality meetings to review their data, quality improvement projects, readmissions, and ER use. These practices also have regular team huddles to discuss specific patients and develop an individualized care plan to best meet their needs. CCT providers were often included in these huddles and were well integrated into practices to provide seamless transition of care from practices (i.e., "warm" patient handoffs).

The most common patient safety improvement mentioned by practices was implementation of medication reconciliation as part of patients' standard of care. One practice said that they print a patient's medication list every time they come into the office and enter it in the chart to review with the patient. At least two practices noted that patients can see their medication list on their EHR portal. A CCT provider noted that they use HealthInfoNet to compare the medication list with the medications listed in the EHR. One practice shared that when they focused on medication reconciliation, they discovered that when they took a patient off a medication it was not discontinued at the pharmacy level. This underscored the importance of doing the reconciliation at every visit. At least one practice we spoke with had begun to place more emphasis on falls prevention by asking patients about their use of scatter rugs in the house, and a CCT provider noted that they assess safety needs, including fall risks, during home visits.

Improving quality of care and patient safety is expected to lead to better health outcomes. CCT providers work closely with the top 3% to 10% of high-risk patients to help them better manage their chronic diseases, educate them about appropriate ER use, and assess their social service needs. Interviewees in several practices shared stories about how their patients are now receiving more evidence-based care (e.g., appropriate diabetic care for patients with diabetes and more preventive care services for all patients). These providers are also able to connect patients with community resources, such as transportation to medical appointments and housing support. Practice providers also engage their patients in their own care management and work with patients on goal setting and education.

8.3.2 Impacts on Quality of Care, Patient Safety, and Health Outcomes

Quantitative data assessing the impacts of the Maine PCMH Pilot on quality of care, patient safety, or health outcomes on Medicare beneficiaries are not yet available. Future annual analyses and reports will attempt to assess the impact on these outcomes. Beginning with the second annual report, we will include descriptive and, where appropriate, multivariate analyses of process of care quality indicators, EHR Meaningful Use rates, prevention quality indicators, as well as outcomes on mortality, and incidences of serious medical events, using Medicare data. We will also provide results on self-reported health status based on the PCMH-Consumer Assessment of Healthcare Providers and Services (CAHPS) survey.

8.4 Access to Care and Coordination of Care

8.4.1 Implementation of State Initiative and Practice Features Expected to Improve Access to Care and Coordination of Care During Year 1

Each of the PCMH Pilot practices achieved NCQA PPC[®] PCMH[™] recognition as a condition of participation. This implies compliance with the NCQA “must pass” elements regarding access during and after office hours, implementing a care management program and tracking referrals and follow-up. Additionally, most of the 10 Core Expectations that practices committed to achieving during the PCMH Pilot are related to enhancing access to care and coordination of care: an expectation of enhancing access to care; integration of health IT to support improved communications; implementing a team-based approach to care; behavioral-physical health integration; and connecting patients to community resources. Prior to participating in the PCMH Pilot, practices completed a baseline self-assessment survey of their progress in meeting the Core Expectations. An annual Practice Dashboard, developed by Pilot staff from monthly practice self-reports, assesses each practice’s progress in meeting these Core Expectations (and sub-elements). Minimum requirements are set and progress is assessed as moderate or full implementation; the expectation is that 17 of 20 elements are “must pass,” including those related to access to and coordination of care. According to Pilot staff, payers will be notified at the end of the year if practices have not achieved these “must pass” elements, and it will be up to them to decide whether to pay these practices.

Components of the Core Expectation for enhanced access to care consist of systems changes, such as open scheduling, expanded hours, and new options for communication between patients and their personal physician and office staff. While some practices mentioned that they had open access scheduling and extended hours prior to participating in the PCMH Pilot, practices described additional modifications that have improved access, such as tracking to the third next available appointment; making sure that same day appointments are available; increasing the percentage of time that patients see the same provider; and ensuring that phones are answered during lunch hours. Most practices had activated an online patient portal through which patients can request an appointment or prescription renewal, see laboratory results, or ask questions. Some practices said that over 50% of their patients routinely use the portal. Even practices that may not yet have fully implemented the Access Core Expectation mentioned that they have made significant improvements within their practice. PCMH Pilot staff agreed that there have been substantial changes for the Access Core Expectation, but it was not nearly enough: “Practices would all say that they offer enhanced access and open access scheduling, but the implementation of that is variable.”

Care coordination is a significant focus of the Core Expectations. In order to fully meet the elements within these expectations, practices are expected to identify a leader within the practice, use a team-based approach that expands the roles of non-physician staff, and provide clearly identifiable roles and responsibilities for care management staff and other practice staff. Care management staff are expected to be integrated into the practice team. Practices are expected to have developed a clear process for providing care management services and identifying specific patients at high risk for experiencing adverse outcomes or developing avoidable conditions that could benefit from care management. Practices are also expected to take steps to integrate behavioral and physical health care, such as incorporating a behaviorist into the practice or co-locating behavioral health services within the practice. Pilot staff have contracted technical assistance for practices when focused assistance is needed in some of these areas, such as in behavioral health integration and connecting practices with community-based support.

Many practices during the site visit mentioned that they had examined and clarified staff roles since participating in the PCMH Pilot. Most of these practices had augmented their in-house care coordination functionality by establishing internal care teams and assigning specific staff to make sure that consultations and laboratory tests that were ordered had been done, and follow up with patients who had recently been hospitalized or seen in the ER had occurred. Some practices had integrated nurse care managers or social work case managers into their practice to identify high risk patients or patients with high utilization and coordinate efforts with CCTs. Practices talked about implementing a system to get reports from hospitals on their patients that had been to the ER, admitted, or discharged and were contacting them to coordinate follow-up care.

Practices discussed adding resources, such as an embedded psychiatric nurse practitioner, behavioral health services, podiatry, and laboratory services that had not been affordable prior to their participation in the PCMH Pilot. One site reported using a new teleconferencing service to engage patients with behavioral issues. Pilot staff said that they “think the behavioral health integration has made a huge difference in many of the participating practices, which can be seen from the co-location of these services and the sharing of charts. And, while there is a large range in practices’ progress in integrating behavioral health, the notion wasn’t in existence even three or four years ago—that practices really have to identify, screen for, and address behavioral issues. So, this is a huge shift for practices.”

CCTs were added to provide support for the most complex, high risk, high need, and high cost patients that are served by participating practices. CCTs work with their assigned practices to identify those patients that are designated as having priority status and develop appropriate care planning. In addition to receiving patient referrals from Pilot practices, CCTs are expected to have agreements with all local hospitals to obtain data on inpatient and ER admissions, preferably on a daily basis. Some CCTs embed care managers in the hospital and work directly with discharge planning staff to identify patients for follow-up care. Depending upon the size and scope of the CCT, services are either available directly or through referral and include: nurse care management; case/panel management; behavioral health and substance abuse services; psychiatric prescribing and pharmacy consultation for providers; medication review and reconciliation; oral health services; health coaching; and chronic disease self-management education and skill-building. CCTs also link patients to community organizations that offer a

large variety of support services, including transportation assistance, housing, literacy, self-management and health living, economic, and other assistance to meet basic needs.

CCTs were officially implemented in the Maine PCMH Pilot in January 2012, but implementation took several months and some groups were not up and running until March. This meant that some practices were still working through their relationship with the CCTs during our site visit. A Pilot staff member said that the CCTs were a little distracting for practices, because instead of retaining their focus on roles that were their responsibility, such as basic chronic care management, some practices were saying that this function is now done by the CCT. Some CCTs were initially waiting for referrals from the practices, rather than proactively identifying their own patients from various data sources. Initially, practices were referring patients who were described by an interviewee as “the practice train wrecks, not always patients who would benefit from CCTs.” As a result, Pilot staff developed a standardized risk stratification plan that was implemented in June 2012, which included specific utilization measures to identify patients as a priority for the CCTs. Within the risk stratification plan, PCMH practices were reminded “CCT services were designed to support the top 3 to 10% of high-needs, high utilization patients, and practices should be providing routine chronic disease care management within the practice, as these patients could quickly overwhelm the capacity of CCTs.”

Practices interviewed mentioned that they had to get used to sharing patient data with CCTs. Pilot staff said, “They really needed to be told by lots of other people that it was okay. This is the continuum of care and these are not outsiders, but extensions of your team, of your practice. Practices also had to adjust to making time to talk to and coordinate with the CCT staff and, in many cases, allocating office space for them to see practice patients.” Likewise, CCTs needed to clearly understand that they are part of the practice team and not just a referral agency.

Practices provided positive feedback about the services CCTs provide and discussed how they have enhanced the level of care their practice is providing. As described by one interviewee, “The CCT is crucial because they allow us to offer flexible care that isn’t offered through primary care or home care. Home visits are crucial. There are people who are home bound, patients that are high risk and high cost, tend to have mental health issues—bipolar and substance abuse—so they are not reliable. They don’t show up or just can’t get to appointments, so they go through the ER. Then they call emergency medical technicians to get to the ER, which is hugely expensive. There is no trust with primary care. PCMH offers us the ability to expand care in a holistic manner and build trust, by increasing communication with the patient and connecting them with resources that speak to their needs.” Another practice talked about the impact of the PCMH Pilot on expanding networking with community resources: “Having the CCT going to the patient’s home is really an eye opener. We had one patient who had been living in her car for two years—this diabetic was not buying her insulin because she had no refrigerator. Once we realized this, we were able to connect her with community resources and address issues that had resulted in multiple hospital admissions.”

8.4.2 Impacts on Access to Care and Coordination of Care

Quantitative data assessing the impacts of the Maine PCMH Pilot on access to care and coordination of care on Medicare beneficiaries are not yet available. Future annual analyses and

reports will attempt to assess the impact on these outcomes. Beginning with the second annual report, we will include descriptive and multivariate analyses of several indicators of access to care and coordination of care. Claims-based indicators will include primary care physician and specialist visit rates; ratio of primary care visits to total ambulatory care visits; percentage of discharges from the hospital for a medical admission with a follow-up visit within 14 days; rate of unplanned readmissions within 30 days after discharge; the percentage of ER visits that do not lead to a hospitalization; and a continuity of care index, which measures the concentration of visits among providers in the practice that is the beneficiary's usual source of care or to whom the beneficiary was referred by a provider in that practice. In addition, we will analyze a measure of care coordination based on responses to the PCMH-CAHPS survey.

8.5 Beneficiary Experience with Care

8.5.1 Implementation of State Initiative and Practice Features Expected to Improve Beneficiary Experience with Care During Year 1

Since its inception, the Maine PCMH Pilot has aimed to improve patient experience by building trust between health care providers and patients. Core Expectations of the state's model seek to enhance beneficiaries' experience by delivering care that is safe, timely, effective, equitable, efficient, and patient centered. Practices are expected to encourage and provide opportunities to patients and their families to take a more active role in their health. To meet these expectations, practices enhanced access and availability of specialized care resources. Behavioral and mental health professionals worked with practices to assist patients with psychological conditions that affected their ability for health self-management. Social workers were brought into the process to ensure that additional community resources such as transportation, meal subsidies, and clothing were provided for patients in need. Some practices we talked with screened patients for literacy, cognitive skills, language barriers, and other communication disadvantages to ensure pamphlets and prescriptions were understandable.

The Maine PCMH Pilot also emphasized training staff on improving patient communication and self-management. Practices and additional staff received training on motivational engagement, disease self-management, mental health screening, and chronic disease management best practices. Health care providers were encouraged to communicate with family members and other caregivers in the patient's social sphere. One practice administrator explained, "We've done a lot of communication as a group about the importance of having the family involved in decision making." A more open environment was fostered where patients and caregivers were encouraged to ask questions and more effectively engage in their health care. Many patients did not fully understand the tenets behind the PCMH model and, therefore, were not aware of heightened expectations. Practices began sending newsletters and educating patients on the new model and the expectations associated with a PCMH. On this issue one patient advocate said, "We do a lot of education with consumers about patient-centered health care. You're in charge of your own health care." To further enhance communication, patient portals within practices were also launched.

With the introduction of Medicare, practices were linked with CCTs that provided additional support and education for patients that have potentially high utilization or high risk. These additional resources worked in concert with the practice's primary care team to offer more

specialized services. Some practices we talked with understand that the beneficiary experience can be strengthened through greater patient engagement and that this is a cultural shift for both patients and providers. During the site visit, one patient advocate commented, “We need to shift people’s mindsets so that they are in charge of their own health care—they’re driving their own bus.” Patient reception to increased communication and health care provider involvement has been varied and ranges from receptive to recalcitrant. A clinical director at a CCT explained, “We’ve experienced everything across the board. Some are saying they are doing fine and others are appreciative that we called because they really do need some help. It’s the whole spectrum.”

Through the Practice Dashboard, the Maine PCMH Pilot staff provides practices with measurements on an ongoing basis about their self-reported performance in meeting Core Expectations on, among other elements, those related to patient experience. Pilot staff worked with practices to administer a Clinicians and Group (CG)-CAHPS patient experience tool and provided detailed reports that focused on opportunities for improvement. Practices utilized feedback from patient advisory councils in developing patient written materials, setting office hours, and in being more responsive to patients’ communication needs.

8.5.2 Impacts on Beneficiary Experience with Care

Quantitative data assessing the impacts of the Maine PCMH Pilot on beneficiary experience with care are not yet available. In the second annual report, we plan to report our findings from the PCMH-CAHPS survey administered to Medicare beneficiaries.

8.6 Effectiveness (Utilization & Expenditures)

8.6.1 Implementation of State Initiative and Practice Features Expected to Affect Patterns of Utilization and Expenditures During Year 1

As outlined in Maine’s MAPCP Demonstration application, Maine expects to achieve budget neutrality for the MAPCP Demonstration through a 6% and 7% reduction in hospitalization for respiratory and cardiovascular illness, respectively, and a 5% reduction in ER use, specialist visits, standard imaging, advanced imaging, and ultrasound imaging through PCMH practice transformation. With these reductions over the course of the MAPCP Demonstration, Maine projects gross savings to Medicare of an estimated \$10.13 per participating Medicare FFS beneficiary per month. Net of \$9.90 in monthly per beneficiary payments to practices and CCTs, Maine expects the demonstration to be budget neutral to Medicare.

Since the PCMH Pilot’s inception, participating practices have been responsible for implementing key practice changes outlined in the Core Expectations, several of which may directly impact utilization and expenditures, including practice integrated care management, behavioral-physical health integration, enhanced access to care, population risk stratification and management of patients at risk for adverse outcomes, and a commitment to reducing unnecessary health care spending, reducing waste, and improving cost-effective use of health services. Participating practices’ progress in meeting these expectations are regularly monitored by the state.

With Medicare’s participation, CCTs were deployed to address the health care and social service needs of patients who have high rates of ER and inpatient use or are at risk for high rates of use. In consultation with the CCTs, Maine developed a risk stratification plan, with criteria for identifying patients with high risk or high utilization. The primary criteria focus on the frequency of ER and inpatient use in the past 6 or 12 months or, for Medicare beneficiaries, a designation of “high risk” based on HCC risk category in RTI’s Medicare beneficiary utilization files. However, CCTs refine these criteria and consider other criteria as needed to adjust their panel size. Additional criteria may include presence of multiple chronic conditions (in particular 3 or more conditions), poly pharmacy (in particular 15 or more medications or use of multiple high-risk medications), and high social service needs that impact receipt of medical care. Medicare beneficiary utilization data available through the RTI web portal, as well as ER and inpatient utilization reports from local hospitals, were frequently cited by CCTs during the site visit interviews as important tools for identifying the high risk/high users. The expectation is that with the CCT’s help, patients who are high risk or high users of services will be able to reduce their use of health care services, including inpatient and ER. However, some state officials and at least one provider have expressed concern that, despite the intense efforts of CCTs, inpatient and ER services will remain stubbornly high for some of these patients.

Several concurrent initiatives may influence utilization and expenditures in PCMH Pilot practices. Several participating practices are located in the Bangor Beacon Community. One goal of the Beacon initiative is to reduce costs associated with inpatient and ER use by increasing health care quality and patient safety through HIE. One commercial payer also mentioned an initiative to divert enrollees from the ER to urgent care or walk-in clinics for non-emergency care. Finally, Maine has a growing ACO presence, with several provider groups and health systems participating in CMS-led ACO initiatives.⁴⁵

8.6.2 Year 1 Findings on Effectiveness

In this section, we present descriptive statistics and estimates of the demonstration effects from the quarterly fixed effects regression models (*Section 1.2.3, Equation 1.1*) for three Medicare expenditure outcomes (total expenditures, expenditures for short-stay, acute care hospitals, and expenditures for ER visits) and three utilization outcomes (all-cause, acute care hospitalizations, ER visits, and 30-day unplanned readmissions). The results are based on 28 quarters of data.

- Baseline period: January 2006–December 2009 (16 quarters). This is the period prior to the start of the PCMH Pilot in Maine.
- Pilot period: January 2010–December 2011 (8 quarters). This is the period after the start of the Maine PCMH Pilot but prior to Medicare joining the pilot.
- Demonstration period: January–December 2012 (4 quarters). This is the first year after Medicare joined the Maine PCMH pilot.

⁴⁵ If a PCMH Pilot practice or comparison group practice is participating in a CMS-led ACO initiative, this will be accounted for in regression models.

The descriptive statistics reported here are weighted averages of the Medicare expenditure outcomes and utilization rates from 2006 through the first year of the MAPCP Demonstration. The averages are calculated separately for (1) beneficiaries assigned to participating practices, (2) beneficiaries assigned to PCMHs in the comparison group, and (3) beneficiaries assigned to non-PCMHs in the comparison group. The weights adjust the averages for differences in demonstration eligibility and for observable differences in beneficiary-, practice-, and geographic-level characteristics.

The regression models (see *Section 1.2.3*) were estimated separately using two distinct comparison groups: (1) beneficiaries assigned to PCMHs in the comparison group, or (2) beneficiaries assigned to non-PCMHs in the comparison group. The regression results aim to answer two key evaluation questions:

1. Did the Maine PCMH pilot affect expenditures and utilization rates during the demonstration period? Specifically, was the PCMH pilot associated with slower growth in Medicare expenditures or reductions in utilization, relative to beneficiaries assigned to comparison practices?
2. Did the demonstration effect differ, depending on whether beneficiaries assigned to practices participating in the state initiative were compared to either (1) beneficiaries assigned to PCMHs in the comparison group, or (2) beneficiaries assigned to non-PCMHs in the comparison group?

The regression tables presented below will help answer these questions. They contain estimates of the demonstration effects for each quarter, and their standard errors. For expenditures, these are “difference-in-differences” effects. Negative estimates indicate that the growth in expenditures was smaller for beneficiaries assigned to participating practices than for beneficiaries assigned to practices in the comparison group. Conversely, positive expenditure estimates indicate that the growth in Medicare expenditures was larger for beneficiaries assigned to participating practices than for beneficiaries assigned to practices in the comparison group. We also report the average demonstration effect over the entire first year of the demonstration, calculated as a weighted average of the four quarterly estimates (see *Section 1.2.3*).

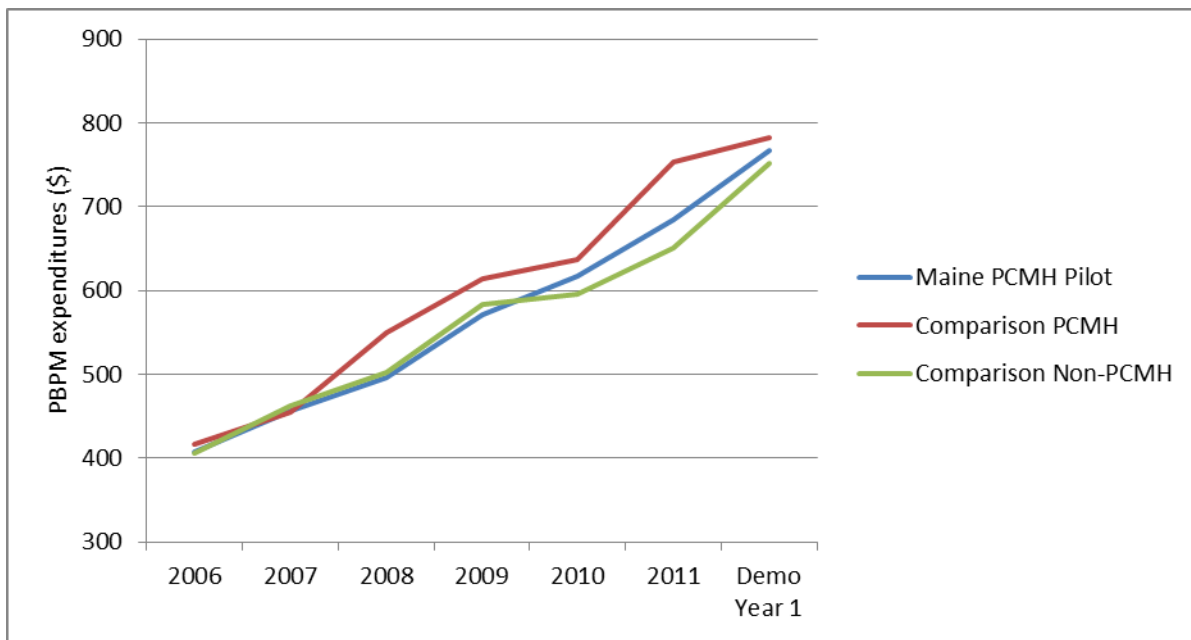
For the rates (per 1,000 beneficiaries) of all-cause, acute care hospitalizations, ER visits, and 30-day unplanned readmissions, the quarterly demonstration effects represent, for each demonstration quarter, the (regression-adjusted) change in average utilization among beneficiaries assigned to participating practices, relative to beneficiaries assigned to comparison practices. Negative estimates suggest that during particular demonstration quarters the state initiative was able to lower the utilization rate for beneficiaries assigned to participating practices, relative to beneficiaries assigned to comparison practices. Conversely, positive estimates suggest that the state initiative was associated with increased utilization rates in certain quarters during the demonstration period. As with the expenditure outcomes, we also report the average demonstration effect for utilization rates over the entire first year of the demonstration, calculated as a weighted average of the four quarterly estimates.

Descriptive statistics. Average per beneficiary per month (PBPM) Medicare expenditures and average utilization rates (per 1,000 Medicare FFS beneficiaries) from 2006 through the first year of the MAPCP Demonstration are shown in *Figures 8-2 through 8-7*.

Total Medicare expenditures (*Figure 8-2*) increased and were mostly higher for beneficiaries assigned to comparison PCMHs. The same was true for expenditures for short-stay, acute care hospitals (*Figure 8-3*). Expenditures for ER visits (*Figure 8-4*) increased but from 2009 onward, both the level and growth in expenditures was higher among beneficiaries assigned to comparison PCMHs. The rates of all-cause, acute care hospitalizations (*Figure 8-5*) increased for all three groups of beneficiaries and were fairly similar in 2011 and the first year of the MAPCP Demonstration. The rate of ER visits (*Figure 8-6*) increased steadily between 2006 and the first demonstration year. Finally, between 2011 and the first demonstration year, the rate of 30-day unplanned readmissions (*Figure 8-7*) increased among beneficiaries assigned to participating practices and comparison non-PCMHs, whereas it decreased among beneficiaries assigned to comparison PCMHs.

Figure 8-2

Maine: Trend in average total PBPM Medicare expenditures from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to Maine PCMH Pilot practices, comparison PCMHs and comparison non-PCMH practices

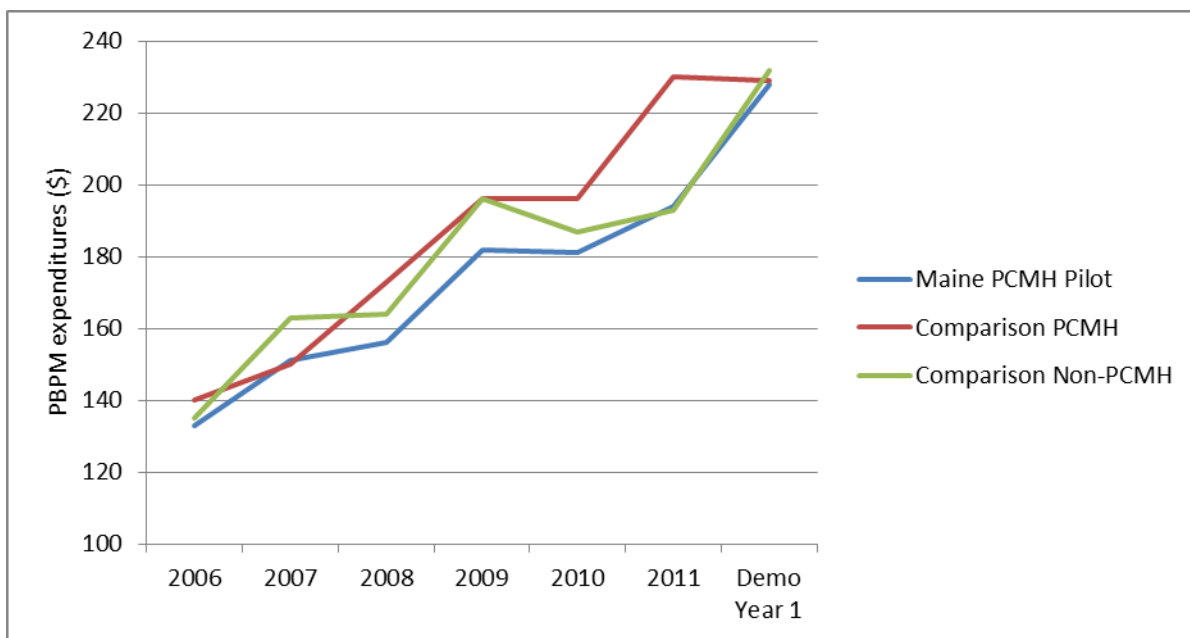


NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; PBPM = per beneficiary per month.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). These amounts do not include fees paid by Medicare as a result of participation in the Maine PCMH Pilot.

Figure 8-3

Maine: Trend in average PBPM Medicare expenditures for short-stay, acute-care hospitals from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to Maine PCMH Pilot practices, comparison PCMHs and comparison non-PCMH practices

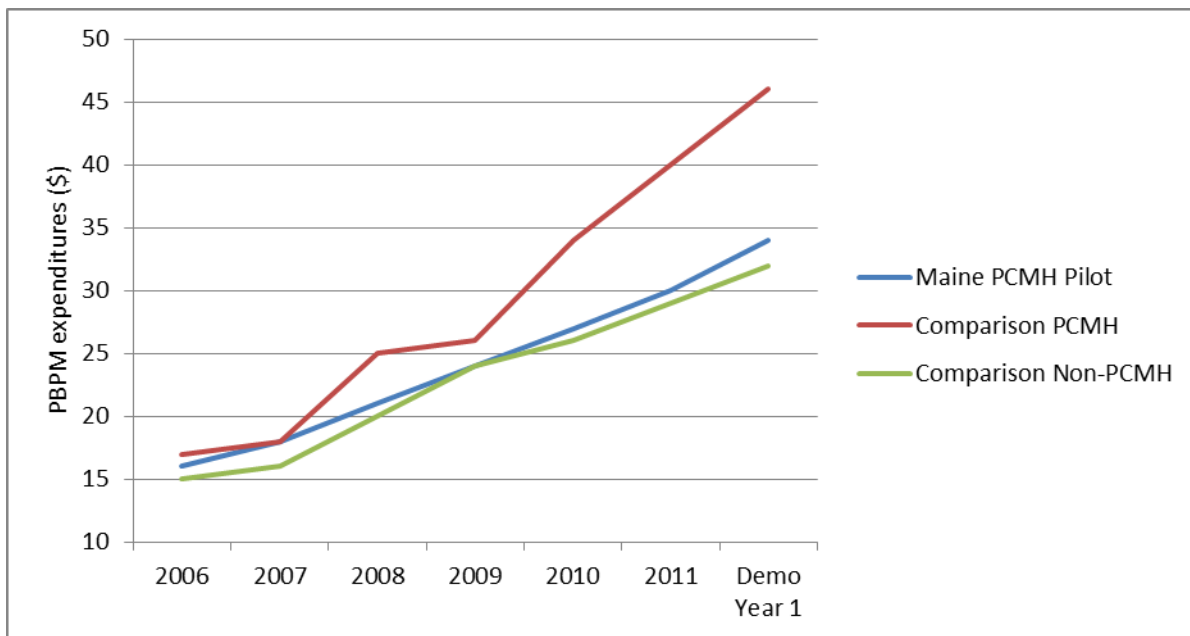


NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; PBPM = per beneficiary per month.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). These amounts do not include fees paid by Medicare as a result of participation in the Maine PCMH Pilot.

Figure 8-4

Maine: Trend in average PBPM Medicare expenditures for ER visits and observation stays from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to Maine PCMH Pilot practices, comparison PCMHs and comparison non-PCMHs¹



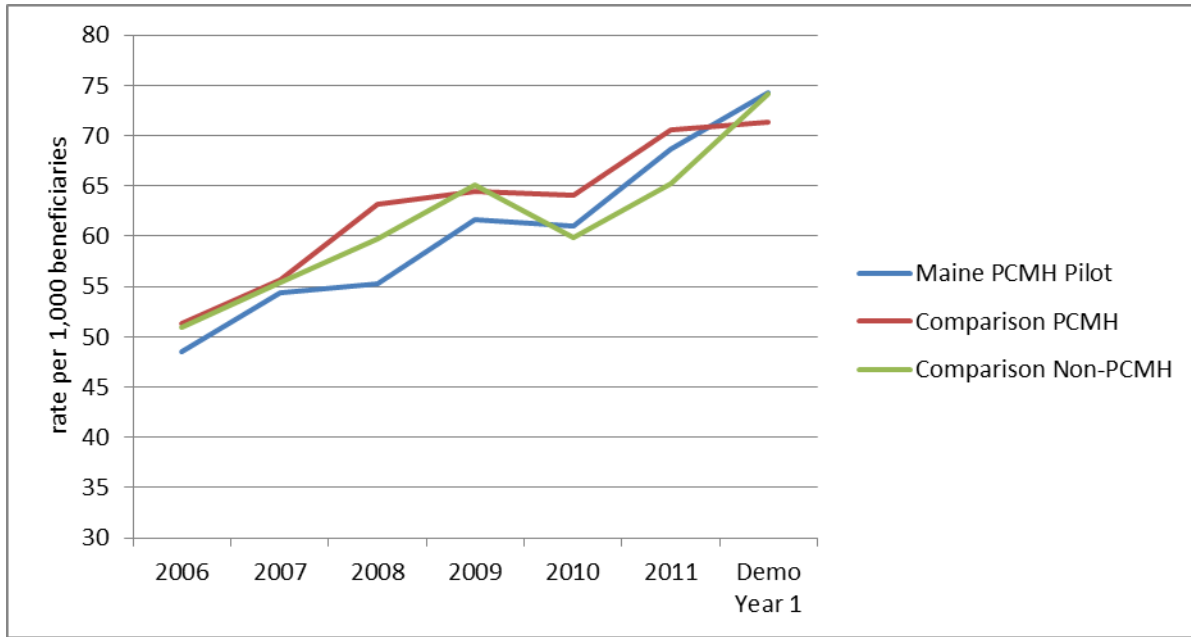
NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; PBPM = per beneficiary per month; ER = emergency room.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). These amounts do not include fees paid by Medicare as a result of participation in the Maine PCMH Pilot.

¹ This excludes Medicare expenditures for ER visits that led to a hospitalization.

Figure 8-5

Maine: Trend in average rate of all-cause, acute-care hospitalizations per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to Maine PCMH Pilot practices, comparison PCMHs and comparison non-PCMH practices

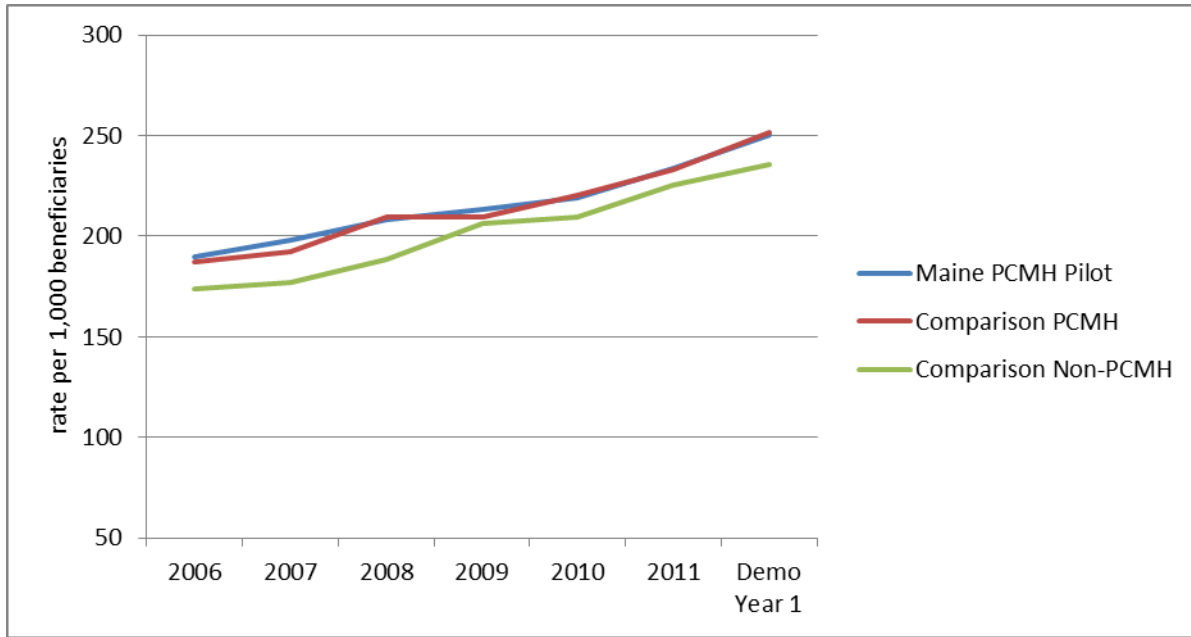


NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group).

Figure 8-6

Maine: Trend in average rate of ER visits and observation stays per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to Maine PCMH Pilot practices, comparison PCMHs and comparison non-PCMH practices¹



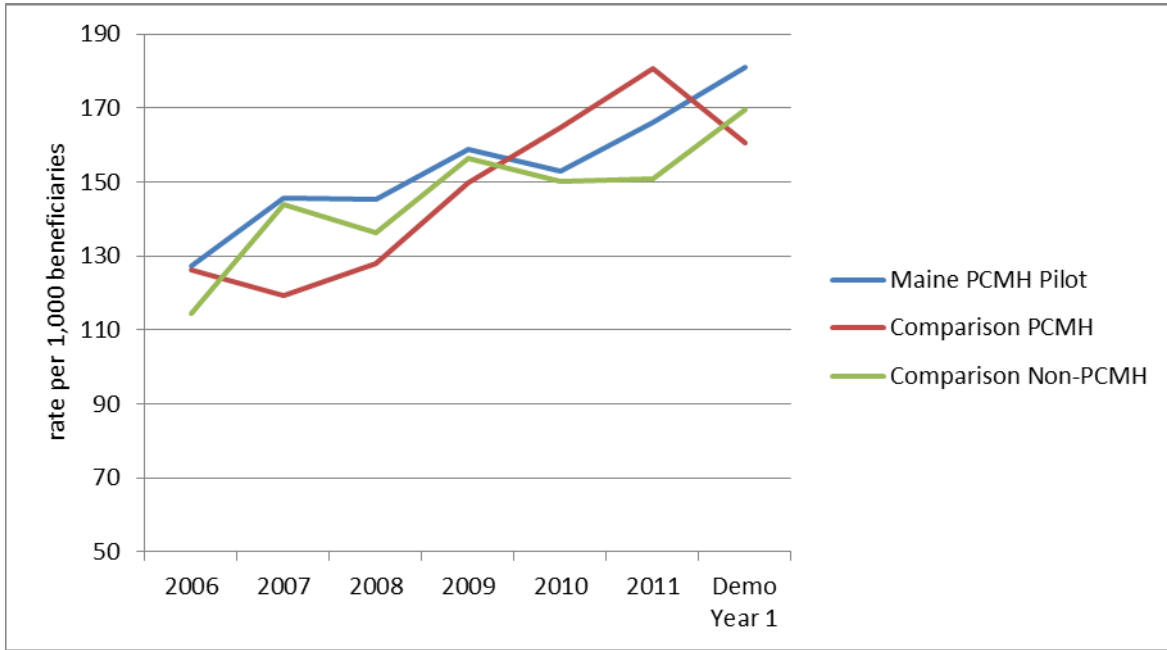
NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; ER = emergency room.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group).

¹ This includes ER visits that led to a hospitalization.

Figure 8-7

New York: Trend in average rate of unplanned hospital readmissions per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to Maine PCMH Pilot practices, comparison PCMHs and comparison non-PCMHs



NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group).

Regression estimates. Quarterly difference-in-differences effects for Medicare expenditures, and their weighted average over the first year of the MAPCP Demonstration, are given in *Table 8-4*. Quarterly demonstration effects for the utilization rates, and their weighted averages, are given in *Table 8-5*.

Table 8-4
Maine: Quarterly difference-in-differences estimates for PBPM Medicare expenditures during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to Maine PCMH Pilot practices vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Quarter	PCMH Pilot vs. CG PCMH			PCMH Pilot vs. CG Non-PCMH		
	Total (\$)	Acute Care (\$)	ER (\$)	Total (\$)	Acute Care (\$)	ER (\$)
Jan–Mar 2012	–67.06* (33.56)	–20.23 (17.24)	–4.04 (2.60)	–33.34 (35.21)	–12.31 (16.12)	–0.77 (2.11)
Apr–Jun 2012	–36.92 (45.97)	–11.11 (25.03)	–9.04* (3.45)	–63.59* (35.33)	–32.3* (19.08)	–2.77* (1.65)
Jul–Sep 2012	64.4 (50.36)	41.16* (17)	–2.91 (3.09)	21.61 (42.93)	16.85 (16.46)	2.68 (1.80)
Oct–Dec 2012	131.74* (43.55)	68.04* (15.26)	–0.66 (2.36)	49.26 (38.86)	34.63* (16.28)	1.61 (1.78)
Average ¹	22.57 (35.32)	19.25 (14.56)	–4.19* (2.41)	–6.82 (33.24)	1.53 (11.67)	0.18 (1.38)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room.

The table contains the difference-in-differences estimates for Medicare expenditures during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

¹ This is a weighted average of the four quarterly difference-in-differences estimates, where the weights are the numbers of eligible beneficiaries who were assigned to a Maine PCMH pilot practice in each quarter.

* p<0.10

Table 8-5

Maine: Quarterly demonstration effect estimates for utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to Maine PCMH Pilot practices vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Quarter	PCMH Pilot vs. CG PCMH			PCMH Pilot vs. CG Non-PCMH		
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)
Jan–Mar 2012	–2 (4.3)	–10 (12.9)	19 (19.7)	–3 (3.9)	–2 (6.9)	–3 (13.6)
Apr–Jun 2012	3 (3.5)	–13* (7.6)	6 (23.2)	–3 (3.5)	–8 (7.3)	–1 (12.7)
Jul–Sep 2012	9* (5.1)	6 (9.9)	43* (22.9)	3 (4.4)	11 (9.4)	4 (13.6)
Oct–Dec 2012	10* (4.7)	8 (7.5)	–6 (15.8)	4 (4.6)	–1 (10.9)	14 (19.0)
Average ¹	5 (3.2)	–2 (7.6)	16 (12.4)	0 (3.0)	0 (6.1)	4 (7.3)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room.

The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries or discharges) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

Due to the non-linearity of the regression models for utilization, the demonstration effect estimates do not have a difference-in-differences interpretation.

¹ This is a weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who were assigned to a Maine PCMH pilot practice in each quarter.

* p<0.10

From **Tables 8-4 and 8-5**, we reach the following conclusions about the impact of the Maine PCMH pilot on Medicare FFS beneficiaries during the first year of the MAPCP Demonstration.

- Between the baseline period and the first demonstration year, the growth in **total Medicare expenditures** (Part A and B) and **expenditures for short-stay, acute-care hospitals** was similar for beneficiaries assigned to participating practices and beneficiaries assigned to comparison practices (PCMH and non-PCMH).

- The growth in **expenditures for ER visits** was less for beneficiaries assigned to participating practices than for beneficiaries assigned to comparison PCMHs.
- The rates of **all-cause, acute-care hospitalizations, ER visits and unplanned readmissions** during the first year of the MAPCP Demonstration did not change significantly for beneficiaries assigned to participating PCMH Pilot practices, relative to the comparison group (PCMH and non-PCMH). However, in the third and fourth quarters of 2012, higher rates of all-cause, acute care hospitalizations were observed among beneficiaries assigned to Maine PCMH Pilot practices relative to beneficiaries assigned to comparison PCMHs.

Cohort 1 analysis. The quarterly fixed effects model was also estimated using only data from the beneficiaries in “cohort 1.” In Maine, these are beneficiaries who were first assigned to a participating practice or comparison practice during the first quarter of the MAPCP Demonstration (January–March 2012); it does not include those beneficiaries who were newly assigned during later quarters. As discussed in more detail in *Section 1.2.3*, the purpose of a cohort 1 analysis was to estimate the demonstration effects using stable intervention and comparison groups. In the data used for this report, cohort 1 beneficiaries comprised 86% of the Maine PCMH pilot group, 90% of the PCMH comparison group and 93% of the non-PCMH comparison group.

The full set of cohort 1 estimates for Medicare expenditures and utilization rates are given in *Tables 8A-1 and 8A-2* in *Appendix 8A*, respectively. For convenience we repeat here the average estimates for the first MAPCP Demonstration year in *Table 8-6*. On comparing these with the ones for the full sample in *Tables 8-4 and 8-5*, we note the following differences and similarities.

- Similar to the estimate based on the full sample of beneficiaries, for the growth in **total Medicare expenditures and expenditures for short-stay, acute-care hospitals** was similar for cohort 1 beneficiaries assigned to participating practices and practices in the comparison group.
- Unlike the estimate based on the full sample of beneficiaries, the rate of growth in **expenditures for ER visits** showed no difference between cohort 1 beneficiaries assigned to participating practices and cohort 1 beneficiaries assigned to comparison PCMHs.
- Unlike the corresponding full-sample result, the rate of **all-cause, acute-care hospitalizations** increased among cohort 1 beneficiaries assigned to participating practices, relative to cohort 1 beneficiaries assigned to comparison PCMHs. This was driven by increases in hospitalizations rates in the third and fourth quarters of the demonstration.

In sum, the growth in expenditures for ER visits was similar for cohort 1 beneficiaries assigned to participating practices and cohort 1 beneficiaries assigned to comparison PCMHs, whereas the rate of all-cause, acute care hospitalizations increased. In contrast, the full-sample results showed slower growth in expenditures for ER visits and similar rates of all-cause, acute

care hospitalizations. This suggests that in terms of these two outcomes, the Maine PCMH Pilot was more successful for beneficiaries assigned to participating practices in later quarters, relative to beneficiaries who entered the Maine PCMH Pilot during the first quarter of the MAPCP Demonstration.

Table 8-6
Maine: Average demonstration effect estimates during the first demonstration year for Medicare expenditures and utilization rates, comparing performance for Medicare beneficiaries first assigned in January-March 2012 to Maine PCMH Pilot practices vs. comparison PCMHs and non-PCMHs

Outcome	PCMH Pilot vs. CG PCMH		PCMH Pilot vs. CG Non-PCMH	
	Average effect	Standard error	Average effect	Standard error
Total expenditures (\$)	27.19	(39.28)	-4.06	(34.14)
Acute care expenditures (\$)	24.98	(17.41)	3.78	(13.77)
ER expenditures (\$)	-4.89	(3.09)	0.82	(1.61)
All-cause hospitalizations (per 1,000 beneficiaries)	7*	(3.5)	0	(3.1)
ER visits (per 1,000 beneficiaries)	0	(9.5)	3	(6.2)
Unplanned readmissions (per 1,000 beneficiaries)	14	(14.4)	-3	(8.1)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room.

The table contains the average demonstration effect estimates and standard errors for the first year of the MAPCP Demonstration, for Medicare expenditures and utilization rates. The average estimate is a weighted average of the four quarterly effects, where the weights are the numbers of demonstration-eligible beneficiaries in each quarter.

For Medicare expenditures, the demonstration effects can be interpreted as differences-in-differences.

* p<0.10

Summary of evaluation findings. Our analyses of Medicare expenditures and utilization rates during the first year of the MAPCP Demonstration provide some preliminary evidence about the effectiveness of the demonstration for Medicare FFS beneficiaries. The evidence can be summarized as follows.

- There is no evidence that the Maine PCMH Pilot reduced the growth in total Medicare expenditures during the first year of the MAPCP Demonstration year. In fact, between the baseline and fourth demonstration quarter, total expenditures increased more for beneficiaries assigned to participating practices than for beneficiaries assigned to comparison PCMHs.

- Relative to comparison PCMHs, the growth in expenditures for short-stay, acute-care hospitals accelerated in the third and fourth demonstration quarters for beneficiaries assigned to PCMH Pilot practices. Relative to comparison non-PCMHs, this growth accelerated in the fourth quarter of the demonstration.
- Relative to comparison PCMHs, the average growth in expenditures to emergency rooms was slower among beneficiaries assigned to participating practices. The estimated effect, however, was small (−\$4 PBPM) and was not present relative to comparison non-PCMHs.
- There is no evidence that the Maine PCMH Pilot reduced the rates of all-cause, acute-care hospitalizations and ER visits during the first year of the MAPCP Demonstration. In fact, relative to comparison PCMHs, the rate of all-cause, acute care hospitalizations increased in the second half of the first demonstration year among beneficiaries assigned to participating practices.
- There is some limited evidence of a differential impact on outcomes for beneficiaries who entered the Maine PCMH Pilot in the first quarter of MAPCP Demonstration versus those that entered later, relative to beneficiaries assigned to comparison PCMHs. The cohort 1 beneficiaries assigned to participating practices experienced, on average, an increase in all-cause, acute-care hospitalizations, which were not observed when evaluating the full sample of beneficiaries. Also, no reduction in the growth in expenditures for ER visits was observed among cohort 1 beneficiaries assigned to participating practices, but a reduction was observed among the full sample of beneficiaries.

8.6.3 Medicare Budget Neutrality in Year 1 of the Maine PCMH Pilot

In this section, we present estimates of budget neutrality in the first year of the MAPCP Demonstration using the methodology described in *Section 1.2.3*. *Table 8-7* reports the estimated gross and net savings for Maine during that year, relative to the PCMH comparison group. Results are presented separately by the four quarters and then summed to produce annual estimates of savings and fees as a whole.

Total gross savings to Medicare were −\$5,032,379. The quarterly estimates indicate that positive savings during the first two quarters of the MAPCP Demonstration were offset by increased expenditures during quarters three and four. First year savings were estimated imprecisely as reflected by the 90% confidence interval that ranged from −\$8.1 million to +\$18.1 million.

Total fees paid out based on eligible quarters were \$2,182,490. Medicare’s net savings for Maine during the first year were estimated to be −\$7,214,869, or −\$388.28 per full-year eligible beneficiary. Given the transition from positive to negative savings during the first year of the MAPCP Demonstration, cost performance during the second and third years of the MAPCP Demonstration will be crucial in determining whether the Maine PCMH Pilot can yield net savings in the longer term.

Table 8-7
Estimates of gross savings, fees paid, & net savings, Year 1 of the MAPCP Demonstration, Maine PCMH Pilot

Budget Neutrality Parameter	MAPCP Demonstration Quarter (Year 1)				Year 1 Total	90% Confidence Interval	
	Jan–Mar 2012	Apr–Jun 2012	Jul–Sep 2012	Oct–Dec 2012		Lower	Upper
Difference in quarterly expenditures per beneficiary	–\$201.19**	–\$110.75	\$193.21	\$395.21***	\$276.48	—	—
Eligible beneficiary quarters	18534	18775	18759	18259	74327	—	—
Total gross savings	\$3,728,855	\$2,079,331	–\$3,624,426	–\$7,216,139	–\$5,032,379	–\$8,081,217	\$18,145,989
Total MAPCP Demonstration fees	\$541,870	\$547,688	\$553,837	\$539,095	\$2,182,490	—	—
Net savings	\$3,186,985	\$1,531,643	–\$4,178,263	–\$7,755,234	–\$7,214,869	—	—
Average expenditures (comparison group)	\$2,419	\$2,508	\$2,291	\$2,105	\$9,323	—	—
Total expenditures (comparison group)	\$44,833,746	\$47,087,700	\$42,976,869	\$38,435,195	\$173,333,510	—	—

NOTES:

*p<.10; **p<.05; ***p<.01; PCMH = patient-centered, medical home

Difference in quarterly expenditures per beneficiary: Estimated difference in average Medicare Part A and B expenditures between beneficiaries assigned to Maine PCMH pilot practices and those assigned to PCMHs in the comparison group, excluding beneficiaries with less than 3 months of demonstration eligibility.

Eligible beneficiary quarters: Sum of participating beneficiaries' fractions of quarters eligible to participate in the MAPCP Demonstration, excluding beneficiaries with less than 3 months of eligibility.

Total gross savings: Combined savings effect per beneficiary times the number of eligible beneficiary quarters. Savings are the negative of the expenditure difference. Positive savings indicates that the intervention group's expenditures increased less than the comparison group's expenditures. Negative savings indicate that the intervention group's expenditures increased more than the PCMH comparison group's expenditures.

Total MAPCP Demonstration fees: Sum of MAPCP Demonstration fees, excluding fees paid on behalf of beneficiaries with less than 3 months of eligibility.

Net savings: Gross savings minus total MAPCP Demonstration fees.

Average expenditures (PCMH comparison group): Medicare expenditures per beneficiary in the comparison group.

Total expenditures (PCMH comparison group): Average expenditures per beneficiary times the number of Maine PCMH pilot beneficiaries' eligible quarters.

SOURCE: Medicare Part A and B claims January 1, 2006–December 31, 2012.

8.7 Special Populations

8.7.1 Targeting of Special Populations and Tailored Interventions During Year 1

Although Maine’s grant application did not specify special populations that they planned to target, practices were clearly focused on patients who were high ER users, had frequent hospitalizations, or were considered high risk. Practices did not specifically mention dual eligible beneficiaries as a focus of their attention and generally thought that this group represented only a small proportion of their entire patient panel. Practice interviewees stressed that all patients in their practices had access to the same services and interventions, regardless of their insurance payer.

CCTs and practices coordinated their efforts and, within the flexibility provided by the plan, tailored how they applied the standard criteria to identify the patients targeted for CCT services, depending on characteristics such as panel size, utilization patterns, and communication with practice providers. For example, some practices referred patients who do not fall into the ‘super-utilizer’ category, but who the practices had identified as needing extra support, such as help with medication reconciliation. In the smaller and more rural practices, ER use may be negligible so these practices may focus more on readmissions or on patients with particular chronic conditions.

CCT providers offered anecdotal evidence about the positive effects of targeting high risk patients. Referring to care received prior to the Maine PCMH Pilot, one CCT provider noted, “I believe many high-risk patients had not been served well by our system. We are now reversing the experience they have by doing some really minor things that have some major impacts moving forward.” Another CCT provider illustrated the importance of visiting patients in their home to observe barriers that may hinder a patient from getting needed services: “Home visits are crucial. There was one patient who kept missing her appointment and we didn’t know why. It turned out she didn’t own a pair of shoes.”

8.7.2 Impacts on Special Populations

Quantitative data assessing the impacts of the Maine PCMH Pilot on special populations are not yet available. In future reports, we plan to report our findings on the impacts of the demonstration on special populations as defined by each state initiative or special populations of policy interest.

8.8 Discussion

As a result of Maine’s success in achieving strong buy-in from stakeholders, including commercial payers and employer groups, the general consensus from the site visit is that multi-stakeholder collaboration to support the PCMH Pilot is working very well in Maine. Practices, payers, and state officials uniformly lauded the efforts of Maine Quality Counts to administer the Pilot and provide technical assistance support to the participating practices. Practice staff viewed the learning collaborative sessions and webinars as extremely valuable. However, securing adequate financing for the administration of the PCMH Pilot remains an ongoing challenge.

The PCMH Pilot had been operating for two years when Medicare joined and minimal changes were required to accommodate Medicare's participation. Medicare's entry was well-received, not only because Medicare's participation validates the PCMH Pilot, but also because Medicare's participation provided additional funding to practices and supported the introduction of the CCTs. The State was able to leverage Medicare's entrance to secure commitments from participating commercial payers and Medicaid to expand to the 50 additional practices and increase commitment of the current 22 practices from three to five years, extending the life and scope of the PCMH Pilot.

Since joining the PCMH Pilot in 2010, practices have made many changes to transform the care they provide. It was evident in visiting practice sites that the Core Expectations provided a framework to guide practice transformation; almost every practice was able to describe improvements in each of the 10 Core Expectations. However, PCMH Pilot expectations to recertify with NCQA were a point of concern, and some practices expressed frustration with the recertification process.

A major organizational change to the PCMH Pilot that coincided with Medicare's participation was the introduction of CCTs. CCTs are viewed as a key lever for addressing the needs of patients with particularly high health care utilization and costs. The launch of the CCTs created additional administrative and organizational complexity for the PCMH Pilot and implementing the CCTs has proven to be more challenging than anticipated. The definition of roles and responsibilities between CCTs and their assigned practices was still being negotiated for some CCTs at the time of the site visit.

Data silos and lack of practice-level and beneficiary-level data have been a barrier to managing patient care and care coordination. Although Maine has an APCD, problems with the Medicaid claims data prohibited the conveners from producing meaningful practice feedback reports. Practices have relied on EHR data, utilization reports from local hospitals if they can get them, and RTI's Medicare beneficiary utilization report to meet their data needs, but Pilot staff and practices expressed frustration at the lack of timely utilization and quality data, and the functionality and ease-of-use of the EHR and practices' satisfaction with the EHR varied considerably. Practice staff conveyed that there is little interoperability with other practices or with the practice's local hospital.

Despite the structural changes that have been made within the participating practices and the health system that surrounds the PCMH Pilot practices, these efforts have not translated into lower rates of growth in Medicare expenditures or acute care utilization to date. In fact, between the baseline and fourth demonstration quarter, total payments increased more for beneficiaries assigned to PCMH Pilot practices than for beneficiaries assigned to comparison PCMHs and we observe an acceleration in growth in the third and fourth quarters in payments to short-stay, acute-care hospitals. These findings will put substantial increased pressure on the PCMH Pilot to generate savings in future years.

CHAPTER 9 MICHIGAN

In this chapter, we present qualitative and quantitative findings related to the implementation of the Michigan Primary Care Transformation (MiPCT) Project, which Medicare joined at the program launch. We report qualitative findings from our first of three annual site visits to Michigan, as well as quantitative findings using Medicare fee-for-service (FFS) claims data to report characteristics of beneficiaries and participating practices in the state initiative, descriptive statistics and estimates of the demonstration effects for Medicare payment and utilization outcomes, and estimates of budget neutrality.

For the first round of site visit interviews, which occurred from October 8 through October 10, 2012 and from November 7 through November 9, 2012, three teams traveled across the state, covering mostly Southeast Michigan and the Lansing area. We also conducted phone interviews with stakeholders from Western and Northern Michigan. The focus of the site visits was on early implementation experiences and practice transformation activities that were necessary to join the MAPCP Demonstration. During the site visit, we met with key state officials involved with the implementation of the MiPCT to learn how the program was implemented and how program goals were established. We also met with payers to hear their experiences with implementation and whether the payments to practices and physician organizations were effective in terms of producing desired outcomes or whether modifications are warranted. We interviewed providers and nurse care managers from participating patient-centered medical home (PCMH) practices and administrative and clinical staff from physician organizations to learn about the effects of the state policies on their practice transformation activities and the quality and effectiveness of the health care they delivered before and after Medicare's entrance. Finally, we met with patient advocates and provider associations to learn if they had observed an improved beneficiary experience with care and any changes to the way care is delivered.

This chapter is organized by major evaluation domains. *Section 9.1* reports state implementation activities, as well as baseline demographic and health status characteristics of Medicare beneficiaries and characteristics of practices participating in the MiPCT. *Section 9.2* reports practice transformation activities. The subsequent sections of this chapter report our findings for the five evaluation domains related to outcomes: quality of care, patient safety, and health outcomes (*Section 9.3*); access to care and coordination of care (*Section 9.4*); beneficiary experience with care (*Section 9.5*); effectiveness as measured through health care utilization, Medicare expenditures, and budget neutrality (*Section 9.6*); and special populations (*Section 9.7*). We conclude this chapter with a discussion of early findings (*Section 9.8*).

9.1 State Implementation

In this section, we present findings related to the implementation of MiPCT Project and changes made by the state, practices, and payers when MiPCT was formed and Medicare and Medicaid joined the initiative. We focus on providing information related to a subset of the state implementation evaluation questions that lend themselves to being answered in the early part of the MAPCP Demonstration. Specifically, we address the following:

- What are the features of the state initiative?

- What changes did practices and payers make in order to take part in MiPCT and meet the participation requirements? What was involved in making these changes? What challenges did they face?
- What kinds of structural and organizational changes did the state, practices, and payers make to accommodate Medicare's participation in MiPCT and to better serve the needs of Medicare beneficiaries? How did administrative burdens and resource allocations change as a result of Medicare's participation?
- Does Medicare's participation in MiPCT have any spillover effects on the state's Medicaid program or private payers?
- What early lessons were learned?

The state profile in *Section 9.1.1* of this report draws on quarterly reports submitted to CMS by MiPCT project staff, monthly state/CMS calls, the site visit that was conducted in October and November 2012, and other sources including news items and state and federal websites. *Section 9.1.2* presents a logic model that reflects our understanding of the link between specific elements of MiPCT and expected changes in outcomes. *Section 9.1.3* presents key findings gathered from the site visit and describes the implementation experience of state officials, payers, and providers. We conclude the State Implementation section with lessons learned in *Section 9.1.4*.

9.1.1 Michigan State Profile as of October and November 2012 Evaluation Site Visit

MiPCT was launched on January 1, 2012. Unlike other states where Medicare joined a program that was already in operation, Medicare joined MiPCT at program launch, although some elements of MiPCT were already in place. MiPCT is a collaboration between two private insurers (Blue Cross Blue Shield of Michigan and Blue Care Network); the Michigan Medicaid agency in the Department of Community Health; and Medicare. The Primary Care Consortium is a non-profit organization created by the Michigan Department of Community Health in 2007 to convene payers, providers, and advocates to address the state's primary care problems.

Key features of MiPCT are based on Blue Cross Blue Shield of Michigan's (BCBSM) Physician Group Incentive Program (PGIP), which started in 2005. PGIP is a set of initiatives, including payment incentives, for both primary care and specialty physicians designed to transform the delivery of care and improve health care quality and health outcomes. In 2008, BCBSM began a PCMH initiative within PGIP. All 389 of the practices participating in MiPCT are designated as PCMHs by PGIP.

State environment. Michigan experienced major political changes between the time it submitted its application for the MAPCP Demonstration and the time it began implementation of the demonstration. Michigan's governorship transitioned from a Democrat to a Republican and a new Director of the Michigan Department of Community Health was appointed in September 2012. However, neither these changes, nor FY 2011 and FY 2012 budget deficits, delayed implementation of MiPCT and support for the project remains strong.

The Michigan Department of Community Health provides executive leadership and management for the project. A 16-member multi-stakeholder Steering Committee provides strategic direction and oversight, and a six-member core leadership team directs the project. The MiPCT Steering Committee includes state government, physician organizations (described below in *Section 9.1.1.4*), payers and subject matter experts.

There are a number of programs operating in Michigan that may influence outcomes for participants in the demonstration and the comparison group population, including these:

- The Southeast Michigan Beacon Community, an initiative that seeks to improve the health care system through the use of health information technology (health IT) and health information exchange (HIE), serves MiPCT practices; however, there is no formal linkage with MiPCT.
- Michigan received a State Demonstration to Integrate Care for Dual Eligible Individuals award. The project is scheduled for launch in 2014 and is intended to integrate all Medicaid and Medicare services delivered to dual eligible beneficiaries. It proposes to make capitated payments to integrated care organizations, which will be expected to provide PCMHs for all participants, among other responsibilities.
- Michigan has three Charter Value Exchanges and two Aligning Forces for Quality communities, initiatives that are providing local communities with resources to improve quality of care and data reporting capabilities.
- Three Michigan physician hospital organizations were chosen as Pioneer Accountable Care Organizations (ACOs), which test alternative payment arrangements to integrate care delivery systems to achieve better outcomes and lower costs.
- BCBSM has started an ACO program called Organized Systems of Care (OSC). As part of the OSC program, some specialists are now eligible to receive PCMH-neighbor designation. This designation indicates that the specialist has a partnership with primary care physicians that ensure the medical home level of care is maintained across providers.
- A variety of state- and community-based programs support the health of Michigan residents. The Michigan Department of Community Health works with local health departments and community agencies to assist physician organizations and practice staff in accessing public health and community services.

Demonstration scope. MiPCT is a statewide project. *Table 9-1* shows participation in Michigan's MiPCT by practices, providers, and individuals. At the end of the first year of the MAPCP Demonstration (December 31, 2012), there were 331 participating primary care practices with attributed Medicare FFS beneficiaries, accounting for 1,404 providers, and the cumulative number of Medicare FFS beneficiaries that had ever participated in the demonstration for at least three months was 226,369. The state had originally estimated over 1.7 million participants, including 358,402 Medicare beneficiaries, would participate in the project. Actual enrollment is less for several reasons, largely due to the participation by fewer insurers than were

anticipated. In addition, the number of Medicare beneficiaries was overestimated. The number of FFS beneficiaries actually attributed to participating practices was less than expected after the implementation of the claims-based assignment algorithm. The state reported the number of all-payer participants enrolled was 1,035,476 as of the end of year 1 (December 31, 2012).

Table 9-1
Number of practices, providers, and Medicare fee-for-service beneficiaries in the Michigan Primary Care Transformation (MiPCT) project

Participating Entities	Number as of December 31, 2012
MiPCT project practices ¹	331
Participating providers ¹	1,404
Medicare fee-for-service (FFS) beneficiaries ²	226,369

NOTE: MiPCT project practices include only those practices with attributed Medicare FFS beneficiaries, and participating providers are the providers that are associated with those practices. The numbers of Medicare FFS beneficiaries are cumulative, representing the number of Medicare FFS beneficiaries that had ever been assigned to participating MiPCT practices and participated in the demonstration for at least three months. MiPCT = Michigan Primary Care Transformation.

SOURCES: ¹ARC MAPCP Demonstration Provider File; ²ARC Beneficiary Assignment File (SAS Output tab52c.xls 07/30/2014). (See chapter 1 for more detail about these files).

Four payers are participating in MiPCT: Medicare, Medicaid, BCBSM, and Blue Care Network (which is a managed care affiliate of BCBSM). The state did not have a signed contract with either of the commercial plans when the project launched in January 2012, but these payers made good faith payments for their members until contracts were signed in March 2012.

Table 9-2 displays the characteristics of the practices with attributed Medicare FFS beneficiaries participating in MiPCT as of December 31, 2012. There were 331 participating practices with an average of 4.5 providers per practice. These practices were nearly all office-based (94%), with small numbers of federally qualified health centers and rural health centers (3% each). Most of these practices were located in metropolitan areas (92%), with the remainder from micropolitan (6%) or rural (2%) counties.

Table 9-2
Characteristics of practices participating in the Michigan Primary Care Transformation (MiPCT) Project as of December 31, 2012

Characteristic	Statistic
Number of practices	331
Number of providers	1404
Average number of providers per practice	4
Practice type (%)	
Office based	94
Federally qualified health center	3
Critical access hospital	0
Rural health clinic	3
Practice location type (%)	
Metropolitan	92
Micropolitan	6
Rural	2

SOURCES: ARC Q6 MAPCP Demonstration Provider File and SK&A office-based physician data file. (See chapter 1 for more detail about these files).

In *Table 9-3*, we report demographic and health status characteristics of Medicare FFS beneficiaries who were assigned to participating MiPCT practices during the first twelve months of the MAPCP Demonstration. Beneficiaries with less than three months of eligibility for the demonstration are not included in our evaluation or this analysis. Of the beneficiaries who were assigned to MiPCT practices during the first year of the demonstration, 44% were between the ages of 65 and 75, 18% were under the age of 65, and 27% were between the ages of 76 and 85, with a mean beneficiary age of 71 years. Fifty-eight percent of beneficiaries were female, 81% of participants were urban-dwelling, 15% were dually eligible for Medicare and Medicaid, and one-quarter were originally eligible for Medicare due to disability. One percent of beneficiaries had end-stage renal disease and less than 1% resided in a nursing home in the year prior to their assignment to a participating MiPCT practice.

Table 9-3
Demographic and health status characteristics of Medicare fee-for-service beneficiaries
participating in the Michigan Primary Care Transformation (MiPCT) Project from
January 1, 2012, through December 31, 2012

Demographic and health status characteristics	Percentage or mean
Total beneficiaries	226,369
Demographic characteristics	
Age < 65 (%)	18
Ages 65–75 (%)	44
Ages 76–85 (%)	27
Age > 85 (%)	11
Mean age	71
White (%)	87
Urban place of residence (%)	81
Female (%)	58
Medicaid (%)	15
Disabled (%)	25
End-stage renal disease (%)	1
Institutionalized (%)	.7
Health status	
<i>Mean Hierarchical Condition Category (HCC) score groups</i>	1.06
Low risk (< 0.48) (%)	26
Medium risk (0.48–1.25) (%)	49
High risk (> 1.25) (%)	25
<i>Mean Charlson Index score</i>	0.83
Low Charlson Index score (= 0) (%)	62
Medium Charlson Index score (≤ 1) (%)	18
High Charlson Index score (> 1) (%)	19

(continued)

Table 9-3 (continued)
Demographic and health status characteristics of Medicare fee-for-service beneficiaries participating in the Michigan Primary Care Transformation (MiPCT) Project from January 1, 2012, through December 31, 2012

Demographic and health status characteristics	Percentage or mean
Chronic conditions (%)	
Heart failure	5
Coronary artery disease	12
Other respiratory disease	10
Diabetes without complications	18
Diabetes with complications	4
Essential hypertension	35
Valve disorders	2
Cardiomyopathy	1
Acute and chronic renal disease	7
Renal failure	3
Peripheral vascular disease	2
Lipid metabolism disorders	19
Cardiac dysrhythmias and conduction disorders	10
Dementias	1
Strokes	1
Chest pain	5
Urinary tract infection	5
Anemia	7
Malaise and fatigue (including chronic fatigue syndrome)	2
Dizziness, syncope, and convulsions	6
Disorders of joint	7
Hypothyroidism	6

NOTE: Percentages and means are weighted by the fraction of the year that a beneficiary met MAPCP Demonstration eligibility criteria. Demographic and health status characteristics are calculated using the Medicare Enrollment Data Base (EDB) and claims data for the one-year period prior to a Medicare beneficiary first being attributed to a PCMH after the start of the MAPCP Demonstration. Urban place of residence is defined as those beneficiaries living in Metropolitan or Micropolitan Statistical Areas defined by the Office of Management and Budget (OMB). MAPCP=Multi=payer Advanced Primary Care Practice

SOURCE: SAS Output tab52c.xls 07/30/2014.

We use three measures to assess beneficiaries' health status during the year prior to their assignment to MiPCT practices—Hierarchical Condition Category (HCC) score, Charlson Comorbidity Index, and diagnosis of 22 chronic conditions. Beneficiaries assigned to a MiPCT practice had a mean HCC score of 1.06, meaning that these beneficiaries were predicted to be

6% more costly in the subsequent year than an average Medicare FFS beneficiary. Sixty-two percent of the population had a low (zero) score on the Charlson Comorbidity Index, indicating that these beneficiaries did not receive medical care for any of the 18 clinical conditions contained within the index in the year prior to their assignment to a participating MiPCT practice.

The most common chronic conditions diagnosed among the Medicare FFS beneficiaries were hypertension (35%), lipid metabolism disorders (19%), (uncomplicated) diabetes (18%), and coronary artery disease (12%).

Practice expectations. Participating practices are expected to meet four core requirements. First, they must have attained PCMH status by July 2010 and continue to maintain that status. Practices can secure PCMH status either through PGIP PCMH designation or National Committee for Quality Assurance Physician Practice Connection Patient-Centered Medical Home (NCQA PPC[®] PCMH[™]) Level 2 or Level 3 recognition. All of the participating practices are PGIP-designated; a small minority of the practices also has NCQA PPC[®] PCMH[™] recognition.

A practice's PGIP PCMH score is calculated using both process and outcomes measures. A practice's PCMH capacity is measured across twelve "domains of function" developed by BCBSM and physician organizations. Examples of the domains include individual care management, self-management support, preventive services, and coordination of care. Each domain includes a number of specific PCMH capabilities. The other part of a practice's score is performance in certain areas that demonstrate successful implementation of the PCMH model, such as increased preventive service utilization, increased generic drug utilization, and decreased diagnostic imaging utilization. Project staff believe that the PGIP PCMH standards are more rigorous than those of the NCQA PPC[®] PCMH[™] recognition program.

Certain domains (registry functionality, expanded access, performance reporting, and care management staffing requirements) are "must-pass" standards for MiPCT participation. BCBSM still recognizes and pays practices that do not pass these elements as part of the larger PGIP, but other MiPCT-participating payers, including Medicare and Medicaid, will not pay practices that do not pass these elements. In the 2012–2013 guidelines, BCBSM introduced new standards that strengthen the referral and tracking capacity between specialists and primary care providers.

Second, practices must be affiliated with a participating physician organization. Physician organizations have a long history in Michigan, and have evolved from organizations that handled primarily managed care contracting to organizations that provide substantial administrative support to practices participating in BCBSM's PGIP. The physician organizations support practices, simplify administration and play a critical role in the project. Their role is detailed in later sections of this chapter.

Third, MiPCT requires that either the practice or the relevant physician organization hire care managers to provide care coordination and case management to patients. The care managers are the heart of the project and the primary mechanism for cost savings. Since care managers can be hired by the practice or physician organization, mandatory staffing ratios were

established at the physician organization level. Originally, the project expected to have one moderate and one complex care manager (two total) for every 5,000 patients served by a physician organization. They further anticipated that moderate care managers would work primarily with moderate risk patients, while complex care managers would work only with those at highest risk. However, practices and physician organizations raised concerns that the staffing model did not adequately meet the needs of small practices with fewer complex patients or pediatric practices. This led to the development of a hybrid care manager—individuals that can work with patients with moderate and complex needs. The staffing requirement for hybrid care managers is effectively 1:2,500 (two for every 5,000 patients). This change, along with the barriers to implementing the original non-hybrid model, has led the state to modify the 1:2,500 staffing requirement for at least the first year, and 80% of this staffing ratio (i.e., 1:3,125) is considered passing.

Fourth, physician organizations and practices must also participate in a variety of learning activities, including regional meetings, learning collaboratives, and webinars. The learning activities are designed to create a common knowledge base and provide an opportunity to share best practices.

Support to practices. MiPCT includes a complex payment system designed to provide financial incentives and rewards to practices, with payment schedules and methodologies varying by payer. Each payer financially supports the participating practices and physician organizations through three types of payments: practice transformation payments, care coordination payments, and incentive payments (*Table 9-4*):

- Practice transformation payments: Practices receive these payments directly to offset the investment and operational costs of building PCMH infrastructure, such as purchasing disease registry software.
- Care coordination payments: These payments are made to the physician organizations to fund care management services. Physician organizations either keep the payment for the care managers they hire or they pass it along to practices that hire their own care managers. Physician organizations submit quarterly financial reports to MiPCT to ensure that the care management payments are spent only on care management activities.
- Incentive payments: Payers make incentive payments into a pool administered by the University of Michigan Health System that is dispersed to physician organizations semi-annually. The pooled funding is distributed to physician organizations based on their affiliated practices' performance on metrics chosen by the MiPCT Performance Incentive Committee. For the first performance period, incentive payments are based on process measures, including access (e.g., same-day and extended-hour appointments), disease registry functionality, and care management staffing. By the third year, the Performance Incentive Committee plans to include fewer process measures and more outcomes measures. The first set of incentive payments was sent to physician organizations in December 2012. Physician organizations are required to pass through at least 80% of the payments to practices.

In addition to the payments to participating practices and physician organizations, all payers also fund program management, evaluation, data analytics and learning activities through a per member per month (PMPM) administrative support fee paid to the physician organizations.

Table 9-4
Summary of per member per month Michigan Primary Care Transformation (MiPCT)
Project payment amounts

Payment Type	Medicare	Medicaid Managed Care	BCBSM	Blue Care Network
Practice transformation	\$2.00	\$1.50	\$1.50*	\$1.50
Care coordination	\$4.50	\$3.00	\$3.00*	\$3.00 [1]
Incentive	\$3.00	\$3.00	\$3.00*	\$3.00 [1]
Administrative	\$0.26	\$0.26	\$0.26	\$0.26
Total	\$9.76	\$7.76	\$7.76	\$7.76

NOTE: [1] Actuarial equivalent. BCBSM=Blue Cross Blue Shield Michigan

SOURCE: MiPCT Payment Flows. From the MiPCT website, mipct.org, go to Resources, then Documents. This link is available under the category of resources titled “Billing and Payment”. URL: <http://mipctdemo.files.wordpress.com/2011/09/mipct-payment-flows.pdf>. Also available in *Appendix 9A*.

Medicare and Medicaid use a PMPM payment methodology for all payments. From January 1, 2012 to December 31, 2012, CMS paid a total of \$21,549,865 in MAPCP Demonstration fees to the participating practices for Medicare beneficiaries that participated in the MiPCT.

BCBSM pays practice transformation and care coordination payments on a FFS basis. Practice transformation payments are paid to practices using an enhanced fee schedule for certain Evaluation and Management (E&M) codes. BCBSM pays for care coordination using new G-codes, which are paid to the physician organizations and then passed on to practices when appropriate. BCBSM has agreed to make additional payments to providers if the E&M and G-code payments are not equivalent to the payment levels agreed to for MiPCT.

Blue Care Network takes a hybrid approach, paying practice transformation payments as a PMPM amount and care coordination payments on a FFS basis through the use of G-codes.

Both BCBSM and Blue Care Network have their own incentive programs that pay bonuses for different PCMH capabilities and quality of care measures. Each insurance plan maintains its own incentive programs, but they are required to show that they are paying the actuarial equivalent of \$3 PMPM to participating practices, the amount required by MiPCT. Medicare and Medicaid pay a PMPM amount into an incentive fund, and those incentives are divided among physician organizations and practices.

PCMH practices depend heavily on the physician organizations’ infrastructure to reduce administrative burden and support PCMH development across a number of independent

practices. Unique to Michigan, physician organizations have many responsibilities in the project: they collect data and submit specified reports on behalf of the practices; they communicate project expectations to participating practices and help practices meet those requirements; they hire care managers to share across affiliated practices that are too small to sustain their own care management staff; and they distribute the financial payments that are unique to the project.

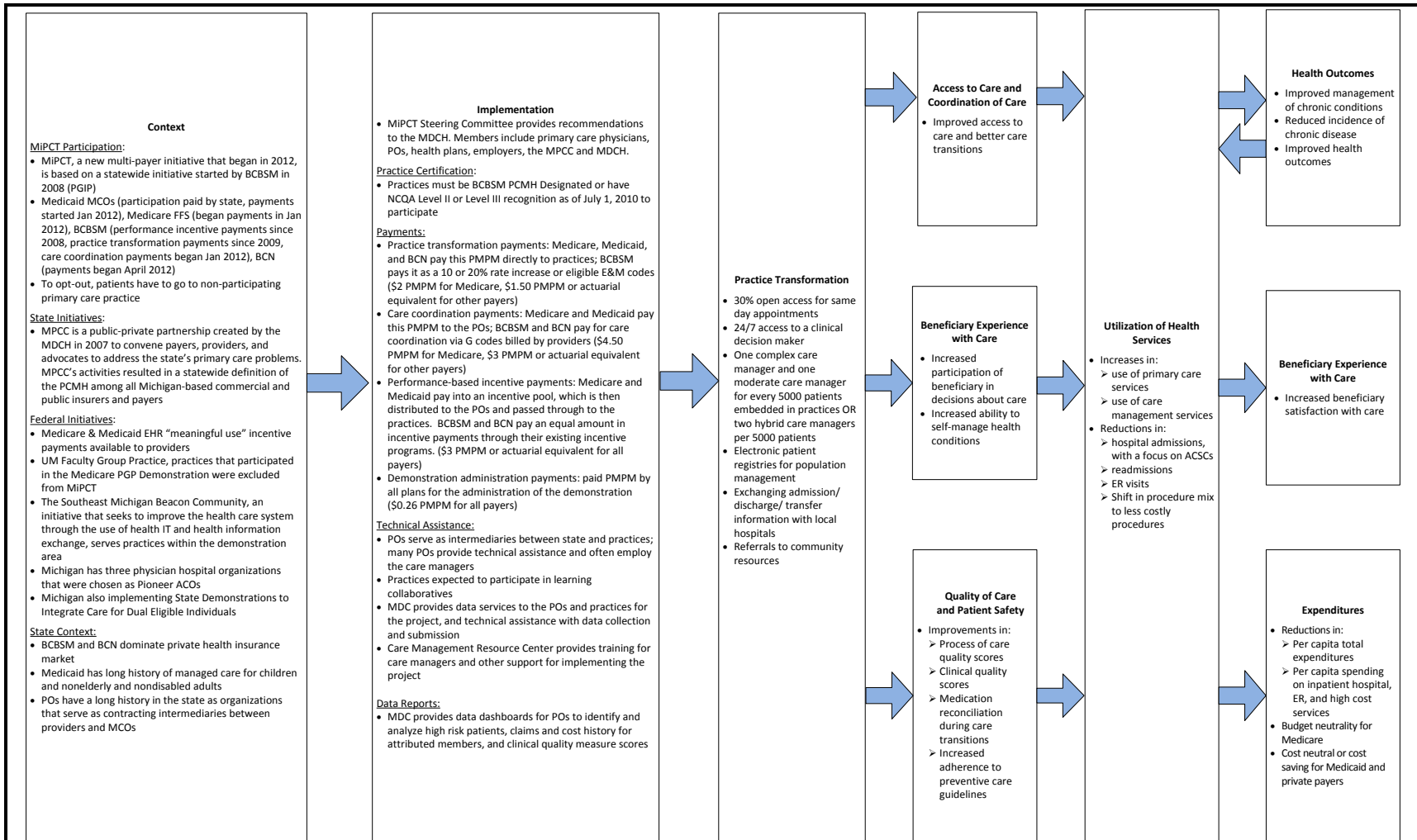
MiPCT also supports practices through a number of learning activities. The learning collaboratives consist of three in-person meetings, webinars, and conference calls—all funded through the \$0.26 PMPM administrative fee. The focus of the learning collaboratives was the role of the care manager and how to effectively embed care managers within practices.

The Michigan Data Collaborative provides data analytic support. It calculates risk scores for patients and provides a data dashboard to physician organizations through a web portal. The dashboard draws from claims, encounter, eligibility, and attribution data from multiple payers. It gives physician organizations the ability to assess their performance compared to other physician organizations and benchmarks, as well as to drill down to the individual patient level. The dashboard is updated bimonthly and includes data going back to January 2010. The dashboard was launched in October 2012. The initial version of the dashboard had limited capabilities and only drew from Medicare and Medicaid data. Data from BCBSM and Blue Care Network and more capabilities were being added.

9.1.2 Logic Model

Figure 9-1 portrays a logic model of the MiPCT Project. The left-hand side of the figure describes the context for the project. The project context informs the implementation of MiPCT, which incorporates a number of strategies to promote transformation of practices to PCMHs. Beneficiaries in these transformed practices are expected to have better access to care and more coordinated care; to receive safer, higher quality care; and to be more engaged in decision making about their care and management of their health conditions. These improvements in care will promote more efficient utilization patterns, including increased use of primary care services and reductions in inpatient admissions, readmissions within 30 days after discharge, and emergency room (ER) visits. These changes in utilization patterns are expected to produce improved health outcomes (which can, in turn, reduce utilization), greater beneficiary satisfaction with care, changes in expenditures consistent with utilization changes, and reductions in total per capita expenditures, ensuring budget neutrality for the Medicare program and cost savings for other payers involved in the initiative.

**Figure 9-1
Logic Model for Michigan Primary Care Transformation Project**



ACO: Accountable Care Organization; ACSC: Ambulatory Care Sensitive Conditions; BCBSM: Blue Cross Blue Shield of Michigan; BCN: Blue Care Network; CMS: Centers for Medicare and Medicaid Services; EHR: Electronic Health Record; ER: Emergency Room; FFS: Fee-for-Service; IT: Information Technology; MCO: Managed Care Organization; MDC: Michigan Data Collaborative; MDCH: Michigan Department of Community Health; MIPCT: Michigan Primary Care Transformation Project; MPCC: Michigan Primary Care Consortium; NCQA: National Committee for Quality Assurance; PCMH: Patient-Centered Medical Home; PGIP: Physician Group Incentive Program; PGP: Physician Group Practice; PMPM: Per Member Per Month; PO: Physician Organization

9.1.3 Implementation

This section uses primary data gathered from the site visit to Michigan in October and November 2012 and presents key findings from the implementation experience of state officials, payers, and providers to address the evaluation questions described in *Section 9.1*.

External Factors Affecting Implementation

The MAPCP Demonstration opportunity led to MiPCT's formation. At the time the demonstration opportunity was announced, there were multiple efforts already under way in the State to strengthen primary care. For example, the Michigan Department of Community Health had reached agreement with other stakeholders through participation in the Michigan Primary Care Consortium on the definition of a medical home. There also had been some efforts to transform care at the practice level, and BCBSM had created an ambitious PCMH component in PGIP and was making payments to qualified practices. The Medicaid agency in the Department of Community Health had a managed care contractor bonus program that supported key aspects of primary care transformation, such as the use of registries. However, the Medicaid agency did not have a PCMH recognition process in place and was not making additional payments to practices recognized as PCMHs. Michigan used the MAPCP Demonstration opportunity as a means to draw together and build on these separate efforts, especially the BCBSM PGIP.

Basing MiPCT on PGIP was critical to implementing the program quickly and broadly. One state agency representative summed up the decision to use PGIP as a base on which to build, "We chose to leverage what we saw as an incredible investment; and what we saw as an opportunity."

While building on BCBSM's PGIP program eased implementation, its use also hindered participation in the project by non-Blue Cross payers. BCBSM is by far the dominant commercial insurer in Michigan and PGIP is a signature program of BCBSM. Six large commercial payers other than BCBSM provided letters of support for the State's application to CMS for the demonstration. However, only one of these, Blue Care Network (which is owned by BCBSM), is participating in the project; the other five declined to join the project. The project's reliance on BCBSM's PGIP was the main reason cited by other payers for their decision. As one interviewee stated, "They (the other commercial payers) need to be different to compete. They need to pursue their own innovations. I think that signing on to Blue Cross would be viewed as making their brand disappear."

The physician organizations also have played a critical role in helping practices address the administrative and other requirements of the project and in helping the state reduce the number of organizations with which it had to communicate. This approach, however, also created a layer of bureaucracy between program administrators and participating practices.

Evolution of Pilot Implementation with Medicare's Entrance

Structural and organizational changes needed to accommodate Medicare. MiPCT did not change when Medicare "entered" because MiPCT was formed to participate in the MAPCP Demonstration. Medicare's participation in MiPCT had a great impact on program policies and the structure of the care management model used by the practices. The needs of the

Medicare population led to the care management structure, which requires one moderate care manager and one complex care manager for every 5,000 patients. “It led to recognizing that we needed complex care managers, or rather that we needed care management on two levels. The elderly are more likely to have chronic conditions that are more likely to lead to high costs if not under good control,” said one respondent. This care management structure further evolved during implementation when practices and physician organizations raised concerns that the staffing model did not adequately meet the needs of small or pediatric practices. In response, the project allowed practices and physician organizations to hire hybrid care managers who can provide both moderate and complex care coordination services. Although 389 care managers have been hired and trained, interviewees reported that that doing so took longer than expected.

For many years, Michigan’s Medicaid agency has enrolled almost all Medicaid beneficiaries (including Supplemental Security Income beneficiaries) into managed care organizations (MCOs). The agency had to modify its approach during MiPCT implementation. Originally, the agency had intended that Medicaid-contracted MCOs would make the payments for their patients to the practices and had intended to adjust the capitation rates paid to the MCOs to reflect that payment. Interviewees reported that the MCOs refused that proposal, even though 11 of them signed letters of support for the MAPCP Demonstration application. Similar to the non-participating commercial plans, Medicaid MCOs did not want to directly participate in a program that was based on a competitor’s model. Instead, the state Medicaid agency is making payments directly to physician organizations and practices for all Medicaid managed care enrollees. The decision to pay physician organizations and practices directly rather than through the Medicaid MCOs allowed Michigan to enroll the Medicaid MCO enrollees into the project despite the decisions by individual MCOs not to participate. This approach makes most Medicaid MCOs “free riders” for the reform. The project is a significant additional cost to the Medicaid agency since any savings due to reduced utilization will accrue to the MCOs and not to the state Medicaid agency. It also leaves the Medicaid MCOs, which are responsible for the care of the enrolled patients, outside of the project.

Attribution and enrollment before and after Medicare’s entrance. Because MiPCT started with Medicare as a full partner, attribution and enrollment did not change with Medicare’s entrance. However, one interviewee reported that differences in how patients are associated with a practice played a role in the reluctance of some Medicaid MCOs and commercial health maintenance organizations (HMOs) to join MiPCT. Under an enrollment approach used by MCOs, all members prospectively choose or are assigned to a practice. In contrast, Medicare and BCBSM use an assignment approach, in which the payer analyzes claims or other utilization information to attribute a beneficiary or member to a practice. Payers who use the enrollment approach would make MiPCT payments for all qualified members regardless of whether they actually obtain care from their designated primary care provider, while insurers who use the attribution approach make payments only for beneficiaries and members who actually receive services at their assigned practice. As a result, the financial obligation of a payer that uses the enrollment approach would be greater than that of a payer that uses the attribution approach. As one payer summarized, “I’m paying for every teenager, many who don’t go see their doctors.”

Changes in resource allocations and financing as a result of Medicare’s participation. Both BCBSM and Blue Care Network changed their payment methods in order

to participate in MiPCT and dedicated new funds to the project. Some interviewees, primarily providers, expressed concerns about the current payment structure, primarily that payments were not adequate. Others reported that they were learning lessons from implementing the current structure that would shape future initiatives.

BCBSM had been making payments to participating PCMHs under its PGIP program, but began making payments for care coordination using G-codes when it joined MiPCT. Some respondents reported that practices have encountered difficulty in billing the G-codes and, overall, G-code billings have been less than expected. At the time of the site visit, BCBSM had been moving to make additional payments, but they have expressed concern that the low billings reflect low care manager activity. Before the project's launch, Blue Care Network had not been making PCMH payments so they needed to implement the payment system.

Some payers interviewed during the site visit judged MiPCT as very costly. The total cost of participation for commercial payers and Medicaid managed care plans is \$7.76 PMPM. In a program the size of Michigan's, this quickly adds up to a large amount of money. Self-insured purchasers have been reluctant to join the project largely due to cost. BCBSM and Blue Care Network have been unable to bring all of their self-insured groups into the project. One respondent assessed the \$7.76 as being about 2% of the monthly amount most self-insured groups pay. Thus, long-term participation in the initiative will depend on proof of return on investment.

Some interviewees reported that they would modify the payment model if they could. A few interviewees said that they believe it would be better to pay more for patients with more complex needs and less for healthier people.

One respondent argued that the monthly care coordination payment structure does not support the goals of the program. Because Medicare and Medicaid pay a PMPM fee for care coordination services, the PCMHs are paid even when practices do not provide many care coordination services. In contrast, the G-codes used by BCBSM and Blue Care Network are FFS billings. Thus, PCMHs are paid for care management only when they have provided a care management service. This creates a financial incentive for the practices to fully incorporate care managers into the practice flow and to make sure their patients are using these services. In addition, these two payers can analyze claims data to determine how many patients are being seen by the care managers and how many times a patient receives care coordination services. Further, the lack of utilization data for care management services for Medicare and Medicaid beneficiaries makes it difficult to assess whether payments were sufficient. On the other hand, other interviewees reported concerns about the G-codes. These respondents complained about the administrative burdens of billing for these services and noted that many of the bills have been rejected for various reasons, including incomplete billing information.

Some interviewees raised concerns about the payment structure. Some reported the providers wanted more flexibility in how the payments are spent. Currently the care coordination payment can only be spent on care management, while practices can choose how they spend the practice transformation payments and incentive payments. Many providers also said that they believed the payments are not sufficient or that not enough payers are participating to support long-term sustainability.

Spillover effects on Medicaid and private payers as a result of Medicare's participation. Michigan interviewees reported that Medicaid and Medicare's participation as payers sent a strong signal to providers about the importance of primary care. BCBSM expects providers to take an all-payer approach to practice transformation by applying the care processes developed as a PGIP provider to all patients regardless of payer. Thus, Medicare's and Medicaid's participation means that PGIP practices no longer need to use BCBSM funding to support enhanced care for Medicare or Medicaid beneficiaries. An exception to this is that new care managers funded by the project are to focus on patients covered by participating payers, so it is unlikely that these new resources will spill over to benefit patients covered by non-participating payers.

Although few payers signed on to MiPCT, it has had an effect on at least one non-participating commercial payer that makes a separate incentive payment for PGIP-designated practices not participating in MiPCT. This insurer advertises its incentive program as superior to other insurers' programs because it recognizes "all patient-centered medical home designations" (in contrast to only the BCBSM designation and NCQA PPC[®] PCMH[™] recognition). It notes that its support is ongoing and that all primary care providers are eligible, including independent physicians and those recognized after July 2010 — all features in contrast with the MiPCT, which is time-limited, requires physicians to be affiliated with a physician organization, and pays only for a subset of practices that were recognized as of July 2010.

Other payers and purchasers are watching Medicare's participation in MiPCT closely. One payer interviewed recommended that CMS require Medicare Advantage plans to participate, although the interviewee recognized the legal challenges such a requirement would create. If Medicare realizes meaningful cost savings through the MAPCP Demonstration, non-participating payers and purchasers may find investment in MiPCT worthwhile.

Impact of data systems in MiPCT. In 2012, the project's data systems work primarily focused on creating the MiPCT dashboards. Michigan began rolling out the dashboards to practices in October 2012. Launching the dashboards took longer than anticipated primarily due to delays on several subtasks, including delays in receiving the Medicare data and signing agreements with BCBSM and Blue Care Network. The initial dashboard versions had limited capabilities and only Medicaid and Medicare data.

Impact of technical assistance to practices in MiPCT. Much of the emphasis of technical assistance has been on the role of complex and hybrid care managers and their importance in the care transitions process. The role of the moderate care managers, who provide a disease-management model of care management with a focus on patient education and self-management, received less attention. All of the state staff emphasized that the initial focus was on care transitions, which is outside the purview of the moderate care managers. One moderate care manager said there had been very little support for moderate care managers. While complex care managers received a full week of training, moderate care managers received two days of training.

The most frequently mentioned technical assistance effort was partnering with Geisinger Health Plan to train complex care managers. Program administrators chose the Geisinger model because it is evidence-based. Many interviewees reported that the training was very helpful and

the model worked. A few interviewees reported that adapting the Geisinger Health Plan model (and training) to meet the project's needs created tension with Geisinger because the developers were invested in their specific model and maintaining their intellectual property rights. As a result, negotiating the contract and trainings with Geisinger Health Plan became more complex and took more time than anticipated. One interviewee argued that the "patient-centered" care of the Geisinger model was inadequate, and that the training that care managers received must be "person-centered." That is, the care provided by physicians and care managers needed to take more into account more than just an individual's medical care needs. A few respondents identified ways to improve the training, such as making sure that the care managers' supervisors were better informed of the expectations created by the training.

9.1.4 Lessons Learned

Three implementation lessons stand out. First, using BCBSM's PGIP as the standard for participation both helped and hindered implementation. By using a program that already had widespread adoption across the state, a large pool of providers was poised to participate in MiPCT. On the other hand, including performance requirements created by BCBSM, the dominant insurer in the state, directly led to non-participation by other commercial payers, many of whom had submitted letters of support for Michigan's MAPCP Demonstration application. Second, a program of this scope required physician organizations to serve as an intermediary between program administrators and practices. These physician organizations also provided a means for practices to share resources, such as care managers. And, third, even a relatively small PMPM payment can quickly add up to a daunting amount for payers, especially those that enroll (rather than attribute) members to PCMHs. Many payers are reluctant to invest in PCMHs without evidence that the investment will result in cost savings or improved quality of care. Some interviewees believed that the current payment methodology does not adequately capture the additional costs to care for individuals with complex health needs.

9.2 Practice Transformation

This section seeks to answer evaluation research questions related to describing the features of the practices participating in MiPCT, identifying the changes that practices make in order to take part in the demonstration and meet participation requirements, describing technical assistance to practices, summarizing early views on the payment model, and giving an account of experiences with the demonstration thus far. For this report, we have not conducted any quantitative analyses but have relied upon findings from our initial site visit and secondary data provided by the state to answer these research questions

9.2.1 Changes Practices Made to Join MiPCT

Practices are making a number of changes related to PCMH recognition, administrative issues, and health IT in order to participate in MiPCT.

PCMH recognition. A key feature of MiPCT is that practices needed to be designated or recognized as a PCMH prior to the start of the project. Indeed, all of the participating practices had BCBSM's PCMH designation through PGIP as of June 2010, well before the start of the MAPCP Demonstration. As a result, they were already familiar with the PCMH concept and had already begun transforming their practices before MiPCT began. These transformation

initiatives included developing capabilities such as tracking test results, monitoring performance, and operating a patient portal. None of these were mandatory under the PGIP program, but some practices had developed these advanced capabilities.

There were several additional requirements that were encouraged under MiPCT but not required under BCBSM's PCMH designation. To participate in MiPCT, practices must provide 24 hours a day/7 days a week availability of a clinician to patients, modify their appointment system so that at least 30% of the daily appointments are available for same-day appointments, and establish an electronic disease registry (either as part of an electronic health record (EHR) or as a stand-alone system). Many of the practices reported that they had these features before MiPCT began. Practices that needed to implement these changes to join MiPCT reported success in implementing them.

Administrative changes. Physician organizations play an important role in MiPCT. Most physician organizations existed prior to the project, serving as contracting intermediaries with health plans for the practices they represented. The state chose them to be intermediaries for MiPCT so that the state would not have to negotiate and communicate directly with almost 400 practices and over 1,000 physicians. In contrast to the number of physicians and practices, in September 2012, there were only 36 physician organizations. Physician organizations varied in their activities; some were intimately involved in all the activities of the project, while others more removed and distant. The major nonfinancial activity of the physician organizations is to hire, train, and, often, house the care managers for smaller practices. This role reportedly went well, although it developed more slowly than desired.

Care managers sometimes are located in the practices, with their own office or desk. In those cases, practices had to find office space, telephones and support for the care managers. More often, because of volume and demand, care managers cover several practices and do their work remotely, at the physician organization offices or elsewhere. Wherever they were located, most care managers reported easy access and communications with the practice physicians and staff, either in person ("they're just down the hall") or by phone. Practice staff were enthusiastic about the care managers' work, were pleased with care manager activities with respect to care transitions (the "complex" care manager role), and expect to find that their interventions will add value to the practice and improve patient care and outcomes.

Care managers are notified about potential clients in different ways. Often they receive daily or regular discharge lists from local hospitals via fax; other times patients are referred to them by practice staff. Care managers were supposed to limit their services to beneficiaries of participating payers, and those we spoke with usually (although not always) restricted their activities in this way.

Health information technology. Adoption of EHRs was another major change that was often facilitated (although not mandated) by MiPCT. While some practices have had EHRs for a long time (some implemented them as far back as 2001), most practices we interviewed acquired them during this project. Some practices we spoke with do not have EHRs.

The practices generally reported EHRs as being excellent for internal office quality improvement. They can remind providers when certain tests or screenings are due and can be

queried to provide lists of patients with certain diseases to check if appropriate care has been given. On the other hand, practices also reported that EHRs can be “clunky and counter-intuitive” to use, as they are not always designed to generate the data needed for MiPCT. In particular, many EHRs do not integrate care management data easily, and existing care management software packages are hard to integrate with existing EHR systems. The adoption of EHRs by many practices necessitated other changes, such as hiring of coders and additional training of employees.

EHRs are often lacking in their ability to connect with other information technology (IT) systems. If a patient uses services outside the system, the health system EHR will not have a record of that service use. Also, most practices reported that their EHRs had limited capabilities for data transfer with hospitals (usually laboratory test data), and they did not receive reports from ER or inpatient visits into their EHRs. No practice we spoke with reported receiving specialist consultation notes into their EHRs.

Practices reported variable quality and usefulness of IT systems other than EHRs. Systems for tracking hospitalizations and ER use are variable and still being implemented. The lists of patient activity (e.g., admissions, discharges, ER use) that come to practices in various ways (fax, mail, email) from physician organizations often lag substantially, preventing timely contact and interventions. Some frustration was expressed by practices and care managers that they were not notified earlier of hospitalization or ER visits.

9.2.2 Technical Assistance

The physician organizations provide technical assistance to the practices. Specifically, they assisted practices in obtaining or maintaining PCMH designation, where needed, and in some cases, they sent trainers in team building and general PCMH principles to the practices. Some physician organizations held webinars for the practices, which were viewed positively. Learning collaboratives, which are to be a central feature of the technical assistance provided by MiPCT, were being planned for 2013.

9.2.3 Payment Supports

Some practices commented that the increased funding from Medicare and other payers under the project made it possible to hire care managers for more of their patients. However, practices also said that the different payment systems across payers added complexity and make it difficult for the practices to track payments and allocate them in support of the MiPCT project. In fact, most practices could not specify where exactly the extra funding was going. Usually these funds were pooled with the general receipts of the practice.

Those that did know how the MiPCT payments were being used said that the care coordination payments were used, either by the physician organizations or the practices, to hire care managers. Many practices indicated they used their practice transformation payments to support the care managers. As a result, some practices felt that other administrative requirements were relatively uncompensated. Also, because the care managers usually focus only on patients insured by a participating payer, funds were not available for care coordination for patients of non-participating payers or who are uninsured.

Incentive payments are paid to the physician organizations, with the requirement that at least 80% of the funds be distributed to practices. The proportion of MiPCT funds retained by physician organizations varies. Some physician organizations we spoke with stated that they keep the full 20% and use it for administrative, data analysis, and training expenses. On the other hand, one physician organization reported that they served only as a pass-through and kept none of the MiPCT incentive payments. Several state officials and physician organizations said that the varying capabilities of physician organizations to provide support were not taken into account when determining how much the physician organizations could retain, and some physician organizations are providing more in services to their practices than their level of compensation.

Practices report that certain costs (e.g., new staff and computers) are practice-wide and are not linked to individual patients. As a result, not all of these costs are recoverable since not all payers are making payments on behalf of their members, even though they are benefitting from these practice-wide resources.

Overall, practices that we interviewed either could not determine whether the MiPCT payments were sufficient to offset their costs or argued that they were not. Several practices said they are involved in PCMH activities to improve patient care and not to make money. They stated that if they lose money, at least the initiatives are good for the patients.

9.2.4 Summary

Prior to MiPCT, all participating practices had already achieved some form of PCMH certification and thus had begun the medical home transformation before the MAPCP Demonstration began. The two major changes that practices experienced during the first year of the demonstration were the hiring of care managers and (in many cases) the implementation of EHRs.

Care managers worked either part- or full-time in practices. Often they were located within the practices, sometimes in physician organization offices. Care managers performed both moderate (counseling of patients with chronic diseases) and complex (facilitating care transitions) duties and were uniformly enthusiastic about their work. They reported good communication with their practice clinicians but were often frustrated by inadequate communication and health IT services to inform them of patient care transitions.

EHRs were seen as both helpful and “clunky” by practice staff. Although they facilitated quality improvement activities, such as tracking preventive care, they were rarely integrated into hospital/community/specialist systems. Reports from these outside groups usually were still being faxed to practices and scanned into the EHRs.

Most of the extra payments to physician organizations and practices from the project were used to hire and support care managers. Practices complained that the diversity and complexity of the payment schemes made it difficult to track. Few practices were certain that the payments were sufficient to cover their costs and sustain the program.

9.3 Quality of Care, Patient Safety, and Health Outcomes

9.3.1 Implementation of State Initiative and Practice Features Expected to Improve Quality of Care, Patient Safety, and Health Outcomes During Year 1

Ultimately, the aim of MiPCT is to improve individual health outcomes and population health. A state official described the health outcome goals of the project as threefold—to keep healthy people healthy through public health measures and preventive care, to keep the population at risk for developing chronic disease from progressing to chronic disease through self-management education and risk-behavior reduction, and to better manage people with chronic and complex health conditions through care management. The interventions in MiPCT are mostly aimed towards at-risk, chronic, and complex patients, but the clinical project staff felt that in the long term, spending less on high-cost patients would free up money for population health activities, and the transformation of primary care would result in higher quality care for all.

Initiatives to improve quality of care, patient safety and health outcomes include establishing quality measures, implementing patient registries, and medication reconciliation. Quality metrics are included in the dashboards developed by the Michigan Data Collaborative that are available to physician organizations and are used in allocating the incentive payments. By making quality measures available to each physician organization and rewarding high performance and improvement on quality measures with incentive payments, the project aims to improve quality of care. The first year quality measures included Health Effectiveness Data and Information Set (HEDIS) measures and primary care sensitive emergency room (ER) visits (defined using the New York University algorithm; Ballard et al., 2010). Clinical data will be incorporated into the measures in the second and subsequent years.

Data reporting from the Michigan Data Collaborative goes to the physician organizations, which are expected to pass it along to the individual practices; practices do not have direct access to the dashboards. This was preferred by state staff because it did not require them to distribute computer log-ins and support to over 400 practices. It is not clear how physician organizations plan to share this information with practices, and if so, how often. However, due to reports of varying levels of capacity at different physician organizations, an issue is whether physician organizations have the capability to help practices use the data effectively.

By the end of 2012, all participating practices were required to have an electronic patient registry that tracks process of care and outcome data on certain populations of patients and is capable of submitting clinical data to the Michigan Data Collaborative. The electronic registry can be used to identify gaps in care, such as a diabetic patient who has missed an HbA1c test or a child who has missed a recommended vaccination. In addition, these capabilities can be used to monitor use of preventive services and the management of chronic illnesses according to evidence-based guidelines. These data will be used to calculate quality measures beginning in the second year. The first data transmissions to test electronic registry capabilities were expected to occur in December 2012 and January 2013.

During our site visit, several practices reported they were already using registry data to improve care processes in primary care, such as ensuring patients referred for colonoscopies

actually got the test. Practices previously received reports with this information from many different payers, and some interviewees said the data were often incomplete, outdated, or conflicted with their own internal records. One practice stated that both the registry and the data dashboard from the Michigan Data Collaborative would be helpful in better understanding which patients were not getting preventive services or evidence-based care and needed follow up.

An important patient safety initiative of MiPCT is medication reconciliation. Medication reconciliation is most commonly performed by complex care managers when they are working with a patient in a transition of care from a hospital or ER. While medication reconciliation appears to take place primarily in the context of a hospital or ER discharge, some care managers did medication reconciliation every time a high-risk person had a primary care visit. One care manager encouraged her patients to bring in all their medications at each visit for them to go over together. None of the care managers we talked with specifically mentioned a specialist visit as triggering medication reconciliation. Care managers reported that medication conflicts (e.g., two drugs prescribed in the same class, drug-drug interactions) were common and could be resolved with careful medication reconciliation.

9.3.2 Impacts on Quality of Care, Patient Safety, and Health Outcomes

Quantitative data assessing the impacts of the MiPCT on quality of care, patient safety, or health outcomes on Medicare beneficiaries are not yet available. Future annual analyses and reports will assess the impact on these outcomes. Beginning with the second annual report, we will include descriptive and, where appropriate, multivariate analyses of process of care quality indicators, EHR Meaningful Use rates, prevention quality indicators, as well as outcomes on mortality, and incidences of serious medical events, using Medicare data. We will also provide results on self-reported health status based on the PCMH-Consumer Assessment of Healthcare Providers and Services (CAHPS) survey.

9.4 Access to Care and Coordination of Care

9.4.1 Implementation of State Initiative and Practice Features Expected to Improve Access to Care and Coordination of Care During Year 1

MiPCT has two basic initiatives to improve access to care and coordination of care. First, MiPCT participating practices are required to have 30% open access appointments (appointments available for same-day appointments) and 24 hours per day/7 days per week access to a clinical decision maker (usually by phone). Some practices reported they already had 30% open access before the project began. MiPCT also encourages after-hours access and offers an incentive payment to practices that provided at least 12 hours per week of access outside of regular 9–5 office hours by the end of the first year.

Second, complex care managers focus primarily on transitions between care settings. Care managers are trained to contact the patient within 24–48 hours of hospital discharge to do an assessment, medication reconciliation, and set up follow-up appointments and services. In contrast, coordinating care between primary care providers and specialists receives less attention. Several practices and care managers reported working with specialists as an eventual goal, but multiple state officials emphasized that the Geisinger care management model focuses heavily on care transitions as the core of the care management model.

A goal of the project is for all practices to receive admission, discharge, and transfer notifications from local hospitals on a timely basis so complex care managers can follow up with patients within 48 hours of discharge. This information is to be used by the care managers to identify patients currently in a care transition or those who will have one soon. State officials indicated that obtaining admission, discharge, and transfer information has been difficult for many practices, and the practices varied in whether or not they were receiving these data electronically or via faxed discharge summaries.

9.4.2 Impacts on Access to Care and Coordination of Care

Quantitative data assessing the impacts of the MAPCP Demonstration on access to care and coordination of care on Medicare beneficiaries are not yet available. Future annual analyses and reports will attempt to assess the impact on these outcomes. Beginning with the second annual report we will include descriptive and multivariate analyses of several indicators of access to care and coordination of care. Claims-based indicators will include primary care physician and specialist visit rates; ratio of primary care visits to total ambulatory care visits; percentage of discharges from the hospital for a medical admission with a follow-up visit within 14 days; rate of unplanned readmissions within 30 days after discharge; the percentage of ER visits that do not lead to a hospitalization; and a continuity of care index, which measures the concentration of visits among providers in the practice that is the beneficiary's usual source of care or to whom the beneficiary was referred by a provider in that practice. In addition, we will analyze a measure of care coordination based on responses to the PCMH-CAHPS survey.

9.5 Beneficiary Experience with Care

9.5.1 Implementation of State Initiative and Practice Features Expected to Improve Beneficiary Experience with Care During Year 1

Several aspects of the care management program are intended to improve beneficiary care experiences. The care managers help patients navigate the health care system and provide one-on-one interaction beyond that typically provided in a short physician office visit. In addition, each type of care manager provides a set of services that is expected to improve the beneficiary's experience of care.

Care management is designed to improve the beneficiary experience with care through two different paths. First, complex care managers improve beneficiary experience of care by providing support during care transitions. Some examples of activities of complex care managers include ensuring that home care is in place following hospital discharge, making sure patients understand their discharge instructions, and making sure patients are seen for follow up after hospital discharge. Care managers we interviewed noted that many patients are confused after a hospital discharge about their medications and discharge instructions, and believe that they can help the patient navigate the post-acute care period and avoid re-hospitalization. Second, moderate care managers provide patient education and self-management support, which should both improve the health of patients and give patients control over their own health. In addition, patients receiving either of these types of care management are encouraged to create advance directives, which should help beneficiaries, family members, and caregivers participate more effectively in end-of-life decision making. Care managers also link beneficiaries to existing community resources that may benefit them, especially when they have disabilities or

other long-term care or behavioral health needs. Improved access to care in the form of 30% open access appointments and 24 hours a day/7 days a week access to a medical decision maker should also improve the care experience and patient satisfaction.

As stated earlier, the care managers have only recently been fully embedded in most practices. Practices reported variability in how much these services are being used. Overall, care managers reported seeing between 10 and 50 patients each in their face-to-face caseload, and having contact with more patients by telephone. Care managers interviewed generally reported that care management services have been well received by Medicare and Medicaid beneficiaries, with many reporting patients being engaged and very thankful for services. We heard anecdotal evidence of care managers taking care of patients with complex psychosocial needs and helping to meet those needs. Less commonly, care managers reported suspicion from beneficiaries when they receive calls about care management services. Some beneficiaries think it is a scam or do not want to sign up for another program. Many care managers reported that once they explained they were calling from their primary care provider's office and worked with their doctor, resistance to their services faded.

9.5.2 Impacts on Beneficiary Experience with Care

Quantitative data assessing the impacts of MiPCT on beneficiary experience with care are not yet available. In the second annual report, we plan to report our findings from the PCMH-CAHPS survey administered to Medicare beneficiaries.

9.6 Effectiveness (Utilization & Expenditures)

9.6.1 Implementation of State Initiative and Practice Features Expected to Affect Patterns of Utilization and Expenditures During Year 1

Michigan expects most of the cost savings under MiPCT to come from reducing service use among high users of health care services and reducing overall use of hospital and ERs, including ambulatory care sensitive ER visits and inpatient stays, and readmissions. Through quality improvement efforts, they also expect to move to a lower-cost procedure mix. To achieve budget neutrality, MiPCT expects to reduce medical admissions by 3.1%, readmissions by 1.2%, and ER visits by 2.6% in the Medicare population. These reduction estimates were based on BCBSM's experience from PGP (Michigan Department of Community Health, 2010).

Reductions in medical care use by high medical care users were mentioned by several interviewees as "low hanging fruit." The primary tool to decrease use in this population is complex care management. These beneficiaries are thought to be at high risk of inpatient admission, readmission, and ER use. Improved access to care via open access and 24 hours a day/7 days a week access to the PCMH are expected to reduce ER utilization and ambulatory care sensitive hospital admissions. Several interviewees also indicated that "transformed primary care"—that is better tracking and meeting the needs of their patient—will result in lower ER use.

MiPCT's focus is, however, broader than high-cost patients. While complex care managers were seen as the primary mechanism for achieving short-term cost savings, the eventual goal is population health management and across the board risk reduction and health

improvement for all patients, including those who are healthy, high risk, have chronic conditions, and have complex needs. “Transformed primary care” and moderate care management, with its focus on disease management and self-management support, are expected to reduce health care utilization and costs by keeping patients from developing chronic illnesses and by reducing the severity of diseases for those who do have them.

9.6.2 Year 1 Findings on Effectiveness

In this section, we present descriptive statistics and estimates of the demonstration effects from the quarterly fixed effects regression models (*Section 1.2.3, Equation 1.1*) for three Medicare expenditure outcomes (total expenditures, expenditures for short-stay, acute care hospitals, and expenditures for ER visits) and three utilization outcomes (all-cause, acute care hospitalizations, ER visits, and 30-day unplanned readmissions). The results are based on 28 quarters of data.

- Baseline period: January 2006–December 2011 (24 quarters). This is the period prior to the start of the MiPCT project.
- Demonstration period: January–December 2012 (4 quarters). This is the first year after Medicare joined the MiPCT project.

The descriptive statistics reported here are weighted averages of the Medicare expenditure outcomes and utilization rates from 2006 through the first year of the MAPCP Demonstration. The averages are calculated separately for (1) beneficiaries assigned to MiPCT practices, (2) beneficiaries assigned to PCMHs in the comparison group, and (3) beneficiaries assigned to non-PCMHs in the comparison group. The weights adjust the averages for differences in demonstration eligibility and for observable differences in beneficiary-, practice-, and geographic-level characteristics.

The regression models (see *Section 1.2.3*) were estimated separately using two distinct comparison groups: (1) beneficiaries assigned to PCMHs in the comparison group, or (2) beneficiaries assigned to non-PCMHs in the comparison group. The regression results aim to answer two key evaluation questions:

1. Did the MiPCT project affect expenditures and utilization rates during the first year of the MAPCP Demonstration? Specifically, was the MiPCT project associated with slower growth in Medicare expenditures or reductions in utilization, relative to beneficiaries assigned to comparison practices?
2. Did the demonstration effect differ, depending on whether beneficiaries assigned to MiPCT practices were compared to either (1) beneficiaries assigned to PCMHs in the comparison group, or (2) beneficiaries assigned to non-PCMHs in the comparison group?

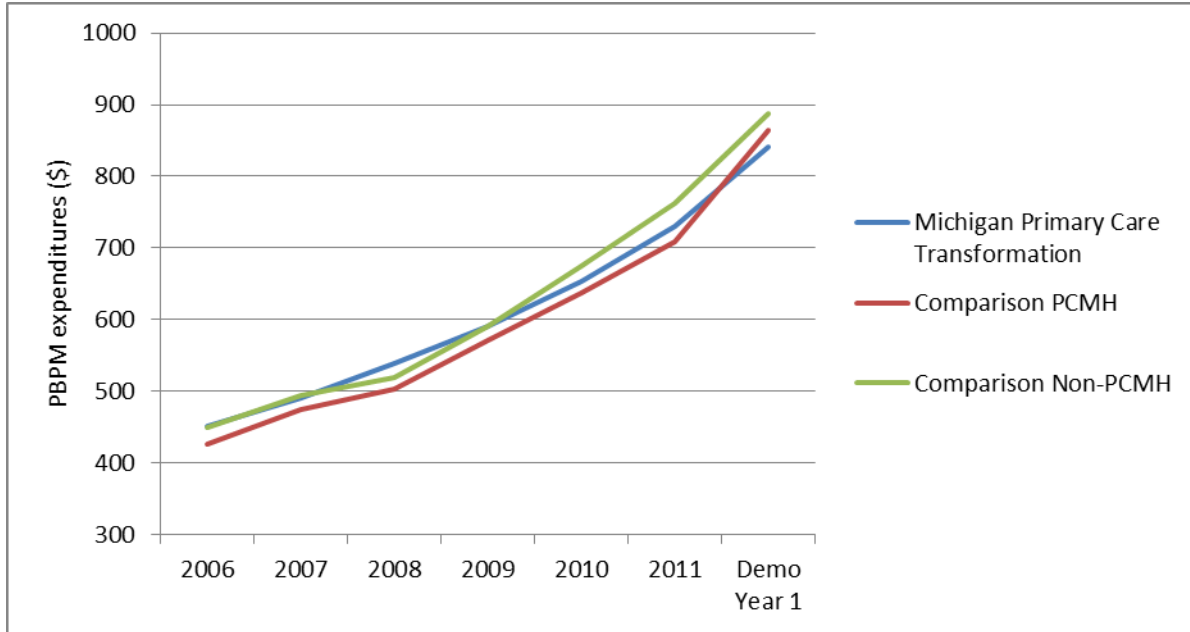
The regression tables presented below will help answer these questions. They contain estimates of the demonstration effects for each quarter, and their standard errors. For expenditures, these are “difference-in-differences” effects. Negative estimates indicate that the growth in expenditures was smaller for beneficiaries assigned to participating practices than for

beneficiaries assigned to practices in the comparison group. Conversely, positive expenditure estimates indicate that the growth in Medicare expenditures was larger for beneficiaries assigned to participating practices than for beneficiaries assigned to practices in the comparison group. We also report the average demonstration effect over the entire first year of the demonstration, calculated as a weighted average of the four quarterly estimates (see *Section 1.2.3*).

For the rates (per 1,000 beneficiaries) of all-cause, acute care hospitalizations, ER visits, and 30-day unplanned readmissions, the quarterly demonstration effects represent, for each demonstration quarter, the (regression-adjusted) change in average utilization among beneficiaries assigned to participating practices, relative to beneficiaries assigned to comparison practices. Negative estimates suggest that during particular demonstration quarters the state initiative was able to lower the utilization rate for beneficiaries assigned to participating practices, relative to beneficiaries assigned to comparison practices. Conversely, positive estimates suggest that the state initiative was associated with increased utilization rates in certain quarters during the demonstration period. As with the expenditure outcomes, we also report the average demonstration effect for utilization rates over the entire first year of the demonstration, calculated as a weighted average of the four quarterly estimates.

Descriptive statistics. Average per beneficiary per month (PBPM) Medicare expenditures and average utilization rates (per 1,000 Medicare FFS beneficiaries) from 2006 through the first year of the MAPCP Demonstration are shown in *Figures 9-2 through 9-7*. Total Medicare expenditures (*Figure 9-2*) increased and showed similar trends for all three groups of beneficiaries. The same was true for expenditures for short-stay, acute care hospitals (*Figure 9-3*). Expenditures for ER visits (*Figure 9-4*) also increased but were lower in 2011 and the first demonstration year for beneficiaries assigned to MiPCT practices, relative to beneficiaries assigned to comparison practices. The rate of all-cause, acute care hospitalizations (*Figure 9-5*) increased between 2006 and the first demonstration year and was mostly higher for beneficiaries assigned to comparison non-PCMHs. The rate of ER visits (*Figure 9-6*) increased but was lower among beneficiaries assigned to MiPCT practices, relative to beneficiaries assigned to comparison practices (PCMH and non-PCMH). Finally, between 2011 and the first demonstration year, the rate of 30-day unplanned readmissions increased, but the increase was less among beneficiaries assigned to MiPCT practices.

Figure 9-2
Michigan: Trend in average total PBPM Medicare expenditures from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to MiPCT practices, comparison PCMHs and comparison non-PCMH practices

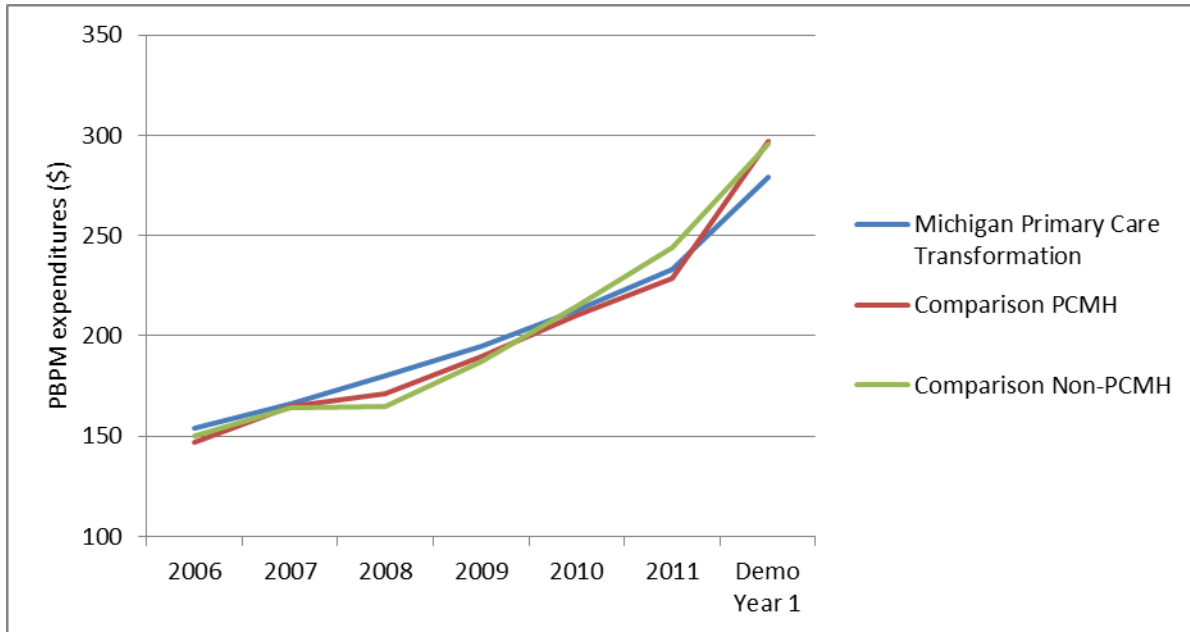


NOTES: MAPCP = multi-payer advanced primary care practice; MiPCT = Michigan primary care transformation; PCMH = patient-centered medical home; PBPM = per beneficiary per month.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). These amounts do not include fees paid by Medicare as a result of participation in the MiPCT project.

Figure 9-3

Michigan: Trend in average PBPM Medicare expenditures for short-stay, acute-care hospitals from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to MiPCT practices, comparison PCMHs and comparison non-PCMH practices

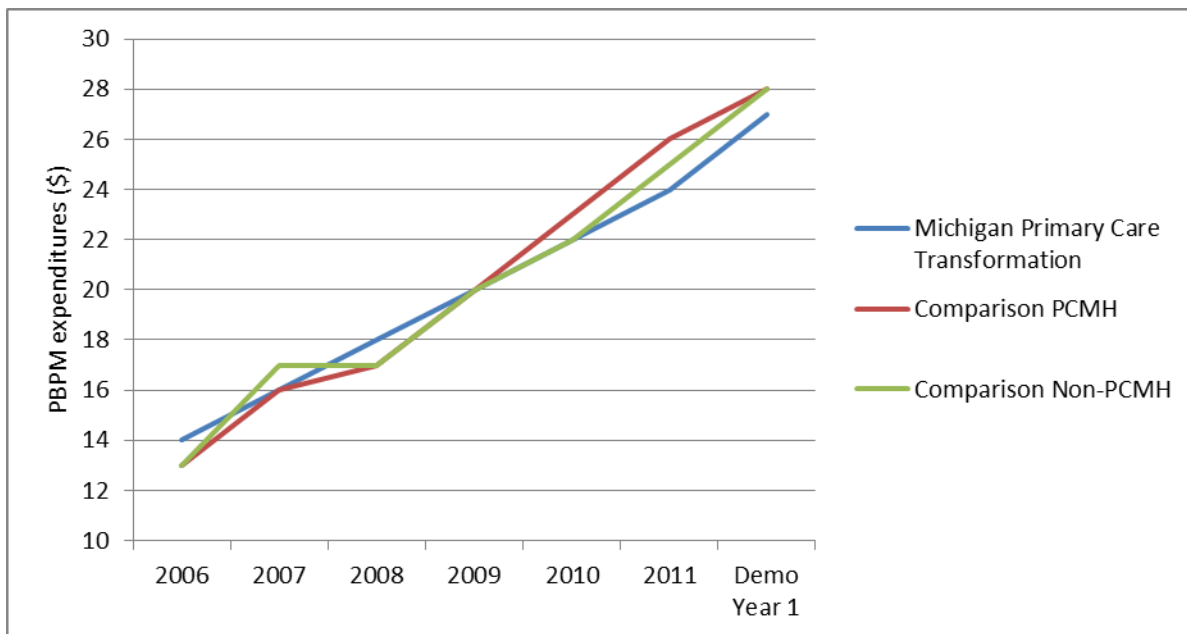


NOTES: MAPCP = multi-payer advanced primary care practice; MiPCT = Michigan primary care transformation; PCMH = patient-centered medical home; PBPM = per beneficiary per month.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). These amounts do not include fees paid by Medicare as a result of participation in the MiPCT project.

Figure 9-4

Michigan: Trend in average PBPM Medicare expenditures for ER visits and observation stays from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to MiPCT practices, comparison PCMHs and comparison non-PCMH practices¹

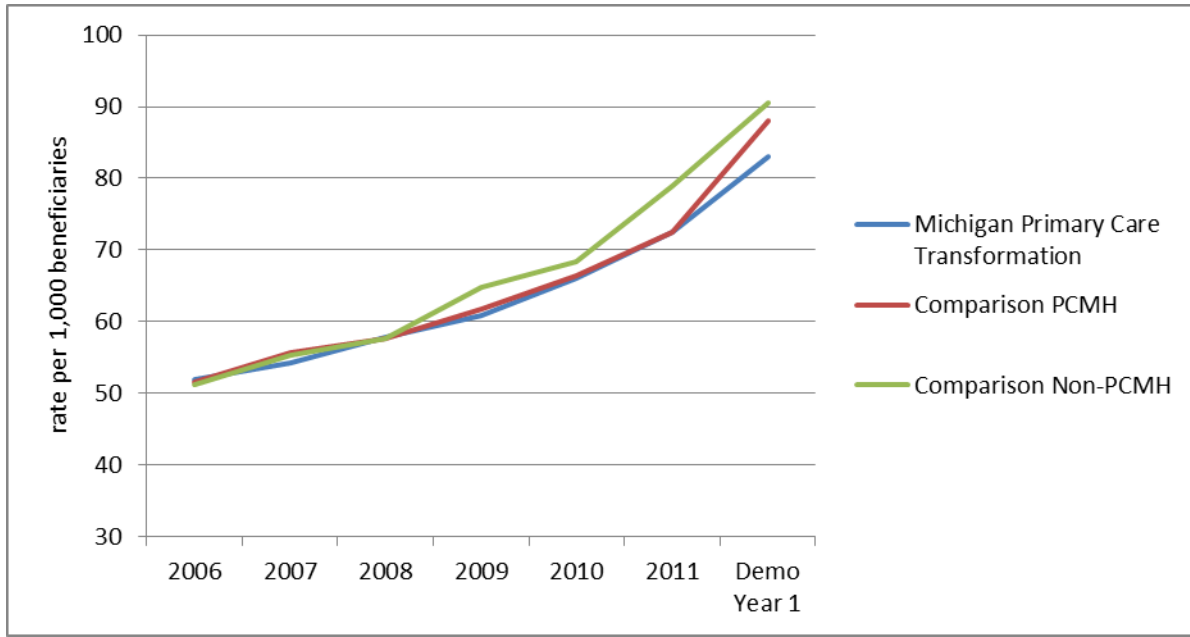


NOTES: MAPCP = multi-payer advanced primary care practice; MiPCT = Michigan primary care transformation; PCMH = patient-centered medical home; PBPM = per beneficiary per month; ER = emergency room.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). These amounts do not include fees paid by Medicare as a result of participation in the MiPCT project.

¹ This excludes Medicare expenditures for ER visits that led to a hospitalization.

Figure 9-5
Michigan: Trend in average rate of all-cause, acute-care hospitalizations per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to MiPCT practices, comparison PCMHs and comparison non-PCMH practices

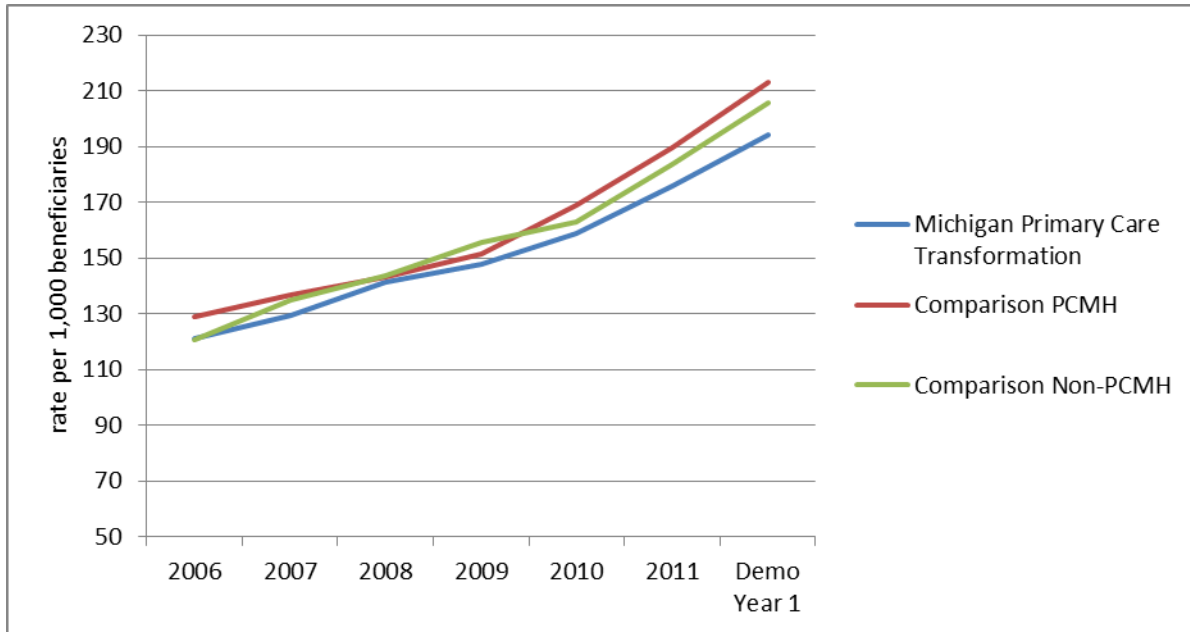


NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; MiPCT = Michigan primary care transformation; PCMH = patient-centered medical home.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group).

Figure 9-6

Michigan: Trend in average rate of ER visits and observation stays per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to MiPCT practices, comparison PCMHs and comparison non-PCMH practices¹



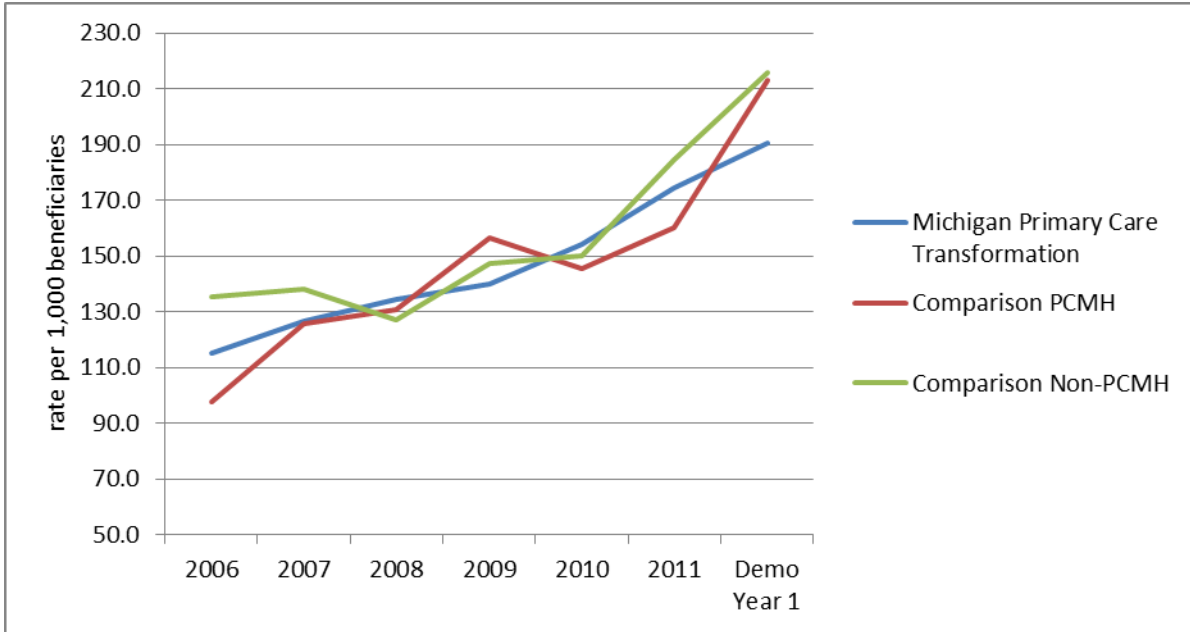
NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; MiPCT = Michigan primary care transformation; PCMH = patient-centered medical home; ER = emergency room.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group).

¹ This includes ER visits that led to a hospitalization.

Figure 9-7

Michigan: Trend in average rate of unplanned hospital readmissions per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to MiPCT practices, comparison PCMHs and comparison non-PCMHs



NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; MiPCT = Michigan primary care transformation; PCMH = patient-centered medical home.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group).

Regression estimates. Quarterly difference-in-differences effects for Medicare expenditures, and their weighted average over the first year of the MAPCP Demonstration, are given in *Table 9-5*. Quarterly demonstration effects for the utilization rates, and their weighted averages, are given in *Table 9-6*.

Table 9-5

Michigan: Quarterly difference-in-differences estimates for PBPM Medicare expenditures during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to MiPCT practices vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Quarter	MiPCT vs. CG PCMH			MiPCT vs. CG non-PCMH		
	Total (\$)	Acute Care (\$)	ER (\$)	Total (\$)	Acute Care (\$)	ER (\$)
Jan–Mar 2012	–24.45 (17.12)	–19.85* (9.62)	–0.58 (0.71)	–18.33 (13.04)	–13.26* (7.43)	–1.32* (0.77)
Apr–Jun 2012	–39.08 (28.71)	–20.58 (14.46)	–1.58 (1.07)	–56.84* (12.51)	–29.23* (7.77)	–1.48* (0.69)
Jul–Sep 2012	–31.66 (26.93)	–9.64 (16.33)	–0.08 (0.9)	–32.9 (20.04)	–12.31 (12.12)	0.04 (0.83)
Oct–Dec 2012	6.98 (44.03)	12.95 (21.74)	–1.45 (1.81)	10.34 (29.68)	–1.33 (22.2)	0.21 (1.02)
Average ¹	–21.99 (25.35)	–9.07 (11.86)	–0.93 (0.79)	–24.56* (12.79)	–14.06* (7.44)	–0.63 (0.49)

NOTES: MAPCP = multi-payer advanced primary care practice; MiPCT = Michigan primary care transformation; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room.

The table contains the difference-in-differences (D-in-D) estimates for Medicare expenditures during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

¹ This is a weighted average of the four quarterly D-in-D estimates, where the weights are the numbers of eligible beneficiaries who are assigned to a MiPCT practice in each quarter.

* p<0.10

Table 9-6

Michigan: Quarterly demonstration effect estimates for utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to MiPCT practices vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Quarter	MiPCT vs. CG PCMH			MiPCT vs. CG non-PCMH		
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)
Jan–Mar 2012	0 (1.9)	3 (2.8)	2 (7.0)	0 (1.4)	1 (2.4)	7 (7.3)
Apr–Jun 2012	-2 (2.0)	-5 (3.1)	12* (6.8)	-5* (1.7)	-4 (4.2)	8 (6.5)
Jul–Sep 2012	2 (3.1)	2 (4.3)	16 (11.8)	1 (2.3)	5 (5.2)	6 (9.4)
Oct–Dec 2012	3 (2.9)	1 (6.6)	-23 (16.3)	2 (2.9)	8 (7.7)	-13 (16.4)
Average ¹	1 (1.7)	0 (2.7)	2 (6.8)	0 (1.1)	2 (3.8)	2 (5.9)

NOTES: MAPCP = multi-payer advanced primary care practice; MiPCT = Michigan primary care transformation; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room.

The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

Due to the non-linearity of the regression models for utilization, the demonstration effect estimates do not have a difference-in-differences interpretation.

¹ This is a weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who are assigned to a MiPCT practice in each quarter.

* p<0.10

From *Tables 9-5 and 9-6*, we reach the following conclusions about the impact of the MiPCT project on Medicare FFS beneficiaries during the first year of the MAPCP Demonstration.

- Between the baseline period and the first demonstration year, the growth in **total Medicare expenditures** (Part A and B) was similar for beneficiaries assigned to MiPCT practices and comparison PCMHs. However, beneficiaries assigned to MiPCT practices experienced slower growth than beneficiaries assigned to comparison non-PCMHs. This result was driven by slower payment growth between the baseline and the second demonstration quarter.

- The growth in **expenditures for short-stay, acute care hospitals** was similar for beneficiaries assigned to MiPCT practices and comparison PCMHs. However, beneficiaries assigned to MiPCT practices experienced slower growth than beneficiaries assigned to comparison non-PCMHs. This result was driven by the first two demonstration quarters and therefore may not persist in the future
- Between the baseline period and the first year of the MAPCP Demonstration, the growth in **expenditures for ER visits** was similar for beneficiaries assigned to MiPCT practices and those assigned to comparison practices (PCMH and non-PCMH).
- During the first demonstration year, the rates of **all-cause, acute care hospitalizations, ER visits** and **30-day unplanned readmissions** did not change significantly for beneficiaries assigned to MiPCT practices, relative to beneficiaries assigned to PCMHs and non-PCMHs in the comparison group.

Cohort 1 analysis. The quarterly fixed effects model was also estimated using only data from the beneficiaries in “cohort 1.” These are beneficiaries who were first assigned to a MiPCT practice or comparison practice during the first quarter of the demonstration (January–March 2012); it does not include beneficiaries who were newly assigned in later quarters. As discussed in more detail in *Section 1.2.3*, the purpose of a cohort 1 analysis was to measure the demonstration effects on stable intervention and comparison groups. In the data used for this report, cohort 1 beneficiaries comprised 78% of the MiPCT group, 80% of the PCMH comparison group and 84% of the non-PCMH comparison group

The full set of cohort 1 estimates for Medicare expenditures and utilization rates are given in *Tables 9B-1 and 9B-2* in *Appendix 9B*, respectively. For convenience, we report the average estimates for the first demonstration year in *Table 9-7*. On comparing these estimates with the ones for the full sample in *Tables 9-5 and 9-6*, we note the following differences and similarities.

- Similar to the estimates based on the full sample of beneficiaries, the growth in **total Medicare expenditures** between the baseline period and first demonstration year was lower among cohort 1 beneficiaries assigned to MiPCT practices, relative to cohort 1 beneficiaries assigned to comparison non-PCMHs.
- Unlike the corresponding estimate based on the full sample of beneficiaries, the growth in **expenditures for short-stay, acute care hospitals** was similar for cohort 1 beneficiaries assigned to MiPCT practices and cohort 1 beneficiaries assigned to comparison non-PCMHs.
- The rates of **all-cause, acute care hospitalizations** and **ER visits** did not change significantly for cohort 1 beneficiaries assigned to MiPCT practices, relative to cohort 1 beneficiaries in the PCMH and non-PCMH comparison groups. This result agrees with those obtained from the full sample of beneficiaries.

- Unlike the corresponding estimate based on the full sample of beneficiaries, cohort 1 beneficiaries assigned to MiPCT practices experienced a reduction in the rate of **30-day unplanned readmissions** relative to cohort 1 beneficiaries assigned to comparison PCMHs.

Table 9-7

Michigan: Average demonstration effect estimates during the first year of the MAPCP Demonstration for Medicare expenditures and utilization rates, comparing performance for Medicare beneficiaries first assigned in January–March 2012 to MiPCT practices vs. comparison PCMHs and non-PCMHs

Outcome	MiPCT vs. CG PCMH		MiPCT vs. CG non-PCMH	
	Average effect	Standard error	Average effect	Standard error
Total expenditures (\$)	-40.14	(44.75)	-27.06*	(14.61)
Acute care expenditures (\$)	-22.2	(20.95)	-10.09	(7.72)
ER expenditures (\$)	-1.07	(1.35)	-0.54	(0.56)
All-cause hospitalizations (per 1,000 beneficiaries)	-4	(3.2)	-2	(1.5)
ER visits (per 1,000 beneficiaries)	-2	(4.3)	0	(4.9)
Unplanned readmissions (per 1,000 beneficiaries)	-28*	(15.5)	-6	(8.1)

NOTES: MAPCP = multi-payer advanced primary care practice; MiPCT = Michigan primary care transformation; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room.

The table contains the average demonstration effect estimates and standard errors for the first year of the MAPCP Demonstration, for Medicare expenditures and utilization rates. The average estimate is a weighted average of the four quarterly effects, where the weights are the numbers of demonstration-eligible beneficiaries in each quarter.

For Medicare expenditures, the demonstration effects can be interpreted as differences-in-differences.

* p<0.10

In sum, demonstration effect estimates based on cohort 1 beneficiaries and those based on the full sample of beneficiaries were mostly similar. One difference occurred for expenditures for short-stay, acute care hospitals: MiPCT demonstration seems to have affected the full sample of MiPCT beneficiaries but not cohort 1 MiPCT beneficiaries. This suggests that the demonstration was more successful in lowering the growth in these expenditures for beneficiaries assigned to participating practices during later demonstration quarters. Also, cohort 1 MiPCT beneficiaries experienced a reduction in the rate of unplanned readmissions relative to cohort 1 beneficiaries assigned to comparison PCMHs, whereas this result was absent in the full sample of beneficiaries.

Summary of evaluation findings. Our analyses of Medicare expenditures and utilization rates during the first year of the MAPCP Demonstration provide some preliminary evidence about the effectiveness of the MiPCT project for Medicare FFS beneficiaries in Michigan. The evidence can be summarized as follows.

- There is some evidence that the MiPCT project was associated with reduced growth in total Medicare expenditures between the baseline and the first year of the MAPCP Demonstration, but this was observed only relative to comparison non-PCMHs. Beneficiaries assigned to MiPCT practices and comparison PCMHs experienced a similar rate of growth in total expenditures.
- There is some evidence that the MiPCT project reduced the growth in expenditures to short-stay, acute-care hospitals but, again, this was observed only relative to comparison non-PCMHs. Analysis of cohort 1 beneficiaries suggests that this result is partly driven by beneficiaries who became eligible for the MAPCP Demonstration later in the demonstration period.
- There is no evidence that the MiPCT project reduced the rates of all-cause, acute-care hospitalizations and ER visits.
- There is some evidence that the MiPCT reduced the rate of 30-day unplanned readmissions during the first year of the MAPCP Demonstration. However, an effect was only observed for the first cohort of MiPCT beneficiaries and not for the full sample.

9.6.3 Medicare Budget Neutrality in Year 1 of MiPCT

In this section, we present estimates of budget neutrality in the first year of the MAPCP Demonstration using the methodology described in *Section 1.2.3*. *Table 9-8* reports the estimated gross and net savings for Michigan during that year, relative to the PCMH comparison group. Results are presented separately by the four quarters and then summed to produce annual estimates of savings and fees as a whole.

Table 9-8
Estimates of gross savings, fees paid, & net savings, Year 1 of the MAPCP Demonstration, Michigan

Budget Neutrality Parameter	MAPCP Demonstration Quarter (Year 1)				Year 1 Total	90% Confidence Interval	
	Jan–Mar 2012	Apr–Jun 2012	Jul–Sep 2012	Oct–Dec 2012		Lower	Upper
Difference in quarterly expenditures per beneficiary	–\$73.34	–\$117.24	–\$94.99	\$20.94	–\$264.63	—	—
Eligible beneficiary quarters	176970	192752	190749	192364	752835	—	—
Total gross savings	\$12,978,980	\$22,598,244	\$18,119,248	–\$4,028,102	\$49,668,370	–\$44,715,553	\$144,053,546
Total MAPCP Demonstration fees	\$5,166,578	\$5,609,865	\$5,540,342	\$5,600,539	\$21,917,324	—	—
Net savings	\$7,812,402	\$16,988,379	\$12,578,906	–\$9,628,641	\$27,751,046	—	—
Average expenditures (comparison group)	\$2,456	\$2,700	\$2,659	\$2,550	\$10,365	—	—
Total expenditures (comparison group)	\$434,638,320	\$520,430,400	\$507,201,591	\$490,528,200	\$1,952,798,511	—	—

NOTES:

*p<.10; **p<.05; ***p<.01

Difference in quarterly expenditures per beneficiary: Estimated difference in average Medicare Part A and B expenditures between beneficiaries assigned to MiPCT practices and those assigned to PCMHs in the comparison group, excluding beneficiaries with less than 3 months of demonstration eligibility.

Eligible beneficiary quarters: Sum of participating beneficiaries' fractions of quarters eligible to participate in the MAPCP Demonstration, excluding beneficiaries with less than 3 months of eligibility.

Total gross savings: Combined savings effect per beneficiary times the number of eligible beneficiary quarters. Savings are the negative of the expenditure difference. Positive savings indicates that the intervention group's expenditures increased less than the comparison group's expenditures. Negative savings indicate that the intervention group's expenditures increased more than the PCMH comparison group's expenditures.

Total MAPCP Demonstration fees: Sum of MAPCP Demonstration fees, excluding fees paid on behalf of beneficiaries with less than 3 months of eligibility.

Net savings: Gross savings minus total MAPCP Demonstration fees.

Average expenditures (PCMH comparison group): Medicare expenditures per beneficiary in the comparison group.

Total expenditures (PCMH comparison group): Average expenditures per beneficiary times the number of MiPCT beneficiaries' eligible quarters.

SOURCE: Medicare Part A and B claims January 1, 2006–December 31, 2012

Total gross savings to Medicare were \$49,668,370. The quarterly estimates indicate that these savings were generated during the first three quarters of the MAPCP Demonstration and partially offset by increased expenditures during the fourth quarter. First year savings were estimated imprecisely as reflected by the 90% confidence interval ranging from -\$44.7 million to +\$144.1 million.

Total fees paid out based on eligible quarters were \$21,917,324. Medicare's net savings for Michigan during the first year were estimated to be \$27,751,046, or \$147.45 per full-year eligible beneficiary. Although Michigan's MiPCT intervention is showing nearly \$50 million in gross Medicare savings in the first year, they have yet to achieve statistical significance. Incorporating cost performance during the second and third years of the MAPCP Demonstration will increase precision of the estimates and will help determine whether the intervention can yield net savings in the longer term.

9.7 Special Populations

9.7.1 Targeting of Special Populations and Tailored Interventions During Year 1

MiPCT does not target any particular special population for special interventions or services. However, MiPCT's focus on care management is particularly beneficial to certain subpopulations, including people at high risk for readmission and people with multiple chronic conditions. These patients are identified by care managers using electronic patient registry data, risk-stratification data from the Michigan Data Collaborative, and the care manager's own clinical judgment.

Care management is particularly focused on patients in care transitions and patients at high risk of hospital readmission because of the potential for cost savings. Because there is overlap between those in care transitions, patients at risk for readmission, and patients with multiple chronic conditions, these high risk groups are likely to receive high levels of care management services and support, and therefore may derive more benefit than the average patient in the project. Patients with multiple chronic conditions are targeted by the moderate care managers for care coordination activities and self-management support.

Respondents believed the most disadvantaged populations had the most to gain from MiPCT's patient-centered focus. As a result, there was not a need for special interventions for dual eligible or Medicaid beneficiaries. Similarly, despite Michigan's racial and ethnic diversity, most people interviewed did not feel the need for initiatives targeting minority populations (such as blacks or Hispanics), and this is not a feature of MiPCT.

9.7.2 Impacts on Special Populations

Quantitative data assessing the impacts of MiPCT on special populations are not yet available. In future reports, we plan to report our findings on the impacts of the demonstration on special populations as defined by each state initiative or special populations of policy interest.

9.8 Discussion

MiPCT is the largest of the eight state PCMH initiatives that Medicare joined in terms of number of participating practices and beneficiaries. Unlike other states' PCMH initiatives in which Medicare joined an existing program, Medicare joined MiPCT at program launch, although some aspects of the project were already in place. Michigan began the project with all participating practices already far along in the PCMH transformation process, which provided a strong base for implementing such a large program.

The project is heavily modeled on BCBSM's PGIP PCMH designation program. MiPCT chose to use BCBSM designation as its primary PCMH qualification because it was already widely implemented across the state, did not require a fee from practices to gain recognition, and it was in line with the definition of PCMH that came out of the Michigan Primary Care Consortium's work. This meant that all participating practices had already gone through the designation process, had demonstrated a high level of PCMH capability, and were used to submitting data and receiving incentive payments based on performance. But building on BCBSM's program also limited payer participation because other commercial insurers did not want to participate in what they saw as their competitor's signature program. This, in addition to difficulty for the commercial plans in getting self-insured customers to buy into MiPCT and pay for the additional services, resulted in fewer participants than expected.

Unique to MiPCT is the use of physician organizations as intermediaries between MiPCT and individual practices. Because the project is so large, MiPCT staff feels this role is essential to the success of the project. On the other hand, it also creates a bureaucratic layer between the state and the practices, and physician organizations vary in the level of support they are able to provide to practices. This creates difficulty in ensuring necessary information is being communicated to practices.

MiPCT's plans to achieve budget neutrality rest heavily on the expectation that care management services will lead to reductions in inpatient hospitalizations and readmissions by expanding open access for same-day appointments and access to a clinical decision-maker after hours and investing heavily in hiring complex care managers who focus primarily on high-risk individuals undergoing care transitions—especially from the hospital to the home setting. There is broad buy-in across state staff, payers, physician organizations, and practices that a model with a heavy emphasis on management of complex patients is a good approach. There is some evidence that total Medicare expenditures and payments to acute care hospitals are declining; however, there is no evidence yet that the transformative efforts occurring within MiPCT are having an impact on acute care utilization. A subset analysis did suggest that participating practices had more success in reducing the rate of growth in hospital payments among Medicare beneficiaries who were later entrants into MiPCT compared with performance of beneficiaries who joined the demonstration in the first quarter.

A major challenge to MiPCT was hiring and training the care managers. In the first year, MiPCT hired and trained 389 care managers. Most care managers had only recently been embedded in practices at the time of our site visit. The original model proposed for care management was to have separate individuals in the roles of moderate and complex care managers. Practices and physician organizations argued that in many cases, it made more sense

to have one person filling both roles, and a hybrid care manager role was created. The Geisinger model and curriculum used by MiPCT to train the complex care managers had the benefit of being an evidence-based model with demonstrated cost savings, but also brought challenges about intellectual property concerns and program fidelity. MiPCT was able to work through these challenges, but it slowed the process of embedding care managers in practices. A key question yet to be answered is how effectively care managers are being used.

The Michigan practices we visited often had been early adopters of health IT, but MiPCT facilitated (although it did not require) further updates to many practices' EHR systems to support care management activities and to meet the electronic disease registry requirements. Practices interviewed during the site visit reported that EHRs can be "clunky and counter-intuitive" to use, as they are not always designed to generate the data needed for MiPCT, particularly integration of care management data. EHRs were used almost entirely for purposes internal to the practices; they were not used to transmit data on patients to other providers.

Implementation of the Michigan Data Collaborative dashboards took longer than expected due to data and technical delays, and at the time of the site visit, physician organizations and practices had either not yet seen the dashboards or had just received them and did not have enough experience to comment if they were useful.

When asked about the adequacy of payments to the practices, most practices were concerned with covering their costs. Some were able to calculate that payments would cover their costs; however, many practices thought payments would not be adequate. State staff mentioned that a limitation of the funding model was that physician organizations all received similar payments, even though they provided different levels of service.

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CHAPTER 10 PENNSYLVANIA

In this chapter, we present qualitative and quantitative findings related to the implementation of the Chronic Care Initiative (CCI), Pennsylvania's regional preexisting multi-payer initiative, which added Medicare as a payer to implement the MAPCP Demonstration. We report qualitative findings from our first of three annual site visits to Pennsylvania, as well as quantitative findings using Medicare fee-for-service (FFS) claims data to report characteristics of beneficiaries and participating practices in the state initiative, descriptive statistics and estimates of the demonstration effects for Medicare payment and utilization outcomes, and estimates of budget neutrality.

For the first round of site visit interviews, which occurred from October 2 through October 4, 2012, three teams traveled to the state capital in Harrisburg, and the two regions participating in the CCI - the Northeast, centered around the Scranton area, and the Southeast, including Philadelphia and the surrounding suburbs. The focus of the site visits was on early implementation experiences and practice transformation activities that were necessary to join the MAPCP Demonstration. During the site visit, we interviewed providers, nurses, and administrators from participating patient-centered medical homes (PCMHs) and collaborating organizations to learn about the effects of the state policies on their practice transformation activities and the quality and effectiveness of the health care they delivered before and after Medicare's entrance. We met with key state officials involved with the implementation of CCI to learn how the payment model and other efforts to support practice transformation, such as learning collaboratives, were chosen and implemented and how specific performance goals were established. We also met with payers to hear their experiences with implementation and whether the payments to practices were effective in terms of producing desired outcomes or whether modifications are warranted. Last, we met with patient advocates and provider organizations to learn if they had observed an improved beneficiary experience with care and any changes to the way care is delivered.

This chapter is organized by major evaluation domains. *Section 10.1* reports state implementation activities, as well as baseline demographic and health status characteristics of Medicare beneficiaries and characteristics of practices participating in CCI. *Section 10.2* reports practice transformation activities. The subsequent sections of this chapter report our findings for the five evaluation domains related to outcomes: quality of care, patient safety, and health outcomes (*Section 10.3*); access to care and coordination of care (*Section 10.4*); beneficiary experience with care (*Section 10.5*); effectiveness as measured through health care utilization, Medicare expenditures, and budget neutrality (*Section 10.6*); and special populations (*Section 10.7*). We conclude this chapter with a discussion of early findings (*Section 10.8*).

10.1 State Implementation

In this section, we present findings related to the implementation of CCI and changes made by the state, practices, and payers when Medicare joined their ongoing multi-payer initiative. We focus on providing information related to a subset of the state implementation evaluation questions that lend themselves to being answered in the early part of the MAPCP Demonstration. Specifically, we address the following:

- What are the features of the state initiative?
- What changes did practices and payers make in order to take part in CCI and meet the participation requirements? What was involved in making these changes? What challenges did they face?
- What kinds of structural and organizational changes did the state, practices, and payers make to accommodate Medicare's participation in CCI and to better serve the needs of Medicare beneficiaries? How did administrative burdens and resource allocations change as a result of Medicare's participation?
- Does Medicare's participation in CCI have any spillover effects on the state's Medicaid program or private payers?
- What early lessons were learned?

The state profile in *Section 10.1.1* of this report draws on quarterly reports submitted to CMS by CCI project staff, monthly state/CMS calls, as well as other sources including news items and state and federal websites, and the site visit that was conducted in October 2012. *Section 10.1.2* presents a logic model that reflects our understanding of the link between specific elements of CCI and expected changes in outcomes. *Section 10.1.3* presents key findings gathered from the site visit and describes the implementation experience of state officials, payers, and providers. We conclude the State Implementation section with lessons learned in *Section 10.1.4*.

10.1.1 Pennsylvania State Profile as of October 2012 Evaluation Site Visit

Planning for Phase I of Pennsylvania's CCI began in 2006 in seven regions of the state, and CCI was formally established in 2007 by the state's Health Reform Commission through an executive order. Phase I of CCI began with the Southeastern Pennsylvania region in May 2008 and then rolled out to the remaining six regions. Phase I combined elements of Wagner's Chronic Care Model and the PCMH model. The seven regions participating in Phase I featured varying program models, with differences in requirements for practices to obtain National Committee for Quality Assurance Physician Practice Connection Patient-Centered Medical Home (NCQA PPC[®] PCMH[™]) recognition, payments to practices, and other features.

Phase II of CCI began on January 1, 2012, when Medicare joined as a payer in the Northeast and Southeast Pennsylvania regions. Under Phase II of CCI, the Northeast and Southeast regions adopted a single payment methodology and aligned requirements and learning collaborative activities for participating practices. CCI Phase II employs strategies to: (1) improve access to and coordination of care through the use of care managers embedded in participating practices; (2) increase quality of care and patient safety by improving adherence to evidence based guidelines, use of patient registries and medication management services, and tracking practice performance on quality metrics; and (3) improve experience with care by increasing patient participation in care decisions and improving patients' ability to self-manage their care.

State environment. The Governor's Office for Health Care Reform (GOHCR) and Phase I of CCI were established under the administration of previous Governor Ed Rendell (in office 2003–2011), a Democrat. With the inauguration of current Governor Tom Corbett, a Republican, in 2011, GOHCR was eliminated, and the initiative moved to the Department of Health (DOH). Phase II of CCI is now located within DOH's new Center for Practice Transformation and Innovation. DOH is advised by CCI's Executive Steering Committee, which includes payer and practice representatives from both participating regions.

Though stakeholders report that the Corbett administration's support for the initiative remains strong, the transition in state leadership and move to DOH caused some delays in program implementation and administrative difficulties. This resulted in the postponement of Medicare participation until January 2012. In the Southeast region, Phase I of CCI ended in spring 2011, resulting in a gap in official implementation prior to the beginning of Phase II in January 2012. All but one payer participating in Phase I agreed to continue making per member per month (PMPM) payments to participating practices during this gap as a show of good faith.

Under the Corbett administration, Phase II of CCI has embraced a voluntary approach to payer participation. Although technically voluntary under the previous administration, an executive order from the Rendell administration established strong pressure for payer participation in launching Phase I of CCI. In addition, Medicaid managed care organizations (MCOs) were required to participate as a condition of their contracts with the Pennsylvania Department of Public Welfare (DPW); this requirement was removed from renewal contracts at the start of Governor Corbett's term.

After the close of Phase I of CCI, a number of payers withdrew from the initiative or declined to join Phase II. Pennsylvania's initial MAPCP Demonstration application proposed that Medicare FFS join CCI as a payer in three regions (Northeast, Southeast, and South Central). The South Central region failed to meet demonstration requirements mandating the participation of a majority of the private insurance market after a dominant commercial payer in the region (Capital Blue Cross) withdrew from the demonstration in December 2011, resulting in CMS's decision to exclude the South Central region from the MAPCP Demonstration. In the Northeast region, Blue Cross of Northeastern Pennsylvania withdrew from the initiative at the end of 2012. In January 2013, Health Partners, a Medicaid MCO in the Southeast region, announced plans to withdraw in March 2013. In addition, UnitedHealthcare and Coventry Cares declined to join the initiative in early 2012 despite previous plans to do so.

State budget pressures have impacted Medicaid's participation in Phase II of CCI. DPW, which operates a Medicaid FFS program in the Northeast region only, initially announced in early 2012 that it would not join Phase II in that region, a move stakeholders agree was driven by budget pressures. DPW reversed this decision in September 2012 to meet the terms of the state's MAPCP Demonstration agreement with CMS, which requires Medicaid participation in each region. DPW plans to make payments to practices in the Northeast region for the January 2012–

February 2013 period, though as of December 31, 2012 it had not yet begun doing so.⁴⁶ The Northeast region will transition to capitated managed care in March 2013.

Pennsylvania has several relevant programs operating in the Northeast and Southeast regions and across the state that may affect health outcomes for Phase II participants and the comparison population:

- Geisinger Health System, a major insurer and delivery system in Northeast Pennsylvania, is participating in CCI as a payer and provider and is also participating in Medicare's Physician Group Practice (PGP) Transition Demonstration through 2012. Seven Geisinger-owned practices are participating in both CCI and the PGP Demonstration. These practices are not eligible to receive shared savings payments from two Medicare demonstrations. As a result, they will be eligible to receive shared savings payments from Medicare under the PGP Transition Demonstration, but not under the MAPCP Demonstration, if savings are demonstrated.
- Health Quality Partners has provided care management and disease management to Medicare FFS beneficiaries in Southeast Pennsylvania with chronic conditions through the Medicare Coordinated Care Demonstration since 2002 and continuing through 2013.
- Renaissance Health Network, an independent practice association in the Southeast region, was selected to participate in the Center for Medicare & Medicaid Innovation's (CMMI's) Pioneer Accountable Care Organization Model initiative in December 2011. As a result, these practices were not able to participate in Phase II of CCI as far as Medicare was concerned. The rest of the payers consider the association's practices to be in CCI.
- A number of payers participating in Phase II of CCI, including Blue Cross of Northeastern Pennsylvania and Geisinger, also operate single-payer programs to incentivize efficient and high quality care among their providers, including PCMH programs. The extent to which CCI practices are also participating in individual payers' PCMH programs is not known.
- Pennsylvania is receiving \$17 million in the Health Information Technology for Economic and Clinical Health (HITECH) funding to support the development of a statewide health information exchange (HIE). The state has also received funding for two Regional Extension Centers. In addition, the Keystone Beacon Community, which uses HITECH funding and is led by Geisinger Health System, is focused on improving care coordination through use of health information technology (health IT) in five Pennsylvania counties: Columbia, Montour, Northumberland, Snyder, and Union. Though the Keystone Beacon Community service area does not overlap with

⁴⁶ Since then, DPW successfully made retroactive PMPM payments for Medicaid FFS beneficiaries in the Northeast region for the January 2012-February 2013 period.

any regions participating in Phase II of CCI, Columbia, Montour, and Union are comparison group counties for the MAPCP Demonstration evaluation.

Demonstration scope. Phase II of CCI operates in the Northeast and Southeast Pennsylvania regions. The Northeast region is generally rural, with Geisinger as a dominant player in care delivery and insurance in the region. The Southeast region includes Philadelphia and much of the surrounding metropolitan area and features a larger number of Medicaid beneficiaries and a more crowded and competitive delivery system and insurance environment as well as a number of independent practices not associated with large umbrella organizations that may provide infrastructure support.

Table 10-1 shows participation by practices, providers, and individuals in Pennsylvania's CCI at the end of the first year of the MAPCP Demonstration (December 31, 2012). Excluding three federally qualified health centers (FQHCs) that do not bill Medicare, there were 57 practices and 385 participating providers, and the cumulative number of Medicare FFS beneficiaries that had participated in the demonstration for at least three months was 28,236.

Table 10-1
Number of practices, providers, and Medicare fee-for-service beneficiaries in the Pennsylvania Chronic Care Initiative (CCI)

Participating Entities	Number as of December 31, 2012
CCI practices ¹	57
Participating providers ¹	385
Medicare fee-for-service (FFS) beneficiaries ²	28,236

NOTE: Demonstration practices include only those practices with attributed Medicare FFS beneficiaries, and participating providers are the providers that are associated with those practices. The numbers of Medicare FFS beneficiaries are cumulative, representing the number of Medicare FFS beneficiaries that had ever participated in the demonstration for at least three months. CCI = Chronic Care Initiative.

SOURCES: ¹ARC MAPCP Demonstration Provider File; ²ARC Beneficiary Assignment File (SAS Output tab52c.xls 07/30/2014). (See chapter 1 for more detail about these files).

In terms of all-payer participants, the state reported that 198,733 individuals were enrolled in the demonstration at the end of year (December 31, 2012). The state anticipated that 298,962 Pennsylvanians would participate in the Northeast and Southeast regions. Blue Cross of Northeastern Pennsylvania's withdrawal from the initiative at the close of 2012 resulted in a drop in total participant numbers. Although the addition of Pennsylvania's DPW (Medicaid FFS) as a payer in the Northeast region should increase participation, no data have been provided on the number of participants and, as of October 2012, no payments had been made.⁴⁷

⁴⁷ Since then, DPW successfully made retroactive PMPM payments for Medicaid FFS beneficiaries in the Northeast region for the January 2012-February 2013 period.

As of December 31, 2012, nine payers were participating in Phase II of CCI: DPW (Medicaid FFS), Independence Blue Cross, Aetna, Aetna Better Health, Keystone Mercy Health Plan, Health Partners, Blue Cross of Northeastern Pennsylvania, Geisinger Health Plan, and Cigna. Several insurers participate on behalf of multiple lines of business, including commercial plans, Medicaid managed care plans, and Medicare Advantage.

Table 10-2 displays the characteristics of the practices participating in Pennsylvania's CCI as of December 31, 2012. There were 57 participating practices with an average of seven providers per practice. 89% of these practices were office-based; 11% were FQHCs, there were no critical access hospitals, or rural health clinics. All but two practices (3%) were located in metropolitan counties.

Table 10-2
Characteristics of practices participating in the Pennsylvania Chronic Care Initiative as of December 31, 2012

Characteristic	Statistic
Number of practices	57
Number of providers	385
Average number of providers per practice	7
Practice type (%)	
Office based	89
Federally qualified health center	11
Critical access hospital	0
Rural health clinic	0
Practice location type (%)	
Metropolitan	97
Micropolitan	3
Rural	0

SOURCES: ARC Q6 MAPCP Demonstration Provider File and SK&A office-based physician data file (See chapter 1 for more detail about these files).

In **Table 10-3**, we report demographic and health status characteristics of Medicare FFS beneficiaries who were assigned to participating CCI practices in Pennsylvania during the first 12 months of the MAPCP Demonstration (January 1, 2012 to December 31, 2012). Beneficiaries with less than three months of eligibility for the demonstration are not included in our evaluation or this analysis. Of the beneficiaries who were assigned to CCI practices during the first year of the demonstration, 44% were between the ages of 65 and 75, 21% were under the age of 65, and a little less than a quarter were between the ages of 76 and 85, with a mean beneficiary age of 70 years. Sixty percent of beneficiaries were female, 90% of participants were urban-dwelling, 22% were dually eligible for Medicare and Medicaid, and 29% of beneficiaries were originally eligible for Medicare due to disability. One percent of beneficiaries

had end-stage renal disease. Less than 1% resided in a nursing home during the year prior to their assignment to a CCI practice.

Table 10-3
Demographic and health status characteristics of Medicare fee-for-service beneficiaries participating in the Pennsylvania Chronic Care Initiative (CCI) from January 1, 2012, through December 31, 2012

Demographic and health status characteristics	Percentage or mean
Total beneficiaries	28,236
Demographic characteristics	
Age < 65 (%)	21
Ages 65–75 (%)	44
Ages 76–85 (%)	24
Age > 85 (%)	11
Mean age	70
White (%)	82
Urban place of residence (%)	90
Female (%)	60
Medicaid (%)	22
Disabled (%)	29
End-stage renal disease (%)	1
Institutionalized (%)	.8
Health status	
<i>Mean Hierarchical Condition Category (HCC) score groups</i>	1.06
Low risk (< 0.48) (%)	25
Medium risk (0.48–1.25) (%)	49
High risk (> 1.25) (%)	26
<i>Mean Charlson Index score</i>	0.89
Low Charlson Index score (= 0) (%)	61
Medium Charlson Index score (≤ 1) (%)	18
High Charlson Index score (> 1) (%)	21
Chronic conditions (%)	
Heart failure	4
Coronary artery disease	12
Other respiratory disease	9
Diabetes without complications	17
Diabetes with complications	5
Essential hypertension	32
Valve disorders	3
Cardiomyopathy	2

(continued)

Table 10-3 (continued)
Demographic and health status characteristics of Medicare fee-for-service beneficiaries participating in the Pennsylvania Chronic Care Initiative (CCI) from January 1, 2012, through December 31, 2012

Demographic and health status characteristics	Percentage or mean
Chronic conditions (%) (continued)	
Acute and chronic renal disease	7
Renal failure	3
Peripheral vascular disease	2
Lipid metabolism disorders	16
Cardiac dysrhythmias and conduction disorders	9
Dementias	1
Strokes	1
Chest pain	4
Urinary tract infection	4
Anemia	6
Malaise and fatigue (including chronic fatigue syndrome)	1
Dizziness, syncope, and convulsions	5
Disorders of joint	6
Hypothyroidism	5

NOTE: Percentages and means are weighted by the fraction of the year that a beneficiary met MAPCP Demonstration eligibility criteria. Demographic and health status characteristics are calculated using the Medicare Enrollment Data Base (EDB) and claims data for the one-year period prior to a Medicare beneficiary first being attributed to a PCMH after the start of the MAPCP Demonstration. Urban place of residence is defined as those beneficiaries living in Metropolitan or Micropolitan Statistical Areas defined by the Office of Management and Budget (OMB).

SOURCE: SAS Output tab52c.xls 07/30/2014.

We use three measures to assess beneficiaries' health status during the year prior to their assignment to a CCI practice—Hierarchical Condition Category (HCC) score, Charlson Comorbidity Index, and diagnosis of 22 chronic conditions. Beneficiaries participating in the CCI had a mean HCC score of 1.06, meaning that Medicare beneficiaries assigned to a CCI practice were predicted to be 6% sicker in the subsequent year than an average Medicare FFS beneficiary. Sixty-one percent of the beneficiaries had a low score (= 0) on the Charlson Comorbidity Index, indicating that these beneficiaries did not receive medical care for any of the 18 clinical conditions contained within the index in the year prior to entrance into the demonstration. Thirty-two percent were treated for hypertension, 17% were treated for (uncomplicated) diabetes, 16% were treated for lipid metabolism disorders, and 12% were treated for coronary artery disease.

Practice expectations. In Phase I of CCI, practices were required to achieve “NCQA 2008 plus” recognition; three of the optional NCQA PPC[®] PCMH[™] elements, covering areas

such as patient engagement and self-management, care coordination and management by non-physician staff, and the development and use of care plans, also were required. In the Southeast region, practices had to achieve NCQA PPC[®] PCMH[™] recognition by the end of the first year of Phase I and in the Northeast region practices had to achieve recognition by the third year of Phase I. Additionally, in the Southeast region the CCI payment model was tied to the NCQA PPC[®] PCMH[™] recognition level (i.e., practices achieving a higher level of PCMH recognition received a higher PMPM payment).

In order to participate in Phase II of CCI, practices are required to renew their NCQA PPC[®] PCMH[™] recognition when it expires (i.e., 3 years after awarded). Practices are undergoing NCQA PPC[®] PCMH[™] 2011 assessment on a rolling basis and must achieve “NCQA 2011 plus” recognition. By “NCQA 2011 plus” recognition, the state meant that practices had to pass stricter requirements related to pre-visit preparations, individualized care plans, population management, and other care management activities. The practices participating in Phase II have significant PCMH capacity. As of December 31, 2012, approximately 68%, or 39 of the 57 participating practices, have been recognized as Level 3 PCMHs. Of the remaining fifteen practices participating in Phase II, thirteen have Level 2 recognition, one has Level 1 recognition, and one practice has not yet renewed its NCQA PPC[®] PCMH[™] recognition.

Phase II of CCI implemented a “practice performance assessment framework” in July 2012 as an additional tool with which to evaluate practice transformation and quality. The state and private payers gather additional information about practice transformation annually through care management audits, a practice transformation self-assessment tool, monthly practice narratives which must be completed and submitted to the practice coach, and clinical data from practice registries managed by the Pennsylvania Academy of Family Physicians (PAFP). The framework measures practice performance across three areas: clinical performance improvement, transformation, and engagement. Within the clinical performance improvement domain, practices must demonstrate statistically significant improvement annually on half of both the process and outcome measures included in the program’s measure set. Practices must demonstrate transformation by completing a self-assessment, as well as passing site audits to assess care management systems. For example, all practices are required to use care managers to coordinate care for high-risk patients, and are audited annually for their progress in this area. Within the engagement domain, program leadership tracks practice participation in learning collaborative activities and practices’ fulfillment of data reporting requirements. The requirement that practices achieve NCQA PPC[®] PCMH[™] recognition also falls within the engagement domain. Practices that do not pass the state’s audit or assessment must develop a 30-day corrective plan of action and are reaudited or reassessed at the end of the 30-day period.

Support to practices. Participating practices receive two PMPM payments from participating payers that vary by initiative year and patient age (*Table 10-4*). Practices participating in Phase II of CCI in the Northeast and Southeast Pennsylvania regions receive

- PMPM payments for physician-coordinated care oversight services; and
- Coordinated care fees: PMPM payments to fund care coordinators that vary based on patient age.

Both payments are reduced over Phase II’s three-year contract period in return for the potential of earning a larger share of the savings. Participating practices received a total of \$2,005,683 in payments from Medicare for beneficiaries assigned to their practices during the first year of the demonstration in Pennsylvania (January 1, 2012–December 31, 2012).

Table 10-4
Per member per month payments to participating Pennsylvania Chronic Care Initiative practices

Service	Year 1	Year 2	Year 3
1. Physician-coordinated care oversight services	\$1.50	\$1.28	\$0.43
2. Coordinated care fees (<i>vary based on patient age</i>):			
Age ≤ 18	\$0.60	\$0.51	\$0.43
Age 19–64	\$1.50	\$1.28	\$1.08
Age 65–74	\$5.00	\$4.25	\$3.61
Age ≥ 75	\$7.00	\$5.95	\$5.06

Practices also may receive shared savings payments from participating payers if savings are achieved and quality metrics are met. Each participating payer separately groups practices, calculates savings annually, and distributes any shared savings for their members. Medicaid and commercial payers calculate savings by practice by comparing cost trends for members assigned to the practice to business cost trends. The methodology for calculating savings contains a number of adjustments and exclusions that are designed to protect practices and payers from variation in cost and quality resulting from different patient populations or chance, including risk adjustment, practice groupings, and, for some payers, exclusion of high-cost outliers. CMS uses a different approach for calculating savings; it calculates net savings by region using the same methodology for calculating budget neutrality (see *Section 10.6.3* for details); if savings are achieved, a minimum savings threshold must also be met in order for practices in that region to be eligible to receive a portion of the savings. If savings are achieved (and the minimum savings threshold is met, in the case of Medicare), the practice must also meet required quality metrics. The required quality metrics differ for adult and pediatric practices; however, both include three domains—prevention, management of chronic conditions, and clinical care management. Regardless of payer, the percentage of savings in which practices are eligible to share varies by year: Practices are eligible to share in a maximum of 40% of net savings in Year 1, 45% in Year 2, and 50% in Year 3. The first performance year ended December 31, 2012. Four participating payers – Blue Cross of Northeastern Pennsylvania and Geisinger in the Northeast, and Health Partners and Keystone First (formerly Keystone Mercy) in the Southeast – reported that some participating practices were paid shared savings. CMS reported in February 2014 that while practices in Southeast region did achieve some savings, the amount did not exceed the minimum savings threshold and no payments were made. CMS found no savings in the Northeast region.

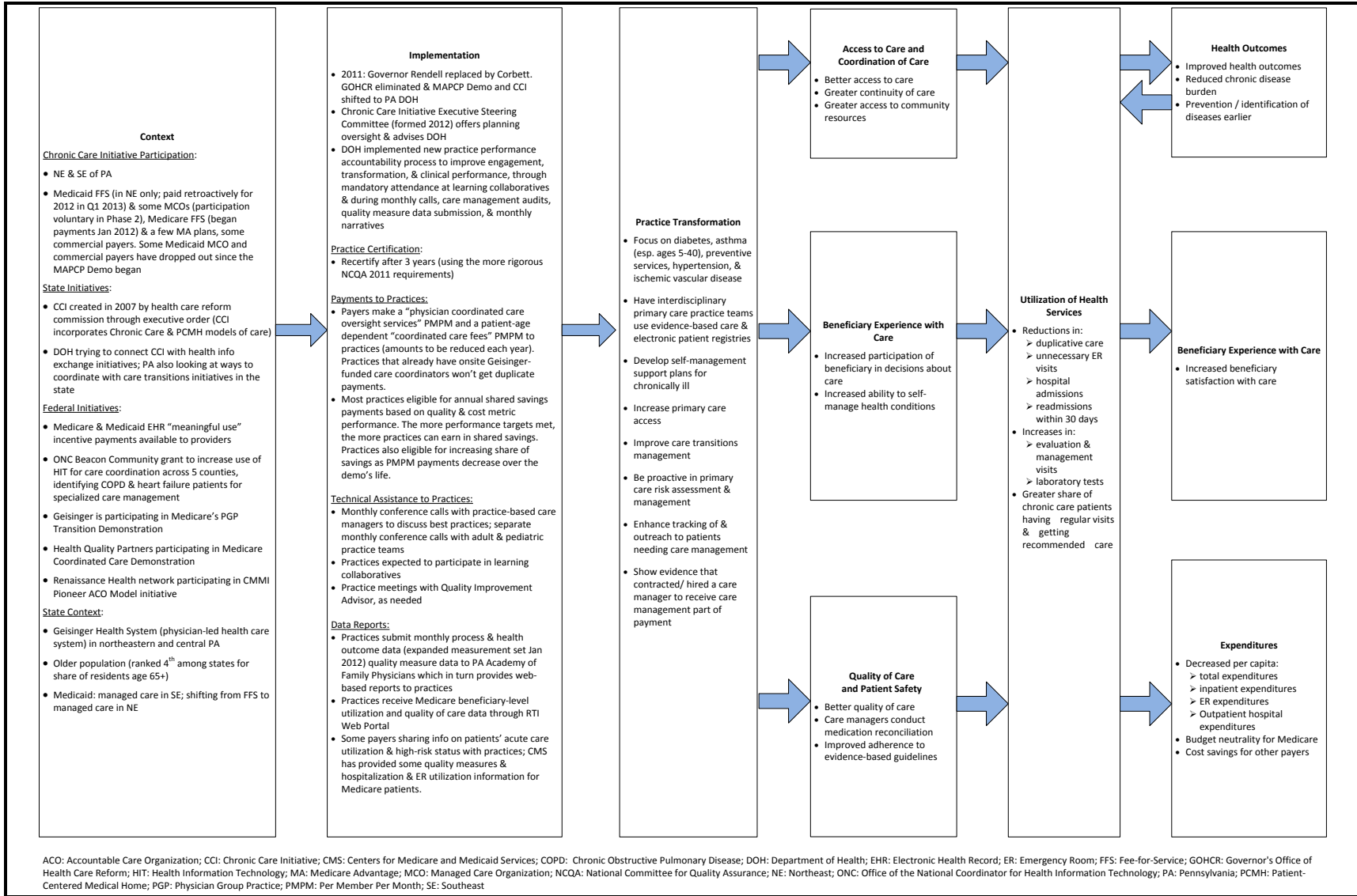
Phase II of CCI also supports practices through learning activities, including in-person learning collaborative sessions and monthly phone calls with a practice coach tailored for the

needs of adult practice teams, pediatric practice teams, and practice-based care managers. (See *Section 10.2.2* for details.)

10.1.2 Logic Model

Figure 10-1 portrays a logic model of Phase II of CCI. The first column describes the context for Phase II of CCI, including the scope, other state and federal initiatives, and the key features of participating in CCI Phase II. The next two columns describe the implementation of the initiative, which incorporates a number of activities to promote transformation of practices to PCMHs. Successful interventions should promote more efficient utilization patterns, including increased use of primary care services and reductions in avoidable inpatient admissions, readmissions within 30 days after discharge, and emergency room (ER) visits. These changes in utilization patterns are expected to produce improved health outcomes, greater beneficiary satisfaction with care, and decreased expenditures consistent with reductions in utilization, resulting in budget neutrality for the Medicare program and cost savings for other payers involved in the initiative.

**Figure 10-1
Logic Model for Pennsylvania Phase II of CCI**



10.1.3 Implementation

This section uses primary data gathered from the site visit to Pennsylvania in October 2012 and presents key findings from the implementation experience of state officials, payers, and providers to address the evaluation questions described in *Section 10.1*.

External Factors Affecting Implementation

A key external factor affecting implementation of Phase II of CCI was the change in the Governor's administration in 2011. The change to the Corbett administration, and related changes in the location and staffing of the program in state government, impacted the implementation of CCI in several areas.

First, the transfer of the CCI program from GOHCR to DOH toward the close of Phase I of CCI caused disruption and slowed implementation of Phase II. DOH had to hire and train the majority of its CCI staff, who then had to spend additional time familiarizing themselves with both phases of CCI.

Second, some believe Phase II of CCI is viewed as a lower priority for the current administration, reflected in CCI's move from GOHCR to DOH and DPW's earlier decision not to participate in Phase II of CCI, while others felt the administration was committed and firmly supportive of CCI. One payer felt the placement of CCI in DOH would actually provide a more stable home for the program, with less dependence on future changes in administration. Several non-Medicaid payers felt the Corbett administration's continued staffing of Phase II of CCI was evidence of his continued support: "If there was no support there would be no staff." Though most stakeholders interviewed during the site visit felt the new administration is supportive of PCMHs, several felt Governor Corbett placed a greater emphasis on spreading Medicaid managed care throughout the state. The Northeast region, for example, is transitioning to Medicaid managed care in March 2013.

The Corbett administration has also faced significant budget shortfalls in DPW, and, as a result, reversed the decision to include Medicaid FFS in Phase II of CCI in the Northeast region. Though DPW made payments retroactively to practices for the January 2012–February 2013 period, a number of stakeholders initially viewed this promise with some skepticism.

Evolution of Pilot Implementation with Medicare's Entrance

Structural and organizational changes needed to accommodate Medicare. CCI has undergone significant structural and organizational changes since its initial launch. Phase I of CCI was rolled out by region across the state with oversight provided by regional steering committees. The market areas of Blue Cross Blue Shield plans were used to define the seven different participating regions. Each region implemented unique practice transformation strategies, payment models, and care management emphasis.

State officials, payers and representatives of provider associations noted that the two regions that joined Phase II of CCI, the Southeast and Northeast, exhibited significant differences in population served, delivery system and insurance market environment, and approach to practice transformation during Phase I. The Southeast, the first and largest of the

regional models, serves a heavily urban population with a large number of Medicaid patients. During Phase I of CCI, enhanced payment to practices in the Southeast was made contingent on practices' achievement of NCQA PPC[®] PCMH[™] recognition in the first year, with higher payments tied to higher levels of recognition. Several payers and state officials felt this encouraged only "paper compliance" and did not encourage true practice transformation or changes in care delivery.

Compared to the Southeast, the Northeast region is more rural, with an older population and a commercial insurance market dominated by two major insurers, Geisinger and Blue Cross of Northeastern Pennsylvania. The major delivery systems in the region, in particular Geisinger, have a long history of innovative quality improvement initiatives. During Phase I of CCI, participating practices were eligible for enhanced payments contingent on hiring care managers and implementing a strong care management system. Though practices were also required to achieve NCQA PPC[®] PCMH[™] recognition, this was less of a focus in the Northeast region. The payment model also featured a shared savings component. Some key stakeholders felt these attributes of the Northeast model were the key to the region's success in the areas of clinical performance and practice transformation during Phase I.

Since the start of Phase II of CCI in January 2012, the two regions have used a uniform model drawing heavily on the model used in the Northeast region during Phase I. Given the significant differences between the regions, some stakeholders feel the model chosen is not a good fit for the Southeast and risks not achieving the same results as the Northeast. Early in Phase II of CCI, payers and state agency staff report practices in the Southeast lagged behind the Northeast in multiple areas, including reporting and performance on clinical quality measures.

In July 2012, concerns that practices were failing to transform despite receiving enhanced payment led to the implementation of the "practice performance assessment framework," a process that CCI program management is using to set annual targets for clinical quality and transformation measures, to assess practice performance on each measure, and to audit practice compliance with the terms of the CCI participation agreement. The framework created some tension between the two regions for both practices and payers. Some viewed the assessment process as unnecessarily burdensome, especially for practices in the Northeast: "The stress for knowing that [practice transformation was actually occurring] did not come from this region [the Northeast region]. That's all I'm going to say. The reinforcement that that assessment [the practice performance assessment] had to be done was not from us."

Attribution and enrollment before and after Medicare's entrance. Since the launch of Phase II of CCI, state officials, payers, and practices have reported some challenges with patient attribution. Stakeholders described the attribution model chosen for Phase II as a "standard approach." Patients are attributed to the participating practice they have visited most often in the previous 12 months. Several interviewees expressed concerns about this attribution methodology, citing the impact of delays in providing the attribution and reports listing high-risk patients to practices, particularly from some of the commercial plans. One payer felt that challenges related to patient attribution had decreased the impact of Phase II of CCI. Several plans that operate on a managed care model use assignment to a primary care physician, rather than a claims-based algorithm, as the basis for attributing beneficiaries to practices and making PMPM payments.

Changes in resource allocations and financing as a result of Medicare’s participation. During Phase I of CCI, participating regions tested a range of payment models, including lump sum payments to practices for start-up and infrastructure costs, PMPM payments, and shared savings arrangements. Phase II of CCI adopted a payment model aligned closely with the model used in the Northeast region during Phase I, including PMPM payments to practices for physician oversight and care coordination services and shared savings payments. This approach was a significant change for practices in the Southeast region, where PMPM payment amounts during Phase I were based on practices’ level of NCQA PPC[®] PCMH[™] recognition. Phase II’s shared savings model has received mixed support from payers and practices. (See *Section 10.2.3* for more details.)

Though payer enthusiasm was high early in CCI Phase I, the program struggled to maintain that enthusiasm. In the Southwest region, Highmark declined to continue to participate in CCI Phase I after the end of their initial participation agreement.⁴⁸ In the South Central region, the withdrawal of Capital Blue Cross just prior to the start of Phase II resulted in the exclusion of that region from CCI Phase II and the MAPCP Demonstration due to failure to meet CMS eligibility requirements.

Maintaining payer commitment has continued to be an ongoing challenge since the launch of CCI Phase II. Several plans chose not to participate in Phase II from the start or have discontinued their participation, including Coventry Cares and United Healthcare (both declined to join), Blue Cross of Northeastern Pennsylvania (withdrew December 2012), and Health Partners (withdrew in March 2013). One commercial payer reportedly only agreed to continue its participation as a result of political pressures from a Pennsylvania congressional member.

State officials and payers felt that commercial payers’ interest in maintaining control of their own business was the key reason for the withdrawals. Several stakeholders speculated that other factors, including financial difficulty and potential merger discussions, contributed to Blue Cross of Northeastern Pennsylvania’s departure from CCI. Some payers also expressed concern about the amount of work required to participate in Phase II of CCI, reporting that the effort necessary for the required data collection and analysis, reporting, and payment was too burdensome given that Phase II of CCI impacts a limited number of their practices and members.

Several payers also noted that the lack of a proven return on investment in CCI was an ongoing challenge for their continued participation. Some payers indicate they have not seen positive results from an outside, rigorous evaluation or a positive return on investment that can be conclusively tied to CCI’s impact. Though some payers report they have seen improvements in utilization, cost and quality, these changes are not as large as anticipated and, for some, they do not outweigh the costs of participating in CCI. Several payers, state officials and practices felt payments made to practices had varied impacts, ranging from galvanizing those already committed to practice transformation to having little to no impact on those practices less willing or able to make changes.

⁴⁸ The Southwest region was ineligible to apply to participate in the MAPCP Demonstration due to its participation in the CMS EHR Demonstration.

Despite these concerns, some payers express a willingness to wait longer for results and viewed CCI as a long-term investment toward stabilizing primary care and encouraging more medical residents to go into the profession. Two major payers in Pennsylvania, Geisinger in the Northeast region and Independence Blue Cross in the Southeast, are seen as champions of CCI and the PCMH model, and they have continued to voice their strong support.

Spillover effects on Medicaid and private payers as a result of Medicare’s participation. Stakeholders lack consensus on spillover effects on Medicaid and private payers as a result of Medicare’s participation. Several believed, despite some initial issues related to the administration’s transition, that bringing in Medicare provided some benefits and did not significantly slow or harm the project. One statewide provider association representative and several payers reported Medicare’s participation had raised the credibility of the initiative and created an increased sense of accountability to the public and to payers, both across the initiative and within practices. Several payers and other stakeholders expressed the firm belief Medicare’s participation was of such positive significance to the program that, without Medicare’s involvement, the initiative might have ended following Phase I, citing the initiative’s slowed momentum following the change in administration and move to DOH, as well as the decreased size and scale of the initiative over time.

Some stakeholders believe Medicare’s participation had minimal spillover effects on Medicaid, private payers, or the initiative itself. One stakeholder felt there had not been any major modifications to the initiative to accommodate Medicare; most of the changes that followed were “changes we thought needed to be changed based on experience, not because Medicare joined.” Several state officials and payers who were closely involved believe a system to address practice accountability similar to the practice performance assessment framework would have been put in place even without Medicare’s participation. One interviewee also stated Medicare had been a “free-rider, but now it is paying its share.”

A few others believe that preparation for Medicare’s participation may have slowed or harmed the initiative. Some stakeholders identified the lull that occurred between the end of Phase I of CCI in spring 2011 and the start of Phase II when Medicare joined in January 2012—rather than the change in administration, the initiative’s leadership transition to DOH, uncertainty around payer participation going forward, and other issues—as a factor that contributed to the loss of momentum and to several payers declining to rejoin the project for Phase II.

Impact of data systems in Phase II of CCI. Inadequate data systems have presented significant challenges to state officials, payers, and practices participating in Phase II of CCI. Accessing the needed data for practices and care managers to promote effective care management was a struggle for the state and payers before the initiative and has remained so. State officials noted that practices have been slow to report on all measures required to assess clinical performance improvement, and that some commercial payers and Medicaid MCOs have been slow in reporting utilization data to practices. Several interviewees reported that the data from some of the commercial payers and Medicaid MCOs was not timely enough for care management. Data on Medicare beneficiaries provided by RTI was more timely but occasionally contained what some perceived to be errors (e.g., beneficiary was deceased). Practices also found it challenging to identify high-risk patients using data in the format provided by some payers, making it difficult to better coordinate and manage care for those patients most likely to

be high utilizers of care, costly, and at risk for quality problems. Data on Medicare beneficiaries was described as useful for identifying high-risk patients but sometimes viewed as overwhelming because of the number of patients and the need to integrate the data with that provided by commercial and Medicaid MCO payers. One interviewee believed practices identified high-risk patients more quickly with practice-generated data than with data reports provided by payers.

Stakeholders identified the state's lack of HIE systems to exchange patient data as a significant roadblock to successful program implementation. Several stakeholders noted practices are particularly challenged in getting information from hospitals. Hospitals are currently not required to share data or participate in CCI and may need to be approached individually to obtain patient information. Several stakeholders felt the state and participating payers should press hospitals to provide information to participating practices instead of placing this burden on practices.

Impact of technical assistance to practices in Phase II of CCI. In Phase I of CCI, practices participated in quality improvement (or learning) collaboratives and received practice coaching or facilitation. The focus of these activities was on population management, management of patients with certain chronic conditions (asthma and diabetes), the use of electronic disease registries, and other care management strategies. There also was some focus on the PCMH model and NCQA PPC[®] PCMH[™] recognition process. Dr. Ed Wagner, the developer of the Chronic Care Model, led several of the initial collaboratives and PAFP worked with state staff to lead others. An independent consultant with a nursing background, who has worked closely with Dr. Wagner over the years, provided practice consultation.

In Phase II of CCI, both the learning collaboratives and practice coaching have continued, led by the independent consultant. There also is a different focus, with much more emphasis on the identification and management of high-risk patients and the role of the care managers. Additionally, there is ongoing discussion of the implementation of other strategies (e.g., how to better reach out to and work with hospitals) to strengthen the medical home and achieve the desired outcomes.

10.1.4 Lessons Learned

Pennsylvania's change in governor in 2011 resulted in a number of changes for CCI—a new location in state government, new staff, and a new, more voluntary approach to payer participation. These changes caused disruption and slowed implementation of Phase II of CCI.

Given the diverse interests of the state, private health plans, and providers, this multi-payer effort has been challenging to implement and maintain in Pennsylvania. Particularly since Governor Corbett took office, CCI has struggled to build consensus among stakeholders and retain payer support given the absence of strong, ongoing alignment of goals and interests. Budget issues at the state level resulted in delays in the state honoring its agreement to participate in Phase II of CCI as a payer through Medicaid FFS. Stakeholders reported that the absence of Medicaid FFS has created tension between the state, payers, and practices, with many payers and practices in the Northeast region feeling the state had failed to hold up its side of the bargain. Payers and practices consider this especially ironic following the addition of the

practice performance assessment framework by the state and the resulting increased workload for practices.

Applying the model developed in the Northeast region during Phase I of CCI to the Southeast region in Phase II has proven a challenge. Several interviewees referenced significant differences in the two regions' practice characteristics, delivery systems and provider organizations, patient populations, and medical home experience as factors contributing to the Southeast region's difficulties in meeting initial expectations for Phase II; as one stakeholder put it, "[During Phase I,] care management was emphasized in the Northeast and it was never emphasized in the Southeast. ... The Northeast... has a very strong base of care management that has seen better results." Stakeholders lacked consensus on whether the Phase II model would produce the same results in the Southeast region as it did in the Northeast during Phase I. Phase II of CCI has not created a sense of unity across the payers and practices in the two regions.

Stakeholders agree that without adequate resources and data systems, particularly functional electronic health records (EHRs) and communication with hospitals, care managers will continue to have difficulties in defining and supporting the population that could most benefit from a medical home.

Opinions on Phase II of CCI are hard to characterize on a statewide basis given the wide variations in experiences across the two regions and lack of consensus among stakeholders. Though some stakeholders point to the addition of Medicare and the renewed focus on practice accountability as evidence that CCI is stable once again, a larger group remains skeptical and believes that Phase II of CCI is on rocky footing.

10.2 Practice Transformation

This section seeks to answer evaluation research questions related to describing the features of the practices participating in Phase II of CCI, identifying the changes that practices make in order to take part in CCI and meet participation requirements, describing technical assistance to practices, summarizing early views on the payment model, and giving an account of experiences with the demonstration thus far. For this report, we have not conducted any quantitative analyses but have relied upon findings from our initial site visit and secondary data provided by the state to answer these research questions.

10.2.1 Changes Practices Made to Join the Demonstration

Practices are making a number of changes related to PCMH recognition, administrative issues, and health IT in order to participate in Phase II of CCI.

PCMH recognition. In Phase II of CCI, NCQA PPC[®] PCMH[™] recognition has been de-emphasized and there is greater emphasis on "accountability" at the practice level for transformation as well as quality and cost performance. The de-emphasis of the NCQA tool and emphasis on other means of holding practices accountable for transformation and ultimately their performance (quality and cost) reportedly resulted from Pennsylvania policy makers and payers' experiences in Phase I of CCI. Specifically, there was fairly broad criticism of the NCQA-based requirements used in the Southeast region for its emphasis on infrastructure development and written policies and procedures rather than real change in care delivery processes and improved

performance. While some practices reportedly made substantial changes in their care delivery processes and improved outcomes for asthmatic and diabetic patients, other practices were viewed as meeting the letter, but not the spirit, of recognition, and in a few cases simply “taking the additional money and running.”

Most respondents we interviewed were happy that, as Phase II of CCI got underway, the NCQA PPC[®] PCMH[™] criteria became less important. While the practices must reapply for and achieve NCQA recognition when their current recognition expires, there is no direct or explicit incentive for practices to move to higher levels of recognition. Practices and practice staff we interviewed did not mention achieving a higher level of NCQA recognition as a goal.

However, some plan and practice respondents had concerns about the new approach (“show or prove to me”) to encouraging practice transformation and holding practices accountable for their quality and cost performance. For example, some plan and practice respondents felt that the new mechanisms for assessing practice transformation (i.e., care management audits, a practice transformation self-assessment tool, and monthly practice narratives) might be too burdensome for practices and could stifle innovation.

Administrative changes. Some practices are trying to improve physician leadership, either by designating new individuals as leaders or providing some leadership training to current physician leaders and other staff. Many believe that creating and sustaining more significant practice change requires strong clinical and administrative leadership, but not all practices are fortunate to have born leaders. Consequently, some practices (or the systems with which they are affiliated) are attempting to “make them.”

Prior to Phase II of CCI, most practices in the Northeast had care managers embedded in them. In contrast, practices in the Southeast typically did not have embedded care managers, although some care management support from Medicaid managed care plans was available by telephone if requested. In Phase II, practices in both regions are required to use care coordinators. Most practices are using more care manager time (i.e., higher total full-time equivalents), either hiring new staff or using existing care managers more often. Some practices are also hiring additional medical assistants to assist care managers. Finally, some practices occasionally hire new social worker or behavioral health specialist staff or use existing staff for more time.

The number and type of newly hired staff, or the amount of additional staff time for care management, depends on the size of the practice. If the practice is part of a larger group or organized delivery system, staff might be shared by several practices. As discussed in **Section 10.1** and **Section 10.2.3**, some are concerned that the current payment model is not sufficient to support enough care managers given the number of high risk patients, particularly in the second and third years of Phase II when PMPM payment levels decrease.

Some practices also reported redesigning staff roles, responsibilities, and clinical care processes. Many of these practices are emphasizing the need for better teamwork and the idea that all clinicians must work to the top of their license. However, this sometimes means significant changes to individuals’ current roles and responsibilities, which may require

additional training and effort. Some work flow or clinical care process redesigns are also reportedly being worked on.

Practices that are owned by or part of larger systems are looking for additional non-financial supports from the larger system, including additional care management or care transition staff, pharmacy resources, diabetic or health educators, and behavioral health specialists. For example, several practices affiliated with one organized delivery system get additional support via medical home nurses that function as care managers for the most complex patients. They also work closely with the system's hospital discharge planning nurses.

Almost all of the primary care practices we spoke to were trying to work with their local hospitals to establish relationships for purposes of sharing information about patients who are in the ER or who have been admitted and will be discharged. Practices reported that establishing these hospital relationships can be time consuming, particularly if the hospital is not part of the system with which they are employed or affiliated. They also felt that most hospitals have no strong incentive to cooperate with them, with the possible exception of recent changes to hospital payment policy related to readmissions. Practice respondents wanted payers—commercial and Medicaid managed care plans in particular—to press the hospitals with which they contract to work with the PCMHs and share information about ER utilization and admissions, provide clinical care or discharge summaries, and work collaboratively on care transitions.

Health information technology. In Phase I of CCI, practices were required to use an electronic disease registry for the patient populations targeted (adults with diabetes and children with asthma). If they did not already have one, the state made disease registry software available to practices free of charge and also provided a one time, lump sum payment to get patient data entered into the registry. Although practices were not required to have an EHR, many already did. Since the NCQA 2008 tool placed a heavy emphasis on EHR and health IT capability, practices had to improve in this area to achieve higher levels of medical home recognition.

During Phase II of CCI, some practices reported working to use their EHRs and disease registries more effectively, for example, by creating templates for target patient populations to support more consistent delivery of evidenced-based care. Practices are also working to get more meaningful reports out of their EHRs on their patients and performance. Some are also using EHRs to exchange information with hospitals, particularly if they are part of a larger organized delivery system and have the same EHR. Although Pennsylvania is very actively engaged in a number of HITECH areas, such as the Medicaid EHR Incentive Program and HIE and Beacon Community grants, these programs were not explicitly mentioned as helping practices upgrade their EHR capacity and exchange data.

Overall, there was a difference in perspective about whether small or larger practices were better able to successfully transform into a medical home and achieve the intentions of the PCMH model. On one hand, small practices may be relatively easier to change in the short run and be more capable of achieving some of the aims of the PCMH model, such as a whole person orientation, continuity of care, and care coordination. On the other hand, large practices may be harder to change quickly but have advantages over time, such as the ability to develop multi-disciplinary teams where providers work at the tops of their license and to better coordinate and manage care.

10.2.2 Technical Assistance

As previously noted, as part of Phase II of CCI, practices are required to engage in several types of technical assistance activities, including learning collaboratives and practice coaching. Overall, practices we spoke with reported finding the current collaboratives and coaching useful. (For more details on the learning collaboratives and coaching see **Section 10.1.3.2.**) However, learning collaboratives can be time consuming. Additionally, a minority of the practices we spoke to did not agree with the focus on the management of high-risk patients, noting that some patients are too high risk to see improvements and that there are additional ways to achieve desired results (e.g., having more care provided by primary care physicians than by specialists). Additionally, while the independent consultant still provides practice coaching, some respondents reported that it is less frequent and largely done by telephone. Some felt that the lack of face-to-face time in the practice made the consultant's service less valuable.

Some participating practices are part of larger systems that provide a form of coaching or facilitation to their own practices. As noted, some are working on areas such as physician leadership training, care coordinator and other practice staff training, team building, identifying high risk patients, and managing care transitions.

10.2.3 Payment Supports

Practices are generally using additional PMPM payments to participate in required activities (e.g., NCQA recertification, attending learning collaboratives, and practice audits), support care managers, and make other changes to transform the practice in an attempt to improve quality and reduce cost. There were notable provider and plan concerns about Phase II's payment model.

First, some are concerned that the PMPM payments and the potential shared savings payments may not be adequate to support care management for all high-risk patients that need it and other practice investments and strategies required to succeed. Practices may make investments, but not see any or enough shared savings payments to cover those investments. Second, the methodology for calculating shared savings payments (e.g., how quality improvement targets are set, how intervention practices are grouped into clusters or regions for the shared savings calculations, how comparison practices are selected, what risk-adjustment methods are used,) may inappropriately reward or punish individual practices and blunt the shared savings payment incentives. For example, it may be extremely difficult for practices that are already performing well relative to state or national benchmarks to achieve even modest improvements, and hence achieve quality improvement targets and qualify for the shared savings payment. In contrast, practices that are performing poorly have more room for improvement, and hence are more likely to be able to "pick the low lying fruit," meet quality improve targets, and qualify for the shared saving payment. Additionally, grouping or pooling individual practices with others in the area or region for the purposes of the shared savings calculation may blunt practices motivation, because whether they receive shared payments or not depends on the action of other practices in their area over whose behavior they have no control. Finally, some plan and provider respondents noted that, because shared savings are calculated after the end of the year, practices do not know how likely it is that they will receive shared savings payments.

Practices and staff find this payment lag and uncertainty difficult because they are making investments in practice transformation and are unsure whether they will be recouped.

There was not a strong consensus on the potential effectiveness of Phase II's shared savings component. A wide range of views were expressed about the right balance between shared savings, front-end grants, and PMPM payments. Consistent with the shared savings model, some emphasized the need for accountability and rewarding high performing practices, not just putting out dollars without getting improved performance. One respondent, who said he is an outlier, does not like shared savings and prefers payment methodologies that emphasize process improvement. Still others want more front-end investment to support practice transformation.

Finally, many respondents were anxious to see whether there would be shared savings in Phase II, and were concerned about how payers and practices would respond if there were not. The shared savings model was completely new to the Southeast region in Phase II, and although the shared saving model had previously been used in the Northeast region, some changes were made to the model and Medicare was now a participant. If there were little or no shared savings, there was concern that payer and practice morale would decline, momentum would slow or be lost, and some would re-evaluate whether to continue to participate.

10.2.4 Summary

In Phase I of CCI, some practices focused on meaningful practice transformation, as well as receiving NCQA PPC[®] PCMH[™] recognition. Others made less meaningful changes, focusing more on achieving paper compliance with NCQA PCMH requirements. Since Phase II of CCI began, NCQA PPC[®] PCMH[™] recognition has been de-emphasized, keeping it a requirement for participation but not tying the payment model to it. The prospect of receiving shared savings payments seems to be encouraging practices to make more meaningful changes. Additional mechanisms developed by the state and payers (annual care management audits, practice transformation assessment, required submission of practice narratives) have been put in place in an effort to ensure that meaningful practices changes are occurring. However, a few interviewees felt that the "show or prove to me" approach to practice transformation may be too burdensome, may stifle innovation, and result in burnout.

Overall, respondents' comments highlighted three major areas where the PCMH concept and related practice transformation activities may help improve quality of care and reduce cost: 1) reorientation of practices to population health, supported by the introduction of the chronic care model and disease registries; 2) chronic care management via care managers, particularly in the Northeast, although this is an ongoing challenge; and, 3) more proactive care, which is receiving greater attention given the new focus on managing high risk patients. While the three areas were started in Phase I of CCI, they are being continued and strengthened in Phase II.

Some payers and practices we interviewed believe that small practices were more adept than large practices at being PCMHs. While large practices have advantages in achieving NCQA PPC[®] PCMH[™] recognition because of the emphasis on EHR and related infrastructure and the data management demands, small practices may be more successful at achieving the intentions of the PCMH model. On the other hand, practices that are part of organized delivery

systems may be more nimble in being able to hire additional staff, they may have an easier time collaborating with hospital staff on care transitions, and they may be able to work with plan staff to identify high risk patients.

Finally, practice transformation is hard work. Some practices reported increased job satisfaction prior to and during the early stages of Phase II of CCI, in part due to team care, clinicians working more at the top of their licenses, and, for some practices, enhanced payment. However, others reported dissatisfaction and burnout. Nonetheless, respondents reported there has not been much turnover in care managers and other practice staff. Some believe job descriptions and salaries have not kept pace with new demands and turnover may increase if practice staff salaries are not increased commensurate with new roles and responsibilities.

Uncertainty around shared savings in Phase II is stressful. Some state officials, payers, and practices are concerned that if some practices do not receive shared savings payments, it will not only have a negative financial impact on the practices, which makes it more difficult for them to continue to invest in practice infrastructure required for transformation, but physician and practice staff morale will suffer significantly.

10.3 Quality of Care, Patient Safety, and Health Outcomes

10.3.1 Implementation of State Initiative and Practice Features Expected to Improve Quality of Care, Patient Safety, and Health Outcomes During Year 1

Phase II of CCI includes several features designed to improve the quality of care that patients receive. As described in *Section 10.2*, practices are required to have an electronic disease registry or EHR system, which allows practices to track patients with certain conditions such as diabetes. Practices are encouraged to use their patient registries as a tool for conducting population-based tracking and analysis. Several practices noted that Phase II of CCI has taught them how to develop population management capabilities. Some practices reported that their care managers and primary care physicians are focused on tracking hospitalizations and ER visits, along with other information available through their patient registries, to identify high-risk patients in need of care management services. To help with this effort, some payers and hospitals are providing practices with lists of patients who are hospitalized or visit the ER—either through their IT system or by fax.

The state is also tracking a range of quality measures. PAFP has been responsible for management of the quality measures data set on behalf of the state in both phases of CCI. In Phase I, a smaller set of measures associated with diabetic and asthma care was collected. In Phase II, practices submit data related to the state's 24 performance measures on a monthly basis. The performance measures, aggregated across payers, are available to practices on a website. The amount of any shared savings payments are determined in part by practices' performance on quality measures (including some of the PAFP measures) relative to past performance and national NCQA Health Effectiveness Data and Information Set benchmarks.

In addition to targeting quality improvements, Phase II of CCI addresses making the delivery of health care services safer. Specifically, Phase II encourages practices to provide medication management services as a part of their care management approach. Some practices reported that they are conducting medication reconciliation with their patients. Care managers in

these practices tend to reconcile patients' medication during a regularly scheduled office visit or as a follow-up to a hospital discharge or ER visit.

In Phase II some practices also reported working to more effectively use their EHRs and disease registries, such as creating templates for target populations to more consistently deliver guideline-based care and improve on targeted quality of care measures.

10.3.2 Impacts on Quality of Care, Patient Safety, and Health Outcomes

Quantitative data assessing the impacts of the CCI on quality of care, patient safety, or health outcomes on Medicare beneficiaries are not yet available. Future annual analyses and reports will attempt to assess the impact on these outcomes. Beginning with the second annual report, we will include descriptive and, where appropriate, multivariate analyses of process of care quality indicators, EHR Meaningful Use rates, prevention quality indicators, as well as outcomes on mortality, and incidences of serious medical events, using Medicare data. We will also provide results on self-reported health status based on the PCMH- Consumer Assessment of Healthcare Providers and Services (CAHPS) survey.

10.4 Access to Care and Coordination of Care

10.4.1 Implementation of State Initiative and Practice Features Expected to Improve Access to Care and Coordination of Care During Year 1

CCI has required that practices make a number of changes related to enhancing care coordination, particularly the Phase II requirement to have an on-site care manager. According to the Participation Agreement for Phase II of CCI, care manager responsibilities include, but are not limited to, engaging in case review and planning, providing intensive medical and medication management services, identifying high risk patients through risk stratification, developing and implementing care plans, and managing and tracking tests, referrals and outcomes. The state holds monthly care coordination calls for care managers.

One payer noted that care management has been the most significant component of practice change in Phase II of CCI. Several practices said Phase II has taught them how to empower non-physician staff as part of a care management team. One primary care physician noted that non-physician staff in his practice used to be “ferry-boats” that would bring patients from the waiting room to the exam room and take their blood pressure, and that now non-physician staff has more responsibilities.

Several practices identified care transitions from the hospital to the community or other facilities as a major focus of their care managers. Some practices said that patients are usually seen within four days of discharge from the hospital. Some payers and hospitals are providing practices with lists of patients who are hospitalized or visit the ER—either through their IT system or by fax. Some practices said that care managers and primary care physicians are using this information, along with information provided through their disease registries and EHRs, to identify patients who should receive care management services.

Beyond requiring practices to obtain NCQA recognition, which includes a set of requirements around open access, access to care is not a direct or major focus of either phase of

CCI. However, particularly in Phase II, some practices report focusing more on proactively reaching out to patients, particularly to manage patients at risk of ER visits and hospital or nursing home admission.

Likewise, CCI has not focused as much on improving practice linkages to their communities and to community-based supports and organizations, though the Participation Agreement for Phase II of CCI does specify that one of the care managers' responsibilities is to identify available community resources. So far, practices generally have not made many explicit linkages to community-based supports and organizations, although some practices located in smaller communities are knowledgeable about local community resources and have had success in reaching out to them.

10.4.2 Impacts on Access to Care and Coordination of Care

Quantitative data assessing the impacts of the CCI on access to care and coordination of care on Medicare beneficiaries are not yet available. Future annual analyses and reports will attempt to assess the impact on these outcomes. Beginning with the second annual report, we will include descriptive and multivariate analyses of several indicators of access to care and coordination of care. Claims-based indicators will include primary care physician and specialist visit rates; ratio of primary care visits to total ambulatory care visits; percentage of discharges from the hospital for a medical admission with a follow-up visit within 14 days; rate of unplanned readmissions within 30 days after discharge; the percentage of ER visits that do not lead to a hospitalization; and a continuity of care index, which measures the concentration of visits among providers in the practice that is the beneficiary's usual source of care or to whom the beneficiary was referred by a provider in that practice. In addition, we will analyze a measure of care coordination based on responses to the PCMH-CAHPS survey.

10.5 Beneficiary Experience with Care

10.5.1 Implementation of State Initiative and Practice Features Expected to Improve Beneficiary Experience with Care During Year 1

Practices vary in the extent to which they are informing patients about CCI and engaging them in the PCMH model. Some practices have communicated information to their patients about CCI and their transformation activities, for example, through a newsletter. Several payers—including Medicare—said that they have not communicated to their members that they are participating in CCI. One payer said that they were “ambivalent about how much [CCI] should be a member directed activity versus a provider directed activity.”

Some practices reported that, as part of the changes they are making under Phase II of CCI, they are reaching out to patients more than they did in the past in delivering care. For example, one practice said that they are using patient agendas, where patients come into the office with a list of issues they want to cover during their office visit (e.g., medication reconciliation). In another example, a practice said that they generate medication lists for every patient that comes into the office, to confirm the list's accuracy. The practice is working on identifying illiterate patients as well as those who do not understand their medication regimen.

10.5.2 Impacts on Beneficiary Experience with Care

Quantitative data assessing the impacts of the CCI on beneficiary experience with care are not yet available. In the second annual report, we plan to report our findings from the PCMH-CAHPS survey administered to Medicare beneficiaries.

10.6 Effectiveness (Utilization & Expenditures)

10.6.1 Implementation of State Initiative and Practice Features Expected to Affect Patterns of Utilization and Expenditures During Year 1

According to its MAPCP Demonstration application, Pennsylvania expects to see a 10% reduction in inpatient costs and a 15% reduction in ER visits. State officials also expect that Phase II of CCI will result in a 20% increase in evaluation and management visits, and a 54%–59% increase in the user rate for laboratory tests. State officials expect that the following features of Phase II of CCI will contribute to reductions in inpatient and ER utilization:

- development of self-management support plans for patients with chronic conditions
- enhanced access to primary care
- better management of transitions in care
- more aggressive tracking of and outreach to patients in need of medical management
- care management for high-risk patients

Practices are reportedly engaging in many these activities but not to the same degree. Practices tend to be less focused on improving access to care and patient self-management, as noted in *Sections 10.4.1* and *10.5.1*. However, they are using care managers to identify, reach out to, and manage care for high-risk patients. As noted in *Section 10.4.1*, several practices identified care transitions from the hospital to the community or other facilities as a major focus of their care managers, and almost all practices we spoke with were in the process of working with their local hospitals to establish relationships for the purpose of facilitating information sharing about patients who visit the ER or are admitted or discharged from the hospital.

10.6.2 Year 1 Findings on Effectiveness

In this section, we present descriptive statistics and estimates of the demonstration effects from the quarterly fixed effects regression models (*Section 1.2.3, Equation 1.1*) for three Medicare expenditure outcomes (total expenditures, expenditures for short-stay, acute care hospitals, and expenditures for ER visits) and three utilization outcomes (all-cause, acute care hospitalizations, ER visits, and 30-day unplanned readmissions). The results are based on 28 quarters of data.

- Baseline period: January 2006–January 2008 (9 quarters). This is the period prior to the start of the CCI in Pennsylvania.

- Pilot period: April 2008–December 2011 (15 quarters). This is the period after the start of the CCI but prior to Medicare joining this initiative.
- Demonstration period: January–December 2012 (4 quarters). This is the first year after Medicare joined the CCI in Pennsylvania. All practices participating in the MAPCP Demonstration also participated in the CCI.

The descriptive statistics reported here are weighted averages of the Medicare expenditure outcomes and utilization rates from 2006 through the first year of the MAPCP Demonstration. The averages are calculated separately for (1) beneficiaries assigned to CCI practices, (2) beneficiaries assigned to PCMHs in the comparison group, and (3) beneficiaries assigned to non-PCMHs in the comparison group. The weights adjust the averages for differences in demonstration-eligibility and for observable differences in beneficiary-, practice, and geographic-level characteristics.

The regression models (see *Section 1.2.3*) were estimated separately using two distinct comparison groups: (1) beneficiaries assigned to PCMHs in the comparison group, and (2) beneficiaries assigned to non-PCMHs in the comparison group. The regression results aim to answer two key evaluation questions:

1. Did the MAPCP Demonstration expenditures and utilization rates during the MAPCP Demonstration period? Specifically, was the Chronic Care Initiative associated with slower growth in Medicare expenditures or reductions in utilization, relative to beneficiaries assigned to comparison practices?
2. Did the demonstration effect differ, depending on whether beneficiaries assigned to CCI practices were compared to either (1) beneficiaries assigned to PCMHs in the comparison group, or (2) beneficiaries assigned to non-PCMHs in the comparison group?

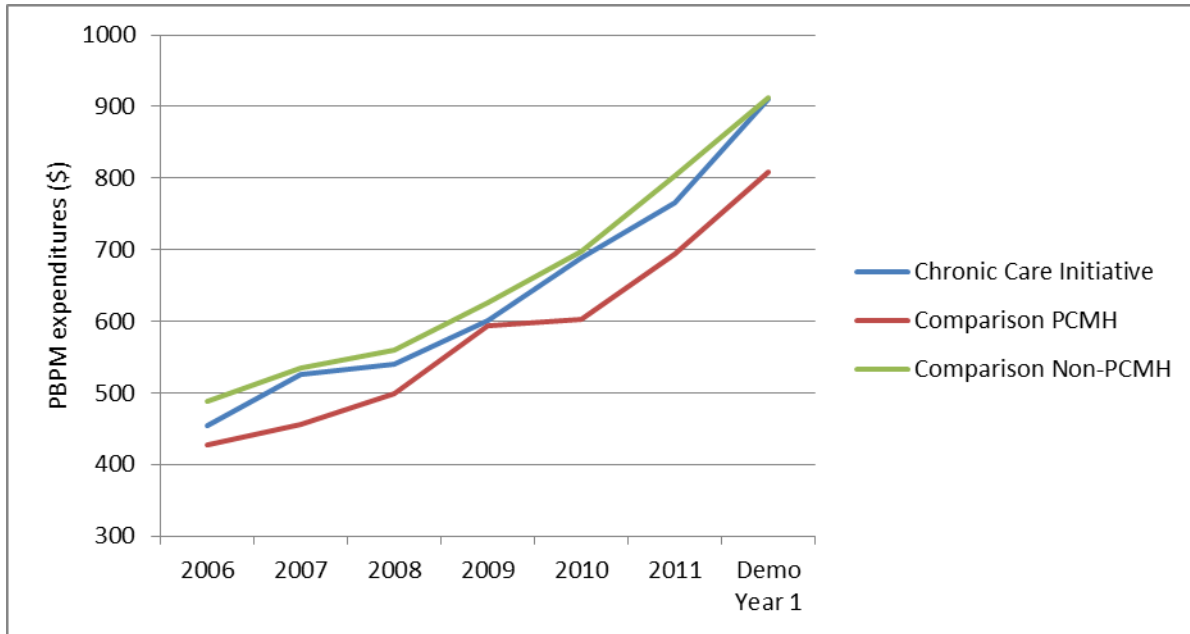
The regression tables presented below will help answer these questions. They contain estimates of the demonstration effects for each quarter, and their standard errors. For expenditures, these are “difference-in-differences” effects. Negative estimates indicate that the growth in expenditures was smaller for beneficiaries assigned to participating practices than for beneficiaries assigned to practices in the comparison group. Conversely, positive expenditure estimates indicate that the growth in Medicare expenditures was larger for beneficiaries assigned to participating practices than for beneficiaries assigned to practices in the comparison group. We also report the average demonstration effect over the entire first year of the demonstration, calculated as a weighted average of the four quarterly estimates (see *Section 1.2.3*).

For the rates (per 1,000 beneficiaries) of all-cause, acute care hospitalizations, ER visits, and 30-day unplanned readmissions, the quarterly demonstration effects represent, for each demonstration quarter, the (regression-adjusted) change in average utilization among beneficiaries assigned to participating practices, relative to beneficiaries assigned to comparison practices. Negative estimates suggest that during particular demonstration quarters the state initiative was able to lower the utilization rate for beneficiaries assigned to participating practices, relative to beneficiaries assigned to comparison practices. Conversely, positive estimates suggest that the state initiative was associated with increased utilization rates in certain

quarters during the demonstration period. As with the expenditure outcomes, we also report the average demonstration effect for utilization rates over the entire first year of the demonstration, calculated as a weighted average of the four quarterly estimates.

Descriptive statistics. Average per beneficiary per month (PBPM) Medicare expenditures and average utilization rates (per 1,000 Medicare FFS beneficiaries) from 2006 through the first year of the MAPCP Demonstration are shown in *Figures 10-2 through 10-7*. Total Medicare expenditures (*Figure 10-2*) increased and were higher among beneficiaries assigned to CCI practices and comparison non-PCMHs, compared to beneficiaries assigned to comparison PCMHs. Between 2006 and the first demonstration year, expenditures for short-stay, acute care hospitals (*Figure 10-3*) increased and were typically the highest among beneficiaries assigned to comparison non-PCMHs. Expenditures for ER visits (*Figure 10-4*) were very similar for all three groups of beneficiaries. The rate of all-cause, acute care hospitalizations (*Figure 10-5*) increased and was higher during the first demonstration year among beneficiaries assigned to CCI practices and comparison non-PCMHs, compared to beneficiaries assigned to comparison PCMHs. The rate of ER visits (*Figure 10-6*) was similar among all three groups of beneficiaries. Finally, between 2006 and the first demonstration year, the rate of 30-day unplanned readmissions (*Figure 10-7*) increased. During the first demonstration year this rate was highest among beneficiaries assigned to CCI practices and comparison non-PCMHs.

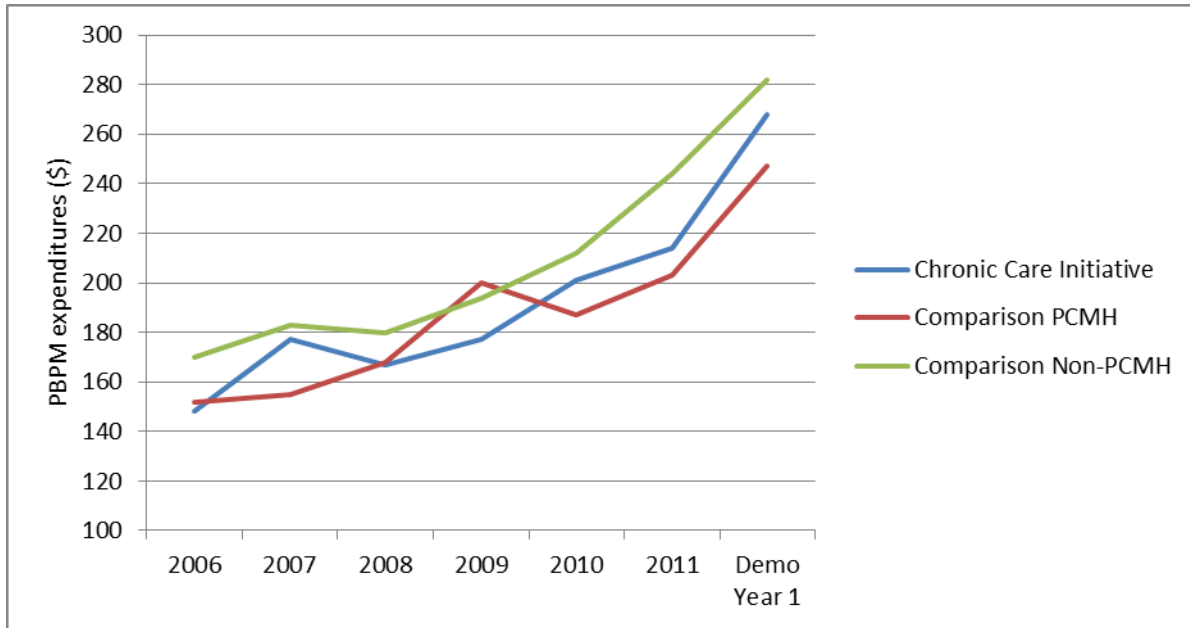
Figure 10-2
Pennsylvania: Trend in average total PBPM Medicare expenditures from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to CCI practices, comparison PCMHs and comparison non-PCMH practices



NOTES: MAPCP = multi-payer advanced primary care practice; CCI = chronic care initiative; PCMH = patient-centered medical home; PBPM = per beneficiary per month.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). These amounts do not include fees paid by Medicare as a result of participation in the Chronic Care Initiative.

Figure 10-3
Pennsylvania: Trend in average PBPM Medicare expenditures for short-stay, acute-care hospitals from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to CCI practices, comparison PCMHs and comparison non-PCMH practices

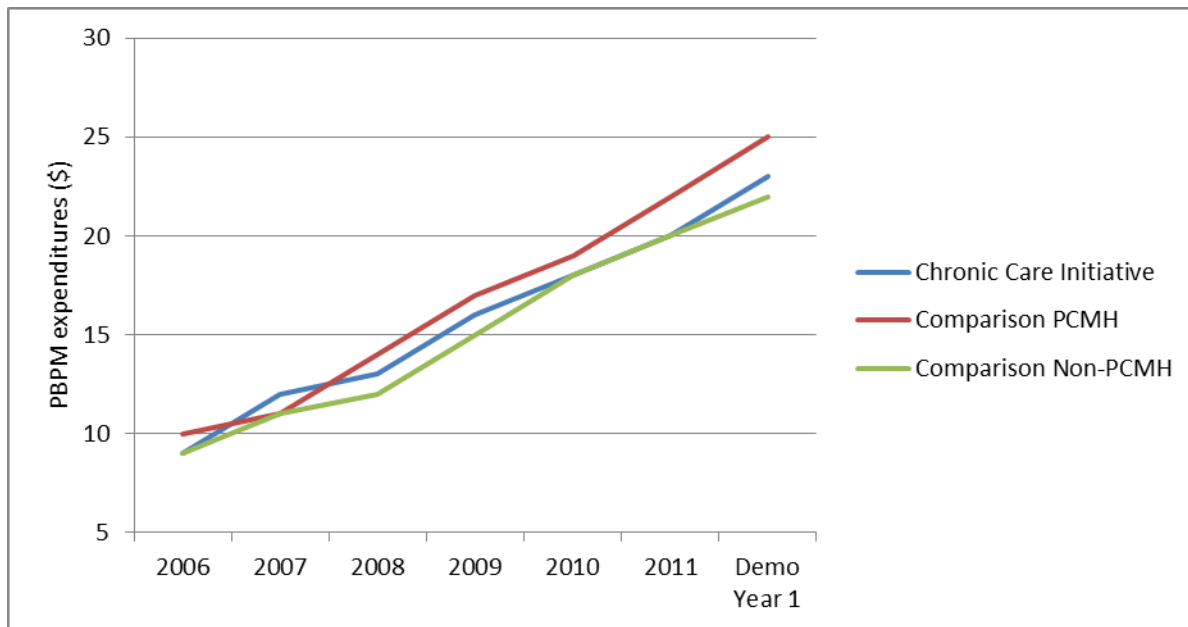


NOTES: MAPCP = multi-payer advanced primary care practice; CCI = chronic care initiative; PCMH = patient-centered medical home; PBPM = per beneficiary per month.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). These amounts do not include fees paid by Medicare as a result of participation in the Chronic Care Initiative.

Figure 10-4

Pennsylvania: Trend in average PBPM Medicare expenditures for ER visits and observation stays from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to CCI practices, comparison PCMHs and comparison non-PCMHs¹



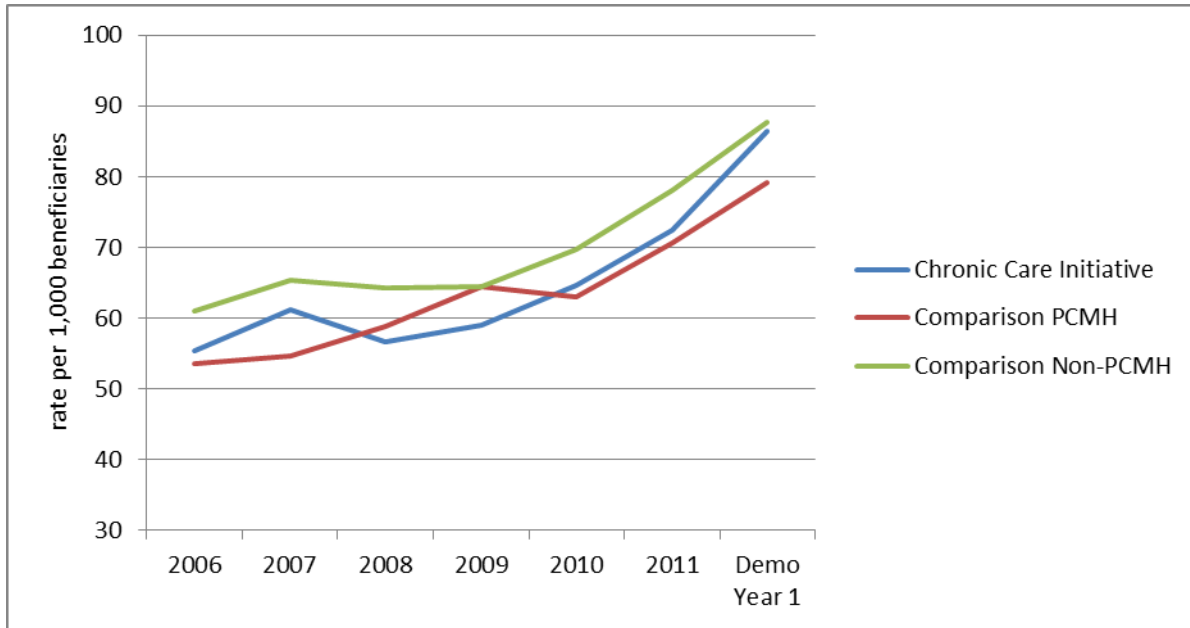
NOTES: MAPCP = multi-payer advanced primary care practice; CCI = chronic care initiative; PCMH = patient-centered medical home; PBPM = per beneficiary per month; ER = emergency room.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group). These amounts do not include fees paid by Medicare as a result of participation in the Chronic Care Initiative.

¹ This excludes Medicare expenditures for ER visits that led to a hospitalization.

Figure 10-5

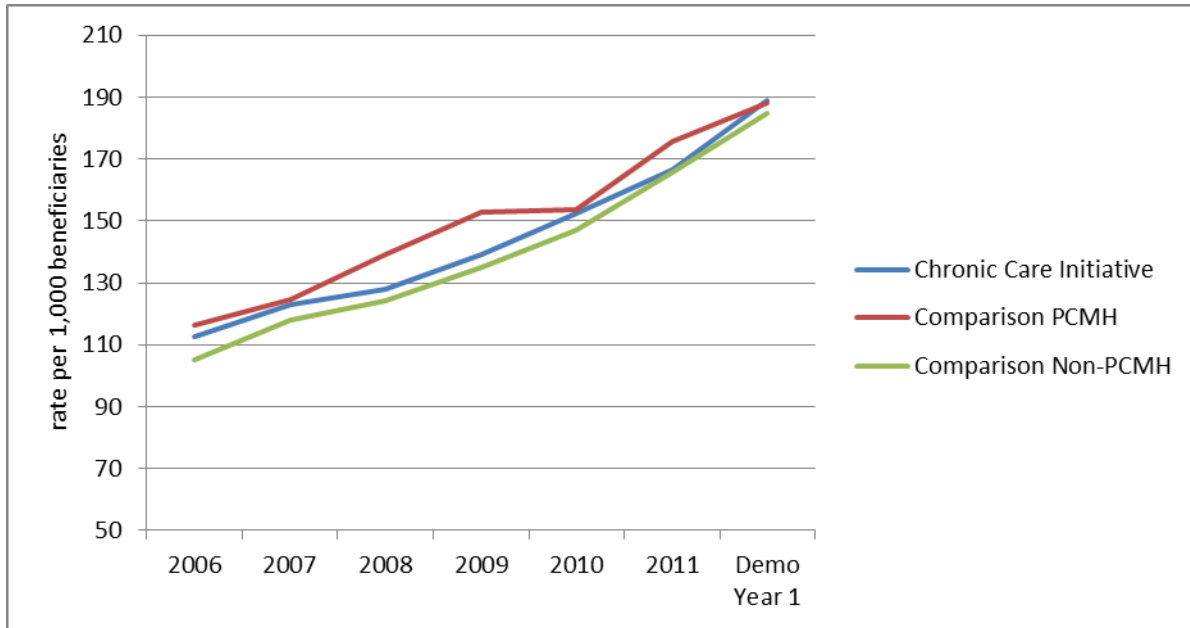
Pennsylvania: Trend in average quarterly rate of all-cause, acute-care hospitalizations per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to CCI practices, comparison PCMHs and comparison non-PCMH practices



NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; CCI = chronic care initiative; PCMH = patient-centered medical home.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group).

Figure 10-6
Pennsylvania: Trend in average rate of ER visits and observation stays per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to CCI practices, comparison PCMHs and comparison non-PCMH practices¹

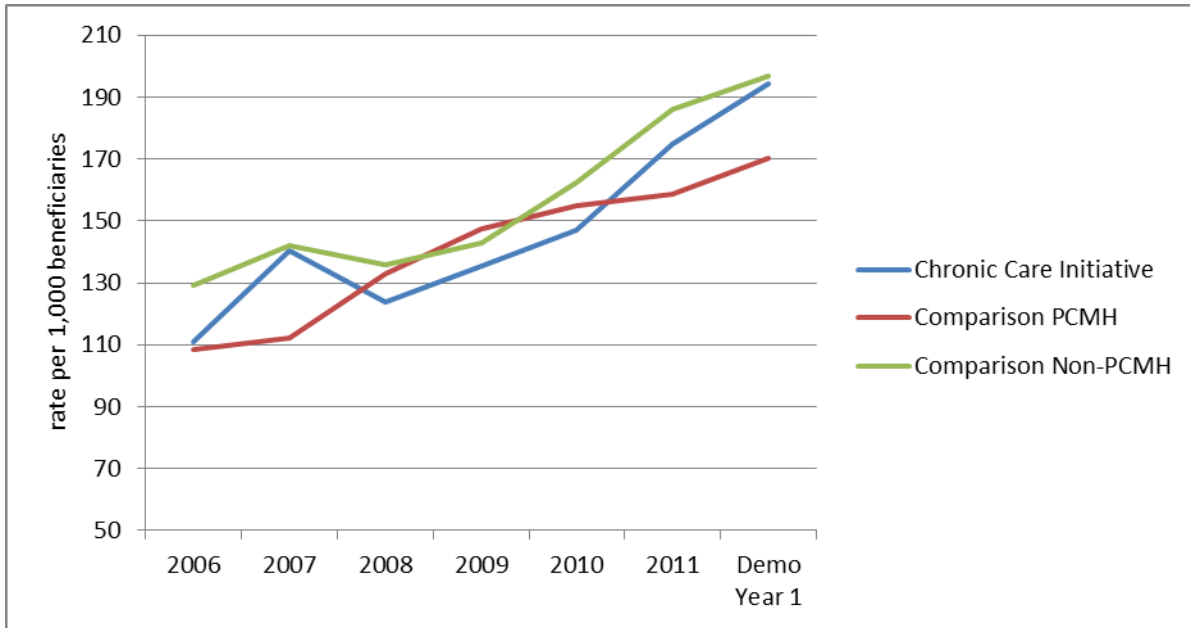


NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; CCI = chronic care initiative; PCMH = patient-centered medical home; ER = emergency room.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group).

¹ This includes ER visits that led to a hospitalization.

Figure 10-7
Pennsylvania: Trend in average rate of unplanned hospital readmissions per 1,000 Medicare FFS beneficiaries from 2006 through the first 12 months of the MAPCP Demonstration, for beneficiaries assigned to CCI practices, comparison PCMHs and comparison non-PCMHs



NOTES: FFS = fee for service; MAPCP = multi-payer advanced primary care practice; CCI = chronic care initiative; PCMH = patient-centered medical home.

Averages are weighted by eligibility fractions and the propensity score odds (for the comparison group).

Regression estimates. Quarterly difference-in-differences effects for Medicare expenditures, and their weighted average over the first year of the MAPCP Demonstration, are given in *Table 10-5*. Quarterly demonstration effects for the utilization rates, and their weighted averages, are given in *Table 10-6*.

Table 10-5
Pennsylvania: Quarterly difference-in-differences estimates for PBPM Medicare expenditures during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to CCI practices vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Quarter	CCI vs. CG PCMH			CCI vs. CG Non-PCMH		
	Total (\$)	Acute Care (\$)	ER (\$)	Total (\$)	Acute Care (\$)	ER (\$)
Jan–Mar 2012	–16.79 (26.24)	–12.40 (16.12)	–1.24 (1.02)	–24.03 (18.92)	–12.34 (10.72)	–1.26 (0.83)
Apr–Jun 2012	55.36 (36.84)	27.58 (21.04)	–2.45 (1.53)	–2.42 (33.66)	5.45 (13.07)	–0.00 (0.89)
Jul–Sep 2012	9.44 (27.83)	0.47 (14.32)	–2.28 (1.42)	22.38 (43.72)	7.18 (16.41)	–0.98 (0.80)
Oct–Dec 2012	–0.80 (25.80)	10.69 (15.84)	–1.13 (1.28)	76.86* (38.03)	39.89* (16.11)	2.22* (1.23)
Average ¹	11.89 (22.16)	6.73 (11.10)	–1.78* (0.84)	19.07 (28.36)	10.47 (10.24)	0.02 (0.55)

NOTES: MAPCP = multi-payer advanced primary care practice; CCI = chronic care initiative; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room.

The table contains the difference-in-differences estimates for Medicare expenditures during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

¹ This is a weighted average of the four quarterly difference-in-differences estimates, where the weights are the numbers of eligible beneficiaries who were assigned to a CCI practice in each quarter.

* p<0.10

Table 10-6
Pennsylvania: Quarterly demonstration effect estimates for utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries assigned to CCI practices vs. beneficiaries assigned to comparison PCMHs and non-PCMHs

Quarter	CCI vs. CG PCMH			CCI vs. CG Non-PCMH		
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	Unplanned readmissions (per 1,000 beneficiaries)
Jan–Mar 2012	3 (2.9)	5 (5.6)	32* (18.6)	0 (2.0)	–8 (10.9)	15 (19.2)
Apr–Jun 2012	10* (4.4)	7 (5.7)	32* (19.4)	4 (5.9)	2 (4.8)	22 (32.1)
Jul–Sep 2012	13* (4.3)	21* (8.9)	29 (18.1)	7 (10.0)	3 (5.2)	17 (26.7)
Oct–Dec 2012	4 (3.1)	8 (6.5)	31 (23.0)	5 (9.2)	9 (12.7)	–14 (27.2)
Average ¹	8* (2.8)	10* (5.0)	31* (16.8)	4 (6.3)	1 (3.8)	9 (14.9)

NOTES: MAPCP = multi-payer advanced primary care practice; CCI = chronic care initiative; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room.

The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. Standard errors are given in parentheses below each estimate.

Due to the non-linearity of the regression models for utilization, the demonstration effect estimates do not have a difference-in-differences interpretation.

¹ This is a weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who were assigned to a CCI practice in each quarter.

* p<0.10

From *Tables 10-5 and 10-6*, we reach the following conclusions about the impact of the Chronic Care Initiative on Medicare FFS beneficiaries during the first year of the MAPCP Demonstration.

- Between the baseline period and the first demonstration year, the average growth in **total Medicare expenditures** and **expenditures for short-stay, acute care hospitals** was similar for beneficiaries assigned to CCI practices, comparison PCMHs and comparison non-PCMHs.
- Between the baseline period and the fourth demonstration quarter, all expenditure categories increased faster for beneficiaries assigned to CCI practices, relative to beneficiaries assigned to comparison non-PCMHs. Analysis of future demonstration quarters will determine if the higher rates of growth continue or are temporary in nature.
- Between the baseline period and the first demonstration year, **expenditures for ER visits** increased less for beneficiaries assigned to CCI practices, relative to beneficiaries assigned to comparison PCMHs. However, the magnitude of the difference ($-\$1.78$ PBPM) was marginal.
- During the first year of the MAPCP Demonstration, the average rates of **all-cause, acute care hospitalizations, ER visits, and 30-day unplanned readmissions** increased for beneficiaries assigned to CCI practices, relative to beneficiaries assigned to comparison PCMHs.

Cohort 1 analysis. The quarterly fixed effects model was also estimated using only data from the beneficiaries in “cohort 1.” These are beneficiaries who were first assigned to a CCI practice or comparison practice during the first quarter of Phase II CCI (January–March 2012); it does not include those beneficiaries who were newly assigned during the third and fourth quarters of Phase II CCI. As discussed in more detail in *Section 1.2.3*, the purpose of a cohort 1 analysis was to measure the demonstration effects on stable intervention and comparison groups. In the data used for this report, cohort 1 beneficiaries comprised 84% of the CCI group, 64% of the PCMH comparison group, and 85% of the non-PCMH comparison group.

The full set of cohort 1 estimates for Medicare expenditures and utilization rates are given in *Tables 10A-1 and 10A-2* in *Appendix 10A*, respectively. For convenience we repeat here the average estimates for the first MAPCP Demonstration year in *Table 10-7*. On comparing these estimates with the ones for the full sample in *Tables 10-5 and 10-6*, we note the following differences and similarities.

- Unlike the corresponding estimate based on the full sample of beneficiaries, the rate of growth in **total Medicare expenditures** was greater among cohort 1 beneficiaries assigned to CCI practices, compared to cohort 1 beneficiaries assigned to comparison PCMHs.
- Unlike the corresponding estimate based on the full sample of beneficiaries, the growth in **expenditures for ER visits** was similar for cohort 1 beneficiaries assigned to CCI practices or comparison PCMHs.

- During the first demonstration year, the rates of **all-cause, acute care hospitalizations** and **ER visits** increased among cohort 1 beneficiaries assigned to CCI practices, relative to cohort 1 beneficiaries assigned to comparison PCMHs. This agrees with the estimates based on the full sample of beneficiaries.
- Unlike the corresponding estimate based on the full sample of beneficiaries, the rate of **30-day unplanned readmissions** did not change significantly for cohort 1 beneficiaries assigned to CCI practices, relative to cohort 1 beneficiaries assigned to comparison PCMHs.

In sum, the rates of growth in total Medicare expenditures and expenditures for ER visits between the baseline and the first year of Phase II of CCI, relative to comparison PCMHs, were higher for cohort 1 compared to the full sample of beneficiaries. This suggests that CCI practices were more successful in reducing the growth in these expenditures among beneficiaries who joined Phase II of CCI after the first quarter. The estimates for the first demonstration year also suggest that the opposite appears to be the case for the rate of unplanned readmissions.

Table 10-7

Pennsylvania: Average demonstration effect estimates during the first year of the MAPCP Demonstration for Medicare expenditures and utilization rates, comparing performance for Medicare beneficiaries first assigned in January–March 2012 to CCI practices vs. comparison PCMHs and non-PCMHs

Outcome	CCI vs. CG PCMH		CCI vs. CG non-PCMH	
	Average effect	Standard error	Average effect	Standard error
Total expenditures (\$)	41.83*	(21.67)	14.25	(31.19)
Acute care expenditures (\$)	15.88	(10.98)	8.10	(10.95)
ER expenditures (\$)	-0.79	(0.81)	0.27	(0.49)
All-cause hospitalizations (per 1,000 beneficiaries)	8*	(4.2)	4	(5.9)
ER visits (per 1,000 beneficiaries)	14*	(6.5)	1	(3.8)
Unplanned readmissions (per 1,000 beneficiaries)	19	(19.4)	4	(10.3)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CCI = chronic care initiative; CG = comparison group; ER = emergency room.

The table contains the average demonstration effect estimates and standard errors for the first year of the MAPCP Demonstration, for Medicare expenditures and utilization rates. The average estimate is a weighted average of the four quarterly effects, where the weights are the numbers of demonstration-eligible beneficiaries in each quarter.

For Medicare expenditures, the demonstration effects can be interpreted as differences-in-differences.

* p<0.10

Summary of evaluation findings. Our analyses of Medicare expenditures and utilization rates during the first year of the MAPCP Demonstration provide some preliminary evidence about the effectiveness of the demonstration for Medicare FFS beneficiaries in Pennsylvania. The evidence can be summarized as follows.

- There is no evidence that the Chronic Care Initiative reduced the growth in **total Medicare expenditures or expenditures for short-stay, acute care hospitals** during the first year of Phase II of CCI. In fact, in the sample of cohort 1 beneficiaries, the average growth in total expenditures was larger among beneficiaries assigned to CCI practices than among beneficiaries assigned to comparison PCMHs.
- There is some evidence that the state initiative reduced the growth in **expenditures for emergency rooms** relative to comparison PCMHs during the first demonstration year. The reduction, however, was small and was not observed relative to comparison non-PCMHs.
- There is no evidence that the Chronic Care Initiative reduced the rates of **all-cause, acute-care hospitalizations, ER visits or 30-day unplanned readmissions** during the first year of the demonstration. These rates increased on average among beneficiaries assigned to CCI practices, relative to comparison PCMHs.

10.6.3 Medicare Budget Neutrality in Year 1 of the Pennsylvania Chronic Care Initiative

In this section, we present estimates of budget neutrality in the first year of the MAPCP Demonstration (or Phase II of CCI) using the methodology described in *Section 1.2.3*. *Table 10-8* reports the estimated gross and net savings for Pennsylvania.

Differences in quarterly expenditures per beneficiary are based on a regression sample of all CCI demonstration and comparison beneficiaries in the Southeast and Northeast regions of Pennsylvania, including those in other CMS demonstrations and programs. Comparison beneficiaries were matched to CCI intervention beneficiaries separately for each region. Over seven years average quarterly spending per beneficiary rose \$1,500. Beneficiary HCC risk score, female gender, institutionalized status, and end-stage renal disease eligibility were strong predictors of higher Medicare spending. Beneficiary practice characteristics were of minor importance in explaining higher spending. Somewhat smaller practices exhibited higher costs of roughly \$100 per quarter compared with a \$1,556 increase in average spending for beneficiaries with an HCC score one level higher. The marginal effects of CCI on costs after controlling for beneficiary, practice, and area characteristics are shown on the first row of *Table 10-8*.

Total fees include Medicare payments on behalf of all CCI Medicare beneficiaries. Total gross savings are based on intervention minus comparison cost differences times number of MAPCP Demonstration eligible quarters. (Negative differences represent positive gross savings.) Net savings to Medicare is the difference between gross savings and fees.

Table 10-8
Estimates of gross savings, fees paid, & net savings, Year 1 of the MAPCP Demonstration, Pennsylvania

Budget Neutrality Parameter	MAPCP Demonstration Quarter (Year 1)				Year 1 Total	90 % Confidence Interval	
	Jan–Mar 2012	Apr–Jun 2012	Jul–Sep 2012	Oct–Dec 2012		Lower	Upper
Combined (2 regions)							
Difference in quarterly expenditures per beneficiary	-\$40.75	\$182.45	\$40.45	\$33.22	—	—	—
Eligible beneficiary quarters	25556	26353	26980	27320	106210	—	—
Total gross savings	\$1,041,492	-\$4,808,176	-\$1,091,310	-\$907,688	-\$5,765,682	-\$20,195,209	\$8,663,845
Total MAPCP Demonstration fees	\$461,112	\$556,039	\$513,961	\$538,579	\$2,069,690	—	—
Net savings	\$580,381	-\$5,364,215	-\$1,605,271	-\$1,446,267	-\$7,835,372	—	—
Average expenditures (comparison group)	\$2,309	\$2,361	\$2,459	\$2,578	\$9,707	—	—
Total expenditures (comparison group)	\$59,010,085	\$62,215,526	\$66,334,228	\$70,443,644	\$258,003,482	—	—

NOTES:

*p<.10; **p<.05; ***p<.01

Difference in quarterly expenditures per beneficiary: Estimated difference in average Medicare Part A and B expenditures between beneficiaries assigned to CCI practices and those assigned to PCMHs in the comparison group, excluding beneficiaries with less than 3 months of demonstration eligibility.

Eligible beneficiary quarters: Sum of CCI beneficiaries' fractions of quarters eligible to participate in the MAPCP Demonstration, excluding beneficiaries with less than 3 months of eligibility.

Total gross savings: Combined savings effect per beneficiary times the number of eligible beneficiary quarters. Savings are the negative of the expenditure difference. Positive savings indicate that the intervention group's expenditures increased less than the comparison group's expenditures. Negative savings indicate that the intervention group's expenditures increased more than the PCMH comparison group's expenditures.

Total MAPCP Demonstration fees: Sum of all MAPCP Demonstration fees, excluding fees paid on behalf of Medicare beneficiaries with less than 3 months of eligibility.

Net savings: Gross savings minus total MAPCP Demonstration fees.

Average expenditures (PCMH comparison group): Medicare expenditures per beneficiary in the comparison group.

Total expenditures (PCMH comparison group): Average expenditures per beneficiary times the number of CCI beneficiaries' eligible quarters.

SOURCE: Medicare Part A and B claims January 1, 2006–December 31, 2012.

Medicare expenditures among CCI beneficiaries increased at a slower rate in the first demonstration quarter (−\$40.75) than in the comparison group before rising at a faster rate in the next three quarters. Statewide gross savings were positive in the first quarter (slightly over \$1 million), followed by large negative savings of almost \$5 million in the second quarter. (The second quarter coefficient was statistically different from zero at the 12% level of significance.) Gross savings for the first year represented a loss of \$5,765,682, or an annual spending amount more than predicted in the comparison group. The 90% confidence interval ranged from −\$20 million to +\$8.7 million. This implies that gross savings may be zero over repeated samples. Gross losses per eligible quarter were −\$54.29 and −\$217.14 per full eligible year. Gross Phase II CCI losses were 2.2% of average comparison spending.

After subtracting \$2,069,690 in MAPCP Demonstration fees paid by Medicare, net savings increased to −\$7,835,372, or −\$73.77 per eligible quarter and −\$295.09 per full-year eligible beneficiary. Net savings per \$1 in Medicare fees was −\$2.78.

Medicare losses in Pennsylvania are primarily the result of large losses incurred in the second demonstration quarter. Phase II CCI losses were minimal when averaged across the other three quarters. Data from the second and third demonstration years will help determine whether the Chronic Care Initiative can generate net savings in the longer term.

10.7 Special Populations

10.7.1 Targeting of Special Populations and Tailored Interventions During Year 1

In Phase I of CCI, Pennsylvania payers and practices focused on patients with chronic conditions. The state started with a very small set (diabetes and asthma) to help payers and practices experiment with ways to pay for medical homes and improve care coordination and outcomes. In Phase II of CCI, Pennsylvania and the participating practices are still focusing on patients with chronic conditions. However, as described the payers have expanded the set considerably and so practices have also added new areas of focus in response, including

- preventive care (e.g., smoking status and interventions, obesity and body mass index, cancer screening and prevention, immunizations);
- additional chronic conditions (e.g., congestive heart failure); and
- high-risk patients.

The algorithms used by payers to define high risk patients varies and practices use the data on high-risk patients provided by each plan, in addition to their own EHR and disease registry data, to target patients for care management in different ways.

There are no special interventions for Medicare, Medicaid, or dual eligible beneficiaries in Phase II of CCI. The rationale for this approach, as articulated by some respondents, is that practices are improving their systems of care to produce better outcomes and all patients are treated similarly. What matters most is not the patient's insurance status, but their clinical characteristics and needs, particularly whether they need preventive care, have chronic conditions, or are at high-risk.

The state is beginning to explore enhancements to their PCMH approach that might differentially target or affect Medicare, Medicaid, or dual eligible beneficiaries in the future. Specifically, the state and payers are exploring ways to strengthen linkages with behavioral health plans and providers, potentially developing community health teams, and strengthening linkages with other social service agencies that might help manage these populations' conditions and care. As in many states, Pennsylvania's Medicaid program has a mental health "carve-out," so there are separate behavioral health plans and providers that do not frequently share information about beneficiaries with plans covering medical benefits and medical homes in Phase II of CCI.

10.7.2 Impacts on Special Populations

Quantitative data assessing the impacts of Phase II of CCI on special populations are not yet available. In future reports, we plan to report our findings on the impacts of the demonstration on special populations as defined by each state initiative or special populations of policy interest.

10.8 Discussion

Phase II of CCI began on January 1, 2012, when Medicare joined as a payer in the Northeast and Southeast Pennsylvania regions. Under Phase II of CCI, the Northeast and Southeast regions adopted a single payment methodology and aligned requirements and learning collaborative activities for participating practices. As discussed, providers and payers raised several concerns about the payment methodology, including worries that the PMPM payments may be too low, a perceived lack of payer transparency in calculating shared savings and the time to calculate them, large enough saving may not be realized so there would be no shared savings payments, and the shared savings methodology may inadvertently reward or punish practices.

Phase II of CCI got off the ground slowly—with the start date postponed until January 2012—due to the change in administration and the transition in the project's leadership from the GOHCR to DOH. Though some respondents felt that the new Governor is supportive of Phase II, others believe that Phase II is a lower priority than Phase I was during the Rendell administration. The transfer of CCI from GOHCR to DOH also slowed implementation, due to staff departures and the arrival of new hires who had to familiarize themselves with the project. Although staff and some resources to support the initiative remain at DOH, the willingness to use the power of the Governor's office and state Medicaid agency as a purchaser is perceived by some to have declined considerably.

State budget pressures also impacted Medicaid's participation in Phase II of CCI. Given state budget difficulties, a decision was made not to pay practices in the Northeast. Even when the state reversed their decision to meet the terms of the state's MAPCP Demonstration participation agreement, which requires Medicaid participation in each region, it took the state longer than hoped to pay the practices retrospectively. Some respondents perceived these events—as the state not honoring its commitment to participate in the demonstration and pay practices for the Medicaid FFS beneficiaries for which they care for in the Northeast. .

After the close of Phase I of CCI, a number of commercial payers and Medicaid managed care plans withdrew from the initiative or declined to join Phase II. Pennsylvania's struggle to engage payers and the exit of some health insurance plans from Phase II of CCI are an ongoing concern. These payer pull-outs have reduced the size and scope of Phase II and may have shaken providers' confidence in the stability of the initiative.

Practices have largely remained in Phase II of CCI so far (two practices have dropped out), but could begin to withdraw from the initiative in greater numbers if they believe that their payments are or will be too small to cover their participation costs, particularly as guaranteed PMPM payments decrease each year and practices have to earn more money through shared savings.

In Phase II, CCI required practices to make a number of changes related to enhancing care management services, particularly the Phase II requirement to have an on-site care manager and an electronic disease registry, which allows practices to track patients with certain conditions, such as diabetes. CCI has focused to a lesser degree on enhancing access to care for patients and improving practice linkages to their communities and to community-based supports and organizations.

Despite structural changes that have reportedly been made within the participating practices and the health system that surrounds these practices to improve access to and continuity of care, these efforts did not yet translate into lower rates of growth in Medicare expenditures or acute care utilization in Year 1 of the demonstration.

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LIST OF ACRONYMS

EVALUATION OF THE MULTI-PAYER ADVANCED PRIMARY CARE PRACTICE (MAPCP) DEMONSTRATION

ABD: aged, blind, or disabled

ACO: Accountable Care Organization

ACSC: ambulatory care sensitive conditions

ADK Demonstration: Adirondack Medical Home Demonstration

AHEC: Area Health Education Centers

AHI: Adirondack Health Institute, Inc.

AHRQ: Agency for Healthcare Research and Quality

APCD: all-payers claims database

APC: advanced primary care

APCP: advanced primary care practice

ARC: Actuarial Research Corporation

BCBS: BlueCross Blue Shield

BMI: body mass index

BQPP: Blue Quality Physician Program

CAHPS: consumer assessment of healthcare providers and services

CCI: Chronic Care Initiative

CCNC: Community Care of North Carolina

CCT: community care teams

CCTP: Community-Based Care Transitions Program

CDE: certified diabetic educator

CEDARR: Rhode Island's Comprehensive Evaluation, Diagnosis, Assessment, Referral, and Re-evaluation

CG: comparison group

CHF: congestive heart failure

CHT: community health teams

CMIS: Case Management Information System

CMS: Centers for Medicare & Medicaid Services

COC: Continuity of Care Index

COPD: chronic obstructive pulmonary disease

CPC: comprehensive primary care

CSI: Chronic Care Sustainability Initiative

DE: dual eligible

D-in-D: difference-in-differences

DOH: Department of Health

DME: durable medical equipment

DPW: Department of Public Welfare

E&M: Evaluation and Management

EDB: Enrollment Data Base

EF: eligibility fraction

EHR: electronic health record

EQuIP: Expansion and Quality Improvement Program

ER: emergency room

ESRD: end-stage renal disease

FFS: fee-for-service

FPL: federal poverty level

FQHC: federally qualified health centers

GOHCR: Governor's Office for Health Care Reform

HCC: Hierarchical Condition Category

HCH: Health Care Homes

HEAL NY: Health Care Efficiency and Affordability Law for New Yorkers

Health IT: health information technology

HEDIS: Health Effectiveness Data and Information Set

HHA: Home Health Agency

HIE: Health Information Exchange

HIPAA: Health Insurance Privacy and Accountability Act

HITECH: Health Information Technology for Economic and Clinical Health

HIXNY: Health Information Xchange New York

HMO: health maintenance organization

HSA: health service area

IRR: incidence rate ratio

LDL: low-density lipoprotein

MA: Medicare Advantage

MAPCP: Multi-payer Advanced Primary Care Practice

MAT: medication assisted therapy

MCOs: managed care organizations

MDM: Master Data Management

MHDO: Maine Health Data Organization

MiPCT: Michigan Primary Care Transformation Project

NCDHHS/ORHCC: North Carolina Department of Health and Human Service's Office of Rural Health and Community Care

NCQA: National Committee for Quality Assurance

NP: Nurse Practitioner

NPI: National Provider Identification

NPPES: National Plan and Provider Enumeration Systems

OHIC: Rhode Island Office of the Health Insurance Commissioner

OMB: Office of Management and Budget

OPD: outpatient department

OSC: organized systems of care

P4P: pay-for-performance

PA: Physician Assistant

PAC: post-acute care

PAFP: Pennsylvania Academy of Family Physicians

PBPM: per beneficiary per month

PCMH: patient-centered medical home

PGIP: Physician Group Incentive Program

PGP: Physician Group Practice

PMPM: per member per month

PPC[®]-PCMH[™]: Physician Practice Connection Patient-Centered Medical Home

PS: propensity score

QFE: quarterly fixed effects

REC: Regional Extension Center

RIQI: Rhode Island Quality Institute

RN: Registered Nurse

SASH: Support and Services at Home

SIM: State Innovation Model

SNF: skilled nursing facility

SPA: State Plan Amendments

VCCI: Vermont Chronic Care Initiative

VCHIP: Vermont Child Health Improvement Program

VHCURES: Vermont Healthcare Claims Uniform Reporting and Evaluation System

VHIE: Vermont's Health Information Exchange

VITL: Vermont Information Technology Leaders

VNA: Visiting Nurse Association

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APPENDIX 1A
MAPCP DEMONSTRATION RESEARCH QUESTIONS, METHODS, AND DATA SOURCES

Substantive area research questions	Methods	Data sources
<p><i>Measuring State Initiative Implementation and Evolution</i></p> <ol style="list-style-type: none"> 1. What are the features of the state initiative? 2. Which features of the state initiative (e.g., community-based resources, learning collaborative, feedback reports) are used by participating PCMHs and Medicare and Medicaid beneficiaries and to what extent? What impacts resulted from their use? Which features were most useful? What features were not as helpful or need improvement? 3. Does Medicare’s participation in the state initiative have any spillover effects on states’ Medicaid programs or private payers? For example, did Medicare’s participation in the state initiative cause any cost shifting from one program to another? 4. What changes did payers make in order to take part in the state initiative and meet the participation requirements? What was involved in making these changes? How long did it take to implement these changes? What challenges did they face? What lessons were learned from the experience? 5. What kinds of structural and/or organizational changes were made to accommodate Medicare’s participation in the state initiative and to better serve the needs of Medicare beneficiaries? How did administrative burdens and resource allocations change as a result of Medicare’s participation? What new features did the states add to their initiative and what new partnerships did they establish to better serve the needs of Medicare beneficiaries? 6. What were participants’ experiences with the MAPCP Demonstration? What lessons were learned from the experience? What advice do they have if the demonstration were to be extended or expanded? Participants include initiative staff and their contractors/vendors, payers. 7. How do the state agency and participating communities use the PCMH payments? For example, with the additional funds, do they increase the number of participating practices or communities, expand the size or scope of the initiative, implement additional interventions, or add staff? 	<ul style="list-style-type: none"> • Within-state qualitative data analyses using case study methods and NVivo software for data management and analysis of four domains: scope of the demonstration, requirements of participating practices, supports to improve the delivery of care, and payment model, amounts, and uses. • Descriptive analyses establishing the scope of the demonstration: number and characteristics of participating practices, number and characteristics of participating Medicare and Medicaid beneficiaries, and population served (patient eligibility requirements and patient attribution process). • Development of state initiative-level variables for inclusion in within- and cross-state modeling of selected outcomes using mixed methods (see quantitative outcomes analyses and cross-state qualitative and quantitative analyses below). 	<ul style="list-style-type: none"> • Key informant interviews conducted through telephone calls and in-person site visits with state officials, MAPCP Demonstration program staff, state program evaluators, Medicaid state program officials, participating private payers, and other key informants (e.g., Office of Aging staff, patient advocates) • State or state evaluator provided information or data • Review of source documentation from each state’s MAPCP Demonstration application and modifications • Review of state quarterly progress reports • Review of state policymakers’ exchange through the NASHP medhome-builder listserv • Scan of national reports, including daily digests and research journals, newsletters, and newspapers • Ongoing communication with state policy staff • Medicare EDB and claims data

(continued)

Substantive area research questions	Methods	Data sources		
<i>Practice Transformation Evaluation</i>				
8. What are the features of participating PCMHs? How do features of the participating PCMHs vary?	<ul style="list-style-type: none"> • Within-state qualitative data analyses using case study methods and NVivo software for data management and analysis of domains related to process transformation activities and the perceived effects that the state initiative's features have on their transformation and performance (see proposed additional analyses below related to patient safety, access and coordination of care, and special populations) • Within-state qualitative analysis of process transformation activities related to efficiency • Development of practice transformation-level variables, including community health teams, for inclusion in within- and cross-state modeling of selected outcomes (see quantitative outcomes analyses and cross-state qualitative and quantitative analyses below) 	<ul style="list-style-type: none"> • Semi-structured interviews conducted through in-person site visits with participating practices, CHTs, and other relevant clinical staff • Key informant interviews conducted through telephone calls and in-person site visits with state officials and program staff • PCMH practice recognition surveys • Provider practice transformation survey State-level variables 		
9. Which features of the state initiative (e.g., community-based resources, learning collaborative, feedback reports) are used by participating PCMH practices and to what extent? What impacts resulted from their use? Which features were most useful? What features were not as helpful or need improvement?				
10. What changes did practices make in order to take part in the state initiative and meet the participation requirements? What was involved in making these changes? How long did it take to implement these changes? What challenges did they face? What lessons were learned from the experience?				
11. What kinds of structural and/or organizational changes were made to accommodate Medicare's participation in the state initiative and to better serve the needs of Medicare beneficiaries? How did administrative burdens and resource allocations change as a result of Medicare's participation?				
12. What were participants' experiences with the MAPCP Demonstration? What lessons were learned from the experience? What advice do they have if the demonstration were to be extended or expanded? Participants include community-based and practice staff.				
13. How do the participating practices use the PCMH payments?				
14. Which payment methods and payment amounts are most effective in producing positive impacts? What problems occurred in implementing the payment methodologies and how were they resolved?				
15. How much does it cost to implement and sustain the various features of a PCHM practice? What payment amount is sufficient to offset those costs? What payment methodology is best suited for financially supporting practices in their medical home transformation?				
16. Do features of the state initiative, or features of the PCMH practices or community health teams participating in the state initiative, result in more efficient delivery of health services to Medicare and Medicaid beneficiaries? If so, what features facilitate more efficient delivery of health care services and what outcomes result from these efficiency improvements?				

(continued)

Substantive area research questions	Methods	Data sources
<i>Quality of Care, Patient Safety, and Health Outcomes</i>		
<p>17. Do features of the state initiative, or features of the PCMH practices or community health teams participating in the state initiative, result in:</p> <p>18. (a) Safer delivery of health services to Medicare and Medicaid beneficiaries? If so, what features facilitate safer delivery of health care services and what outcomes result from these safety improvements?</p> <p>19. (b) Better quality of care provided to Medicare and Medicaid beneficiaries? If so, what features facilitate better quality of care and what outcomes result from these quality improvements?</p> <p>20. (c) Improved adherence to evidence-based guidelines? If so, what features facilitate improved compliance and what outcomes result from these improvements?</p> <p>21. (d) Health outcomes of Medicare and Medicaid beneficiaries? If changes occurred, for which health outcomes were these effects seen?</p>	<ul style="list-style-type: none"> • Within-state univariate, bivariate, and multivariate quantitative analyses of adherence to evidence-based measures using claims data <ul style="list-style-type: none"> – To the extent that clinical data are available, analyses of achievement of control will be evaluated. – To the extent that state-level reporting data are available, we will report additional non-claims-based quality of care measures. • Within-state univariate, bivariate, and multivariate quantitative analyses of health outcomes as measured by ambulatory care sensitive conditions (or “composite prevention quality indicators”) avoidance of serious medical eve • Within-state qualitative analysis using case study methods and beneficiary focus groups and semi-structured interviews with providers to assess beneficiaries’ and providers’ perceptions of changes in care quality and patient safety • Within-state quantitative analysis of practice transformation activities from practice transformation questionnaire and PCMH recognition surveys to assess changes in quality of care and patient safety features of the practice 	<ul style="list-style-type: none"> • Information obtained from semi-structured interviews with participating practices, CHTs, and other relevant clinical staff • PCMH practice recognition surveys • Practice transformation questionnaire • Focus groups with beneficiaries • State-level reporting data, as available (including clinical quality measures) • Practice reported clinical data, as available • Medicare and Medicaid claims data • Medicare EDB and Medicaid eligibility files • State-level variables • Practice transformation-level variables

(continued)

Substantive area research questions	Methods	Data sources
<i>Access to Care and Coordination of Care</i>		
22. Do features of the state initiative, or features of the PCMH practices or community health teams participating in the state initiative, result in:	<ul style="list-style-type: none"> • Within-state qualitative analysis using case study methods and semi-structured interviews with providers and key informant interviews to assess practice transformation activities and state initiative features (such as community health teams) designed to improve access and coordination of care 	<ul style="list-style-type: none"> • Information obtained from semi-structured interviews with participating practices, CHTs, and other relevant clinical staff
23. (a) More timely delivery of health services to Medicare and Medicaid beneficiaries? If so, what features facilitate more timely health care delivery and what outcomes result from these improvements?	<ul style="list-style-type: none"> • Within-state qualitative analysis using case study methods and beneficiary focus groups to assess beneficiaries' perceptions of changes in access and coordination of care 	<ul style="list-style-type: none"> • Key informant interviews conducted through telephone calls and in-person site visits with state officials and program staff
24. (b) Better or enhanced access to Medicare and Medicaid beneficiaries' PCMH provider? If so, what features facilitate better or enhanced access and what outcomes result from these improvements?	<ul style="list-style-type: none"> • Within-state univariate, bivariate, and multivariate quantitative analyses of beneficiary survey data 	<ul style="list-style-type: none"> • Practice transformation questionnaire
25. (c) Better coordination of care for Medicare and Medicaid beneficiaries? If so, what features make health care delivery better coordinated and what outcomes result from this better coordinated care?	<ul style="list-style-type: none"> • Within-state univariate, bivariate, and multivariate quantitative analyses of access and coordination of care using claims data: <ul style="list-style-type: none"> – Visit rates and expenditures by primary care physicians and specialists – Emergency room visit rate and expenditures – Hospital admission rate and expenditures – Follow-up visit within 14 days after hospitalization – 30-day readmission rate – Percentage of discharges with associated claim for coordination and transition services – Continuity of care index 	<ul style="list-style-type: none"> • State-level reporting data, as available
26. (d) Improved continuity of care for Medicare and Medicaid beneficiaries? If so, what features facilitate improvements in care continuity and what outcomes result from these continuity improvements?	<ul style="list-style-type: none"> • Within-state univariate, bivariate, and multivariate quantitative analyses of beneficiary survey data 	<ul style="list-style-type: none"> • Focus groups with beneficiaries • Beneficiary survey data • Medicare and Medicaid claims data • Medicare EDB and Medicaid eligibility files • MAPCP Demonstration Participation files • State-level variables

(continued)

Substantive area research questions	Methods	Data sources
<p><i>Access to Care and Coordination of Care (continued)</i></p>	<p>To the extent that state-level reporting data are available, we will report additional non-claims-based access and coordination of care measures.</p> <ul style="list-style-type: none"> <li>– Within-state quantitative analysis of practice transformation activities from practice transformation questionnaire to assess impact of practice features related to access and coordination of care on utilization and expenditures. <li>– Within-state quantitative analyses of impact of continuity of care index on utilization and expenditures. <li>– Within-state quantitative analyses of unique interventions related to access to care and continuity of care, e.g., nurse care manager activities and the impact of nurse care manager activities on utilization and expenditures (North Carolina) 	

(continued)

Substantive area research questions	Methods	Data sources
<i>Special Populations</i>		
27. Do features of the state initiative, or features of the PCMH practices or community health teams participating in the state initiative, result in:	<ul style="list-style-type: none"> • Within-state qualitative analysis using case study methods and beneficiary focus groups, semi-structured interviews with providers, and key informant interviews to assess challenges and perceptions of changes for the special populations across a range of domains. 	<ul style="list-style-type: none"> • Key informant interviews with state officials and community health teams, and other community resources that provide services to special populations
28. (a) Reductions in or elimination of health care disparities among Medicare and Medicaid beneficiaries? If so, what features facilitate these reductions, which populations (e.g., racial/ethnic, socioeconomic) or geographic regions (e.g., rural, urban) are affected, and what are impacts on these populations?	<ul style="list-style-type: none"> • Within-state quantitative analyses by including many of the special populations as independent or control variables (e.g., race, duals) or analyses conducted within special population subgroups (e.g., rural, SASH). More detailed analyses will include studies of dual eligibles, people with disabilities, people with multiple chronic illnesses, people with behavioral health problems, beneficiaries in rural areas, and children with asthma. 	<ul style="list-style-type: none"> • Semi-structured interviews with practices with heavy concentration of targeted special populations
29. (b) Reductions in or elimination of variations in utilization and/or expenditure patterns which are not attributable to differences in health status? If so, what features help minimize these variations, what health services or expenditures are affected, and how are they affected?	<ul style="list-style-type: none"> • Within-state quantitative analyses for specific populations as determined jointly by RTI and CMS. Likely outcomes include use and costs of total and ACSC hospitalizations and ER visits, readmissions, use of nursing homes, use of home- and community-based services, etc. 	<ul style="list-style-type: none"> • Beneficiary focus groups with special populations
30. (c) What are the impacts of Medicare's participation on dually-eligible beneficiaries and other key subpopulations (e.g., beneficiaries with multiple chronic conditions, beneficiaries with mental or behavioral conditions)?		<ul style="list-style-type: none"> • Beneficiary survey data, as available in sufficient sample sizes for the targeted special populations • Medicare and Medicaid claims data, CCW Timeline, MDS, and OASIS files • Medicare EDB and Medicaid eligibility files • MAPCP Demonstration Participation files • State-level variables • Practice transformation-level variables

(continued)

Substantive area research questions	Methods	Data sources	
<i>Beneficiary Experience with Care</i>			
31. Do features of the state initiative, or features of the PCMH practices or community health teams participating in the state initiative, result in: Better experiences with the health care system for Medicare and Medicaid beneficiaries and their families and caregivers? If so, what features facilitate improved care experiences and what outcomes result from these experiences?	<ul style="list-style-type: none"> • Within-state qualitative analyses of beneficiary experience with care through focus groups with some targeting of special populations. • Within-state quantitative analyses of Medicare and Medicaid beneficiary experience with care through analysis of PCMH-CAHPS surveys mailed to Medicare and Medicaid beneficiaries. Self-reported experience for 6 composite scales will be compared with national data deposited in the National CAHPS Benchmarking Database. 	<ul style="list-style-type: none"> • Focus groups with beneficiaries and caregivers • State-level variables • Practice transformation-level variables • Medicare beneficiary survey data • Medicare EDB and Medicaid eligibility files • MAPCP Demonstration Participation files 	
32. Are Medicare and Medicaid beneficiaries, their family members, and/or their caregivers able to participate more effectively in decisions concerning their care as a result of the state initiative? How does the state initiative facilitate this and what impacts are seen as a result of this more effective participation?			
33. Are Medicare and Medicaid beneficiaries better able to self-manage their health conditions or more likely to engage in healthy behaviors as a result of the state initiative? How does the state initiative facilitate this and what impacts are seen as a result?			
34. Which features of the state initiative (e.g., community-based resources, community health teams, SASH team) are used by participating Medicare and Medicaid beneficiaries and to what extent? What impacts resulted from their use? Which features were most useful? What features were not as helpful or need improvement?			

(continued)

Substantive area research questions	Methods	Data sources
<i>Effectiveness: Patterns of Utilization and Expenditures</i>		
<p>35. Do features of the state initiative, or features of the PCMH practices or community health teams participating in the state initiative, result in delivery of more effective health services to Medicare and Medicaid beneficiaries? If so, what features facilitate the delivery of more effective health care services and what outcomes result from these improvements?</p> <p>36. How do features of the state initiative affect utilization of services covered by Medicare and Medicaid? If changes in utilization patterns occurred, for what services were these effects seen and what features of the state initiative were most responsible for these changes?</p> <p>37. How do features of the state initiative affect expenditures for services covered by Medicare and Medicaid? If cost reductions or changes in cost patterns occurred, for which cost categories were these effects seen and what features of the state initiative were most responsible for these changes?</p>	<ul style="list-style-type: none"> • Initial descriptive analysis of Medicare and Medicaid baseline beneficiary characteristics and patterns of utilization and expenditures within each state for intervention beneficiaries • Within-state Medicare and Medicaid descriptive statistics and multivariate analyzing change over time in selected measures: <ul style="list-style-type: none"> – utilization and payments by major types of providers – rate of hospitalization, ER visits, and 30-day readmissions for all causes and potentially avoidable services – rate of follow-up within 2 weeks of hospital discharge for a medical condition – hospitalization for a serious medical event • Within-state testing of adequacy of 2-year baseline to capture Medicare pre-MAPCP Demonstration trends in expenditures and acute care utilization • Within-state decomposition of Medicare and Medicaid expenditures and gross savings into relative payment and utilization differences between PCMH and non-PCMH practices at baseline and changes over time by service categories (e.g., inpatient, outpatient, physician, SNF). • T-tests and incidence rate ratios (IRRs) of Medicare and Medicaid different rates of growth in both average payments per service (e.g., admission, office visit) and services per eligible beneficiary between participating PCMH and non-PCMH practices • T-tests and IRRs of Medicare and Medicaid differences in baseline payments per service and utilization rates between PCMH and non-PCMH practices 	<ul style="list-style-type: none"> • Medicare and Medicaid claims data • Medicare EDB and Medicaid eligibility files • MAPCP Demonstration Participation files • State-level variables • Practice transformation-level variables • Key Informant interviews • Review of secondary documents

(continued)

Substantive area research questions	Methods	Data sources
<i>Effectiveness: Patterns of Utilization and Expenditures (cont.)</i>		
<p>38. Is Medicare’s participation in the state initiative budget neutral? If not, why not? If so, how soon into the demonstration are cost savings seen?</p>	<ul style="list-style-type: none"> • Within-state multivariate analysis of gross savings and budget neutrality <ul style="list-style-type: none"> – Demonstration fee Effect – Medical Home Effect – Participation Effect 	<ul style="list-style-type: none"> • Medicare claims data • Medicare EDB files • MAPCP Demonstration Participation files
<i>Cross-State Qualitative Analyses</i>		
<p>39. What are the commonalities among the state initiatives? How do they differ from one another?</p>	<ul style="list-style-type: none"> • Cross-state qualitative analysis of state-level commonalities and differences <ul style="list-style-type: none"> – Traditional comparative case-study methods – Exploration of variation across states to support qualitative comparative analysis (QCA) 	<ul style="list-style-type: none"> • State-level variables • Beneficiary-level outcomes data
<p>40. What features of state initiatives are most responsible for the positive impacts seen?</p>		
<p>41. What are some commonalities among the high-performing state initiatives? For instance, do state initiatives with CHTs have better outcomes than those without CHTs? Do state initiatives with a greater state role have better outcomes than those with a lesser state role? Do state initiatives with shared savings as a component of the payment methodology have better outcomes than those that do not share savings with the practices?</p>		
<i>Cross-State Quantitative Analyses of Outcomes</i>		
<p>42. Does Medicare’s participation in state initiatives decrease overall utilization of, and expenditures for, services covered by Medicare and Medicaid? For what services are these reductions seen or increases seen?</p>	<ul style="list-style-type: none"> • Cross-state multivariate analysis of outcomes separately conducted for Medicare and Medicaid. Outcomes variables include: <ul style="list-style-type: none"> – Total expenditures – Expenditures for acute care hospitals – Expenditures for hospital outpatient and physician services – Rate of all-cause hospitalizations – Rate of all-cause ER visits – Medicare budget neutrality 	<ul style="list-style-type: none"> • Medicare claims data • Medicare EDB eligibility files • MAPCP Demonstration Participation files
<p>43. Is the demonstration budget neutral, that is, did any cost savings resulting from Medicare’s participation in the state initiatives exceed CMS’s total PCMH payments? What features of PCMH practices participating in the state initiative are responsible for the positive impacts?</p>		<ul style="list-style-type: none"> • State-level variables • Practice transformation-level variables

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APPENDIX 1B
MAPCP DEMONSTRATION MEDICARE BENEFICIARY ASSIGNMENT
ALGORITHMS BY STATE

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Maine

1. The look back period is the most recent 24 months for which claims are available.
2. Identify all Medicare beneficiaries who meet the following criteria as of the last day in the look back period:
 - Reside in Maine;
 - Have both Medicare Parts A & B;
 - Are covered under the traditional Medicare Fee-For-Service Program and are not enrolled in a Medicare Advantage or other Medicare health plan; and
 - Medicare is the primary payer;
3. Select all claims for beneficiaries identified in step 2 with the following qualifying CPT Codes in the look back period (most recent 24 months) where the provider specialty is internal medicine, general medicine, geriatric medicine, family medicine, nurse practitioner, or physician assistant or where the provider is an FQHC.
 - a. Check for the CPT codes on the physician file. Keep the date of visit and performing NPI from the physician claim.
 - b. **CAH/RHC identification.** Check for these CPT codes on the OPD file where the provider is a CAH or a RHC (1300–1399, 3400–3499, 3800–3999, or 8500–8599).
 - c. **FQHC**—check revenue codes for the visit codes listed below where the provider is an FQHC (facility type 7 and service type 1, 3, or 7)
 - d. Keep the date of visit, attending NPI, group NPI, and the provider ID from the OPD claim.
 - e. Combine the OPD and physician claims to create one file for beneficiary assignment.
 - f. Merge on specialty code from NPPES file (taxonomy code). Drop claims that don't match specialty listed above. This will remove claims from all non-specified specialties (e.g., psych FQHC providers).
4. Assign a beneficiary to the practice where s/he had the greatest number of qualifying claims. A practice shall be identified by the tax ID (physician) or provider ID (OPD).
5. If a beneficiary has an equal number of qualifying visits to more than one practice, assign the beneficiary to the one with the most recent visit.

6. This beneficiary assignment algorithm shall be run every 3 months with reports provided as designated in the CR to various entities within 15 business days of the end of the look back period and applicable to payments starting 30 days after the end of the look back period.

CPT-4 Code Description Summary

Evaluation and Management—Office or Other Outpatient Services

- New Patient: 99201–99205
- Established Patient: 99211–99215

Consultations—Office or Other Outpatient Consultations

- New or Established Patient: 99241–99245

Nursing Facility Services:

- E&M New/Established patient: 99304–99306
- Subsequent Nursing Facility Care: 99307–99310

Domiciliary, Rest Home (e.g., Boarding Home), or Custodial Care Service:

- Domiciliary or Rest Home Visit New Patient: 99324–99328
- Domiciliary or Rest Home Visit Established Patient: 99334–99337

Home Services

- New Patient: 99341–99345
- Established Patient: 99347–99350

Prolonged Services—Prolonged Physician Service With Direct (Face-to-Face) Patient Contact

- 99354 and 99355

Prolonged Services—Prolonged Physician Service Without Direct (Face-to-Face) Patient Contact

- 99358 and 99359

Preventive Medicine Services

- New Patient: 99381–99387
- Established Patient: 99391–99397

Medicare Covered Wellness Visits

- G0402—Initial Preventive Physical Exam (“Welcome to Medicare” visit)
- G0438—Annual wellness visit, first visit
- G0439—Annual wellness visit, subsequent visit

Counseling Risk Factor Reduction and Behavior Change Intervention

- New or Established Patient Preventive Medicine, Individual Counseling: 99401–99404
- New or Established Patient Behavior Change Interventions, Individual: 99406–99409
- New or Established Patient Preventive Medicine, Group Counseling: 99411–99412

Other Preventive Medicine Services—Administration and Interpretation:

- 99420

Other Preventive Medicine Services—Unlisted preventive:

- 99429

Federally Qualified Health Center (FQHC) —Global Visit (billed as a revenue code on an institutional claim form)

- 0521 = Clinic visit by member to RHC/FQHC;
 - 0522 = Home visit by RHC/FQHC practitioner
-

Michigan

1. The look back period shall be up to 24 months based on the presence of claims for a given beneficiary (See tiers below under #3).
2. Identify all Medicare beneficiaries who meet the following criteria as of the last day in the look back period:
 - Reside in Michigan;
 - Have both Medicare Parts A & B;
 - Are covered under the traditional Medicare Fee-For-Service Program and are not enrolled in a Medicare Advantage or other Medicare health plan;
 - Medicare is the primary payer;
3. A 5-step or 5-tiered process will be used for assigning beneficiaries to participating providers
 - Tier 1—Select all claims in the most recent 12 months of the look back period for beneficiaries identified in step 2 with the “Base E & M Office Visit Codes” listed below, where the provider specialty is internal medicine, general medicine, geriatric medicine, family medicine, or pediatrics.
 - a. Check for the CPT codes on the physician file. Keep the date of visit and performing NPI from the physician claim.
 - b. **CAH/RHC identification.** Check for these CPT codes on the OPD file where the provider is a CAH or a RHC (1300–1399, 3400–3499, 3800–3999, or 8500–8599).
 - c. **FQHC**—check revenue codes for the visit codes listed below where the provider is an FQHC (facility type 7 and service type 1, 3, or 7)
 - d. Keep the date of visit, attending NPI, group NPI, and the provider ID from the OPD claim.
 - e. Combine the OPD and physician claims to create one file for beneficiary assignment.
 - f. Merge on specialty code from NPPES file (taxonomy code). Drop claims that don’t match specialty listed above. This will remove claims from all non-specified specialties (e.g., psych FQHC providers).
 - Assign a beneficiary to the individual provider with whom the beneficiary had the greatest number of qualifying claims. A provider shall be identified and defined by the tax ID (physician) or provider ID (OPD).
 - If a beneficiary has an equal number of qualifying claims to more than one provider, assign the beneficiary to the one with the most recent visit.

- Tier 2—If a beneficiary does not have any claims during the most recent 12-month period, extend the look back period to 18 months and assign the beneficiary to the provider based on the same rules in Tier 1 above.
 - Tier 3—If a beneficiary does not have any claims during the most recent 18-month period, extend the look back period to 24 months and assign the beneficiary to the provider based on the same rules in Tier 1 above.
 - Tier 4—If a beneficiary meeting the criteria in step 2 is still not assigned to a provider, select all claims in the most recent 12 months of the look back period for beneficiaries identified in step 2 with, in addition to the “Base E & M Office Visit Codes” listed above, the inclusion of procedure codes for consultations, preventive counseling, and immunizations where the provider specialty is internal medicine, general medicine, geriatric medicine, family medicine, or pediatrics.
 - Tier 5—If a beneficiary meeting the criteria in step 2 is still not assigned to a provider, select all claims meeting the criteria for Tier 4 but for the most recent 18 months of the look back period.
 - Beneficiaries not assigned after progressing through the 5 tiers described above will not be assigned to any provider.
4. This beneficiary assignment algorithm shall be run every 3 months with reports provided as designated in the CR to various entities within 60 days of the end of the look back period and applicable to payments starting 90 days after the end of the look back period. The only exception to this shall be the first period of the demonstration.

Qualifying CPT Codes	
Base E&M Office Visit Codes	99201–99205 99211–99215
Medicare Covered Wellness Visits	G0402—Initial Preventive Physical Exam (“Welcome to Medicare” visit) G0438—Annual wellness visit, first visit G0439—Annual wellness visit, subsequent visit
FQHC Global Visit Code (from institutional claim form)	Revenue codes: 0521 = Clinic visit by member to RHC/FQHC; 0522 = Home visit by RHC/FQHC practitioner;

Qualifying CPT Codes	
Office Visit Preventive	99381–99387 99391–99397 99401–99404 99420 99429
Consultations	99241–99245
Immunizations	G0008, G0009, G0010

Minnesota

The Minnesota Health Care Home (HCH) initiative is located in 24 Minnesota counties from which intervention group beneficiaries are identified from participating HCHs. Comparison group beneficiaries are drawn from the same counties. Demonstration staff requested that four counties in the southeast corner of the state counties (Fillmore, Houston, Olmstead, and Winona) be excluded from the evaluation because they included the Gunderson health system, which was participating in another demonstration.

Minnesota is one of two MAPCP Demonstration states that does not base PCMH status on NCQA PPC-PCMH recognition. Instead, it relies on a state-sponsored HCH certification program. Further, Minnesota is the only MAPCP Demonstration state that does not use a claims-based attribution algorithm for beneficiary assignment and subsequent billing for MAPCP Demonstration fees by CMS. Rather, Minnesota depends upon the individual HCHs to submit monthly a claim for HCH services each month for each eligible patient. Because few practices have been submitting claims for HCH services, RTI developed an alternative assignment algorithm for purposes of monitoring and evaluation. To be included, beneficiaries must meet the following MAPCP Demonstration general criteria and Minnesota-specific criteria:

- Reside in Minnesota but NOT in Fillmore, Houston, Olmstead or Winona counties as identified by the zip code on the submitted claim
- Eligible for coverage under the Medicare fee-for-service program on the date of service billed
- Are not deceased
- Have both Medicare Part A & Part B
- Have Medicare as their primary insurer

The beneficiary assignment algorithm is similar to what is used by other states, in that it uses a 24 month look back and plurality of E&M visits. However, it is different in that it prioritizes assignment where MAPCP Demonstration payments are occurring, and further limits qualifying E&M visits to those that were performed by certified rendering providers.

Briefly, a two-pronged assignment algorithm was developed that assigns a Medicare FFS beneficiary to a participating HCH if (1) the participating HCH submitted a claim to Medicare for HCH services on their behalf, or (2) a Medicare FFS beneficiary was determined to be loyal to a participating HCH using the most common claims-based assignment algorithm used by the other seven MAPCP Demonstration initiatives, which is a 24-month look-back period and plurality of E&M visits to primary care providers. To operationalize this assignment algorithm,

1. We first determine whether a Medicare claim for HCH services (HCPCS codes S0280 or S0281) was submitted by an actively participating HCH⁴⁹. If so, then the NPI with the most HCH payments submitted for a beneficiary is linked to the participating HCH associated with that NPI and the beneficiary is assigned to that HCH.
2. For each remaining beneficiary that is not assigned in Step 1, we determine if the plurality of the beneficiary's E&M visits to primary care providers were billed by an actively participating HCH. When using Medicare claims data for beneficiary assignment, we use the TIN as the unit of assignment. Because one TIN can be used by many practices, several participating HCHs (and non-HCHs) may be grouped together under a single TIN. Thus, the number of active participating HCHs is less than the number of TINs represented in our evaluation sample. E&M codes: 99201–99215, 99304–99350, 99381–99387, 99391–99397, 99495–99496, G0402, G0438, G0439 and FQHC/RHC revenue codes 0521, 0522, 0524 and 0525.

Medicare FFS beneficiaries and participating HCHs are added quarterly to the intervention group based upon Step 1 above. Step 2 has occurred only once using data from the Minnesota provider file submitted January 2012, which includes 88 HCHs representing 15 unique TINs. RTI planned to rerun the assignment algorithm for the second annual report; however, as of the updating of this report it has been determined by CMS that ARC will perform a retrospective quarterly beneficiary attribution from the beginning of the MAPCP Demonstration in Minnesota. RTI will use this updated file for the second annual report and the eighth quarterly state report (QSR8).

⁴⁹ Quarterly, we receive a provider file listing HCHs and effective dates of participation in the initiative.

New York

1. The look back period is the most recent 24 months for which claims are available. The look-period shall generally end on either June 30th or December 31st of any given year.
2. Identify all Medicare beneficiaries who meet the following criteria as of the last day in the look back period:
 - Reside in New York State;
 - Have both Medicare Parts A & B;
 - Are covered under the traditional Medicare Fee-For-Service Program and are not enrolled in a Medicare Advantage or other Medicare health plan; and
 - Medicare is the primary payer;
3. Select all claims for beneficiaries identified in step 2 with qualifying CPT Codes in the look back period (most recent 24 months) where the provider specialty is internal medicine, general medicine, geriatric medicine, family medicine, nurse practitioner, or physician assistant or where the provider is an FQHC.
 - a. Check for the CPT codes on the physician file. Keep the date of visit and performing NPI from the physician claim.
 - b. **CAH/RHC identification.** Check for these CPT codes on the OPD file where the provider is a CAH or a RHC (1300–1399, 3400–3499, 3800–3999, or 8500–8599).
 - c. **FQHC**—check revenue codes for the visit codes listed below where the provider is an FQHC (facility type 7 and service type 1, 3, or 7)
 - d. Keep the date of visit, attending NPI, group NPI, and the provider ID from the OPD claim.
 - e. Combine the OPD and physician claims to create one file for beneficiary assignment.
 - f. Merge on specialty code from NPPES file (taxonomy code). Drop claims that don't match specialty listed above. This will remove claims from all non-specified specialties (e.g., psych FQHC providers).
4. Assign a beneficiary to the provider with whom the beneficiary had the greatest number of qualifying claims. A provider shall be identified and defined by the tax ID (physician) or provider ID (OPD).
5. If a beneficiary has an equal number of qualifying claims to more than one provider, assign the beneficiary first to the one with the most preventive office visit claims and, if that is equal, to the one with the most recent visit.

6. This beneficiary assignment algorithm shall be run every 3 months with reports provided as designated in the CR to various entities within 15 business days of the end of the look back period and applicable to payments starting 30 days after the end of the look back period.

Qualifying CPT Codes	
Office/Outpatient Visit E&M	99201–99205 99211–99215 99354–99355
Office Visit Preventive	99381–99387 99391–99397 99401–99404 99420, 99429
Medicare Covered Wellness Visits	G0402—Initial Preventive Physical Exam (“Welcome to Medicare” visit) G0438—Annual wellness visit, first visit G0439—Annual wellness visit, subsequent visit
Consultations	99241–99245
Nursing Home & Home Care	99304–99310 99315–99316, 99318 99324–99328 99332, 99334–99350 99374–99380,
Telemedicine	99444
FQHC Global Visit Code (from institutional claim form)	Revenue codes: 0521 = Clinic visit by member to RHC/FQHC; 0522 = Home visit by RHC/FQHC practitioner;

North Carolina

1. The look back period is the most recent 18 months for which claims are available.
2. Identify all Medicare beneficiaries who meet the following criteria as of the last day in the look back period:
 - Reside in North Carolina;
 - Not be dual eligible (i.e. not have both Medicare & Medicaid)
 - Have both Medicare Parts A & B;
 - Are covered under the traditional Medicare Fee-For-Service Program and are not enrolled in a Medicare Advantage or other Medicare health plan; and
 - Medicare is the primary payer;
3. Select all claims for beneficiaries identified in step 2 with qualifying CPT Codes in the look back period (most recent 18 months) where the provider specialty is internal medicine, general medicine, geriatric medicine, family medicine, nurse practitioner, or physician assistant or where the provider is an FQHC.
 - a. Check for the CPT codes on the physician file. Keep the date of visit and performing NPI from the physician claim.
 - b. **CAH/RHC identification.** Check for these CPT codes on the OPD file where the provider is a CAH or a RHC (1300–1399, 3400–3499, 3800–3999, or 8500–8599).
 - c. **FQHC**—check revenue codes for the visit codes listed below where the provider is an FQHC (facility type 7 and service type 1, 3, or 7)
 - d. Keep the date of visit, attending NPI, group NPI, and the provider ID from the OPD claim.
 - e. Combine the OPD and physician claims to create one file for beneficiary assignment.
 - f. Merge on specialty code from NPPES file (taxonomy code). Drop claims that don't match specialty listed above. This will remove claims from all non-specified specialties (e.g., psych FQHC providers).
4. Assign a beneficiary to the practice where s/he had the greatest number of qualifying claims. A practice shall be defined by the tax ID (physician) or provider ID (OPD):
5. If a beneficiary has an equal number of qualifying claims to more than one practice, assign the beneficiary to the one with the most recent visit.

6. This beneficiary assignment algorithm shall be run every 3 months with reports provided as designated in the CR to various entities within 15 business days of the end of the look back period and applicable to payments starting 30 days after the end of the look back period.

Qualifying CPT Codes

Office/Outpatient Visit E&M

- 99201–99205
- 99211–99215

Medicare Covered Wellness Visits

- G0402—Initial Preventive Physical Exam (“Welcome to Medicare” visit)
- G0438—Annual wellness visit, first visit
- G0439—Annual wellness visit, subsequent visit

Federally Qualified Health Center (FQHC)—Global Visit
(billed as a revenue code on an institutional claim form)

- 0521 = Clinic visit by member to RHC/FQHC;
 - 0522 = Home visit by RHC/FQHC practitioner
-

Pennsylvania

1. The look back period shall be the most recent 12–24 months for which claims are available. A tiered approach to beneficiary assignment shall be used.
2. Identify all Medicare beneficiaries who meet the following criteria as of the last day in the look back period:
 - Reside in Pennsylvania;
 - Have both Medicare Parts A & B;
 - Are covered under the traditional Medicare Fee-For-Service Program and are not enrolled in a Medicare Advantage or other Medicare health plan; and
 - Medicare is the primary payer;
3. A two-tiered approach to beneficiary assignment will be used:
 - Tier 1- Select all claims for beneficiaries identified in step 2 with the following qualifying CPT Codes in the most recent 12 months where the provider specialty is internal medicine, general medicine, geriatric medicine, family medicine, nurse practitioner, or physician assistant or where the provider is an FQHC.
 - a. Check for the CPT codes on the physician file. Keep the date of visit and performing NPI from the physician claim.
 - b. **CAH/RHC identification.** Check for these CPT codes on the OPD file where the provider is a CAH or a RHC (1300–1399, 3400–3499, 3800–3999, or 8500–8599).
 - c. **FQHC**—check revenue codes for the visit codes listed below where the provider is an FQHC (facility type 7 and service type 1, 3, or 7)
 - d. Keep the date of visit, attending NPI, group NPI, and the provider ID from the OPD claim.
 - e. Combine the OPD and physician claims to create one file for beneficiary assignment.
 - f. Merge on specialty code from NPPES file (taxonomy code). Drop claims that don't match specialty listed above. This will remove claims from all non-specified specialties (e.g., psych FQHC providers).
 - Tier 2—If no claims are identified for a beneficiary identified in Step 2, above, look at all claims in the past 24 months meeting the above criteria.

4. Assign a beneficiary to the practice where s/he had the greatest number of qualifying claims (either in the past 12 months as identified in Tier 1 or in the past 24 months as identified in Tier 2 if the beneficiary had no claims in the most recent 12 months). A practice shall be identified by the tax ID (physician) or provider ID (OPD).
5. If a beneficiary has an equal number of qualifying visits to more than one practice, assign the beneficiary to the one with the most recent visit.
6. This beneficiary assignment algorithm shall be run every 3 months with reports provided as designated in the CR to various entities within 15 business days of the end of the look back period and applicable to payments starting 30 days after the end of the look back period.

CPT-4 Code Description Summary

Evaluation and Management—Office or Other Outpatient Services

- New Patient: 99201–99205
- Established Patient: 99211–99215

Consultations—Office or Other Outpatient Consultations

- New or Established Patient: 99241–99245

Home Services

- New Patient: 99341–99345
- Established Patient: 99347–99350

Preventive Medicine Services

- New Patient: 99381–99387
- Established Patient: 99391–99397

Medicare Covered Wellness Visits

- G0402—Initial Preventive Physical Exam (“Welcome to Medicare” visit)
- G0438—Annual wellness visit, first visit
- G0439—Annual wellness visit, subsequent visit

Counseling Risk Factor Reduction and Behavior Change Intervention

- New or Established Patient Preventive Medicine, Individual Counseling: 99401–99404
- New or Established Patient Behavior Change Interventions, Individual; : 99406–99409
- New or Established Patient Preventive Medicine, Group Counseling: 99411–99412

Federally Qualified Health Center (FQHC)—Global Visit

(billed as a revenue code on an institutional claim form)

- 0521 = Clinic visit by member to RHC/FQHC;
 - 0522 = Home visit by RHC/FQHC practitioner
-

Rhode Island

1. The look back period is the most recent 24 months for which claims are available.
2. Identify all Medicare beneficiaries who meet the following criteria as of the last day in the look back period:
 - a. Reside in Rhode Island;
 - b. Have both Medicare Parts A & B;
 - c. Are covered under the traditional Medicare Fee-For-Service Program and are not enrolled in a Medicare Advantage or other Medicare health plan; and
 - d. Medicare is the primary payer;
3. Select all claims for beneficiaries identified in step 2 with the following qualifying CPT Codes in the look back period (most recent 24 months) where the provider specialty is internal medicine, general medicine, geriatric medicine, family medicine, nurse practitioner, or physician assistant or where the provider is an FQHC.
 - a. Check for the CPT codes on the physician file. Keep the date of visit and performing NPI from the physician claim.
 - b. **CAH/RHC identification.** Check for these CPT codes on the OPD file where the provider is a CAH or a RHC (1300–1399, 3400–3499, 3800–3999, or 8500–8599).
 - c. **FQHC**—check revenue codes for the visit codes listed below where the provider is an FQHC (facility type 7 and service type 1, 3, or 7)
 - d. Keep the date of visit, attending NPI, group NPI, and the provider ID from the OPD claim.
 - e. Combine the OPD and physician claims to create one file for beneficiary assignment.
 - f. Merge on specialty code from NPPES file (taxonomy code). Drop claims that don't match specialty listed above. This will remove claims from all non-specified specialties (e.g., psych FQHC providers).
4. Assign a beneficiary to the practice where s/he had the greatest number of qualifying claims. A practice shall be identified by the tax ID (physician) or provider ID (OPD).
5. If a beneficiary has an equal number of qualifying visits to more than one practice, assign the beneficiary to the one with the most recent visit.
6. This beneficiary assignment algorithm shall be run every 3 months with reports provided as designated in the CR to various entities within 15 business days of the end of the look back period and applicable to payments starting 30 days after the end of the look back period.

CPT-4 Code Description Summary

Evaluation and Management—Office or Other Outpatient Services

- New Patient: 99201–99205
- Established Patient: 99211–99215

Consultations—Office or Other Outpatient Consultations

- New or Established Patient: 99241–99245

Nursing Facility Services:

- E&M New/Established patient: 99304–99306
- Subsequent Nursing Facility Care: 99307–99310

Domiciliary, Rest Home (e.g., Boarding Home), or Custodial Care Service:

- Domiciliary or Rest Home Visit New Patient: 99324–99328
- Domiciliary or Rest Home Visit Established Patient: 99334–99337

Home Services

- New Patient: 99341–99345
- Established Patient: 99347–99350

Prolonged Services—Prolonged Physician Service With Direct (Face-to-Face) Patient Contact

- 99354 and 99355

Prolonged Services—Prolonged Physician Service Without Direct (Face-to-Face) Patient Contact

- 99358 and 99359

Preventive Medicine Services

- New Patient: 99381–99387
- Established Patient: 99391–99397

Medicare Covered Wellness Visits

- G0402—Initial Preventive Physical Exam (“Welcome to Medicare” visit)
- G0438—Annual wellness visit, first visit
- G0439—Annual wellness visit, subsequent visit

Counseling Risk Factor Reduction and Behavior Change Intervention

- New or Established Patient Preventive Medicine, Individual Counseling: 99401–99404
- New or Established Patient Behavior Change Interventions, Individual: 99406–99409
- New or Established Patient Preventive Medicine, Group Counseling: 99411–99412

Other Preventive Medicine Services—Administration and Interpretation:

- 99420

Other Preventive Medicine Services—Unlisted Preventive:

- 99429

Federally Qualified Health Center (FQHC)—Global Visit (billed as a revenue code on an institutional claim form)

- 0521 = Clinic visit by member to RHC/FQHC;
 - 0522 = Home visit by RHC/FQHC practitioner
-

Vermont

1. The look back period is the most recent 24 months for which claims are available.
2. Identify all Medicare beneficiaries who meet the following criteria as of the last day in the look back period:
 - a. Reside in Vermont;
 - b. Have both Medicare Parts A & B;
 - c. Are covered under the traditional Medicare Fee-For-Service Program and are not enrolled in a Medicare Advantage or other Medicare health plan; and
 - d. Medicare is the primary payer;
3. Select all claims for beneficiaries identified in step 2 with the following qualifying CPT Codes in the look back period (most recent 24 months) where the provider specialty is internal medicine, general medicine, geriatric medicine, family medicine, nurse practitioner, or physician assistant or where the provider is an FQHC.
 - a. Check for the CPT codes on the physician file. Keep the date of visit and performing NPI from the physician claim.
 - b. **CAH/RHC identification.** Check for these CPT codes on the OPD file where the provider is a CAH or a RHC (1300–1399, 3400–3499, 3800–3999, or 8500–8599).
 - c. **FQHC**—check revenue codes for the visit codes listed below where the provider is an FQHC (facility type 7 and service type 1, 3, or 7)
 - d. Keep the date of visit, attending NPI, group NPI, and the provider ID from the OPD claim.
 - e. Combine the OPD and physician claims to create one file for beneficiary assignment.
 - f. Merge on specialty code from NPPES file (taxonomy code). Drop claims that don't match specialty listed above. This will remove claims from all non-specified specialties (e.g., psych FQHC providers).
4. Assign a beneficiary to the practice where s/he had the greatest number of qualifying claims. A practice shall be identified by the tax ID (physician) or provider ID (OPD).
5. If a beneficiary has an equal number of qualifying visits to more than one practice, assign the beneficiary to the one with the most recent visit.
6. This beneficiary assignment algorithm shall be run every 3 months with reports provided as designated in the CR to various entities within 15 business days of the end of the look back period and applicable to payments starting 30 days after the end of the look back period.

CPT-4 Code Description Summary

Evaluation and Management - Office or Other Outpatient Services

- New Patient: 99201–99205
- Established Patient: 99211–99215

Consultations - Office or Other Outpatient Consultations

- New or Established Patient: 99241–99245

Nursing Facility Services:

- E & M New/Established patient: 99304–99306
- Subsequent Nursing Facility Care: 99307–99310

Domiciliary, Rest Home (e.g., Boarding Home), or Custodial Care Service:

- Domiciliary or Rest Home Visit New Patient: 99324–99328
- Domiciliary or Rest Home Visit Established Patient: 99334–99337

Home Services

- New Patient: 99341–99345
- Established Patient: 99347–99350

Prolonged Services—Prolonged Physician Service With Direct (Face-to-Face) Patient Contact

- 99354 and 99355

Prolonged Services—Prolonged Physician Service Without Direct (Face-to-Face) Patient Contact

- 99358 and 99359

Preventive Medicine Services

- New Patient: 99381–99387
- Established Patient: 99391–99397

Medicare Covered Wellness Visits

- G0402 - Initial Preventive Physical Exam (“Welcome to Medicare” visit)
- G0438—Annual wellness visit, first visit
- G0439—Annual wellness visit, subsequent visit

Counseling Risk Factor Reduction and Behavior Change Intervention

- New or Established Patient Preventive Medicine, Individual Counseling: 99401–99404
- New or Established Patient Behavior Change Interventions, Individual: 99406–99409
- New or Established Patient Preventive Medicine, Group Counseling: 99411–99412

Other Preventive Medicine Services—Administration and interpretation:

- 99420

Other Preventive Medicine Services—Unlisted preventive:

- 99429

Federally Qualified Health Center (FQHC)—Global Visit (billed as a revenue code on an institutional claim form)

- 0521 = Clinic visit by member to RHC/FQHC;
 - 0522 = Home visit by RHC/FQHC practitioner
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APPENDIX 1C
DETAILED MEASURE SPECIFICATIONS FOR MEDICARE BASELINE
DEMOGRAPHIC AND HEALTH STATUS CHARACTERISTICS AND PAYMENT
AND UTILIZATION MEASURES

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A. Demographic Characteristics

The following information is obtained from the Medicare Enrollment Data Base (EDB):

Beneficiary age at the time of first assignment to an intervention or comparison group

- Age < 65 (%)
- Ages 65–75 (%)
- Ages 76–85 (%)
- Age > 85 (%)
- Mean age

White (%)

Urban place of residence (%) – based on Zipcode of residence and the U.S. Census Bureau’s definition of Urban

Female (%)

Medicaid (%) – enrolled in Medicaid at any time the year prior to first assignment

Disabled (%) – based on Medicare’s original reason for entitlement

End-Stage Renal Disease (%) – at any time the year prior to first assignment

Institutionalized (%) – check for 2 nursing home visits (CPT codes 99324–99337) within 120 days using Medicare claims data for the 1 year prior to the first assignment date

B. Health Status Characteristics

Charlson Index—Array all the diagnoses from the dataset and search for each of the codes in the Charlson categories. If any are found, the category has a value of 1, else 0. Add weighted categories to create Charlson score.

AMI (Acute Myocardial Infarction) = 410, 412

CHF (Congestive Heart Failure) = 428

PVD (Peripheral Vascular Disease) = 441, 4439, 7854, V434

CVD (Cerebrovascular Disease) = 430, 431, 432, 433, 434, 435, 436, 437, 438

Dementia = 290

COPD (Chronic Pulmonary disease) = 490, 491, 492, 493, 494, 495, 496, 500, 501, 502, 503, 504, 505, or 5064

conn_tissuedz (Connective Tissue disease) = 710, 714, 725
 ulcer (Ulcer disease) = 531, 532, 533, 534
 liverdz_mild (Mild liver disease) = 571
 Diabetes (Diabetes without complications) = 249, 7915, 9623, 250, 2500, 2501, 2502,
 2503, V5867, 99657
 Hemiplegia = 342, 3441
 CRF (Moderate or severe renal disease) = 582, 583, 585, 586, 588
 DMwcc (Diabetes with complications) = 2504, 2505, 2506, 2507, 2508, 2509
 Neoplasia = 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154,
 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 170, 171, 172, 174,
 175, 176, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191,
 192, 193, 194, 195
 Leukemia = 205, 206, 207, 208
 Lymphoma = 200, 201, 202, 203, 204
 liverdz_modsev (Moderate or severe liver disease) = 5722, 5723, 5724, 5728, 4560,
 4561, 4562
 cancer_mets (Metastatic solid tumor) = 196, 197, 198, 199
 HIV = 042, 043, 044

CHARL=SUM(AMI CHF PVD CVD DEMENTIA COPD CONN_TISSUEDZ ULCER
 LIVERDZ_MILD DIABETES)+2*(HEMIPLEGIA+CRF+DMWCC+NEOPLASIA +
 LEUKEMIA+LYMPHOMA)+3*(LIVERDZ_MODSEV)+6*(CANCER_METS+HIV);

Co-morbid Conditions—Beneficiaries will be identified as having a comorbid condition if they have one inpatient claim with the clinical condition as the principal diagnosis or have two or more physician or outpatient department (OPD) claims for an E&M service (CPT codes 99201–99429) with an appropriate principal or secondary diagnosis. The physician and/or OPD claims have to occur on different days. Below is the list of ICD-9 diagnosis codes associated with the chronic conditions.

Heart failure = 4280
 Coronary artery disease = 41400–41407, 41000–41092, 4142, 4143, 4148, 4149, 4110–
 41189, 4130–4139, 412
 Other respiratory disease = 496, 492, 493, 494, 4912
 Diabetes without complications = 2500, 2490
 Diabetes with complications = 2501–2509, 2491–2499, 7915, 9623, V5867, 99657
 Essential hypertension = 401
 Valve disorders = 404
 Cardiomyopathy = 425

Acute and chronic renal disease = 2504, 4039, 5811, 5818, 5819, 5829, 5939, 5996,
7100, 7531, 7910, 582, 585, 58381

Renal failure = 584, 586

Peripheral vascular disease = 4439

Lipid metabolism disorders = 272

Cardiac dysrhythmias and conduction disorders = 427, 426

Dementias = 290

Strokes = 434, 433, 431, V1259

Chest pain = 7865

Urinary tract infection = 5990, 5999

Anemia= 285

Malaise and fatigue (including chronic fatigue syndrome) = 7807

Dizziness, syncope, and convulsions = 78002, 78009, 78093, 78097, 78039, 7802, 7804

Disorders of joint = 719

Hypothyroidism = 244

C. Medicare MAPCP Demonstration Payments and Medicare Expenditures

- **Medicare MAPCP Demonstration Fee Payments**—We remove MAPCP Demonstration service payments prior to calculating the expenditures by removing **Medicare** payments made to participating PCMHs fees associated with the following codes on the Part A or B claims.

Table 1-C-1
HCPCS Codes used for billing for medical home services for attributed Medicare beneficiaries

State	Procedure Code
Maine	G9008
Maine	G9008
	G9152
Minnesota	S0280
	S0281
Michigan	G9008
	G9153
	G9152
	G9151
New York	G9008
North Carolina	G9148
	G9149
	G9150
	G9152
Pennsylvania	G9008
	G9002
	G9005
	G9009
	G9010
Rhode Island	G9002
	G9005
	G9151
	G9152
Vermont	G9008
	G9152

- **Quarterly Medicare Expenditures**—Per beneficiary per month (PBPM) expenditure calculations include Medicare expenditures only, and exclude 3rd party and beneficiary liability payments. Medicare expenditure calculations are inclusive of disproportionate share and indirect medical education payments. The sum of per beneficiary per quarter (PBPQ) expenditures (PB PQs) is divided by 3 to create PBPMs.
 - a. **Total Medicare expenditures**—overall expenditure amounts from the physician, inpatient, skilled nursing facility (SNF), outpatient department (OPD), home

health (HH), hospice, and durable medical equipment (DME) files. Paid amount is used in all expenditure calculations.

- b. **Acute care inpatient hospitals**, including critical access hospitals - identified using provider numbers 0001-0879 (traditional acute care hospitals) and 1300–1399 (critical access hospitals).
- c. **Emergency room (ER) visits and observation stays**—facility and physician expenditures for ER visits and observation stays that do not lead to hospitalization. Facility expenditures for ER visits that do not lead to a hospitalization are identified in the OPD file using revenue center line item equal to 045X or 0981 (ER care) or 0762 (treatment or observation room). If the procedure code on the line item of the ER claims equals 70000 through 79999 or 80000 through 89999, we exclude these claims (thus excluding claims where only radiological or pathology/laboratory services were provided). Physician claims are identified on the physician file using BETOS = M3x.

D. Utilization

- **All-cause hospitalizations**—count of all admissions reported in the inpatient file for that quarter. Some records in the inpatient claims file may appear to be multiple admissions, but are in fact transfers between acute care facilities; these records are counted a single admission. Multiple claims for acute admissions from traditional acute care and critical access hospitals that represent transfers between hospitals are combined into a single record. identified using provider numbers 0001-0879 (traditional acute care hospitals) and 1300–1399 (critical access hospitals)
- **Emergency Room Visits**—count of all ER visits and includes visits that do not lead to a hospitalization and visits that do lead to a hospitalization. ER visits that do not lead to a hospitalization are identified on the Outpatient (OPD) claims file using revenue center line item equal to 045X or 0981 (emergency room care) or 0762 (treatment or observation room-observation room). If the procedure code on the line item of the ER claims is from 70000 through 79999 or 80000 through 89999, we exclude these claims (thus excluding claims where only radiological or pathology/laboratory services were provided). This is only applicable for OPD claims. Emergency room visits that led to a hospitalization are identified on the inpatient claims file using revenue center code values of 0450–0459, 0981, or 0762. We limit counts of ER visits to one per day.
- **Unplanned readmissions**—count of unplanned hospitalizations that occurred within 30 days following a live discharge. The number of live discharges includes beneficiaries with an index admission as follows:
 - For demo quarter 1, use 7/1/11–9/30/11 to identify the index admission and look through 10/31/11 for any readmission within 30 days of discharge
 - For demo quarter 2, use 10/1/11–12/31/11 to identify the index admission and look through 1/31/12 for any readmission within 30 days of discharge

- For demo quarter 3, use 1/1/12–3/31/12 to identify the index admission and look through 4/30/12 for any readmission within 30 days of discharge
- For demo quarter 4, use 4/1/12–6/30/12 to identify the index admission and look through 7/31/12 for any readmission within 30 days of discharge
- For demo quarter 5, use 7/1/12–9/30/12 to identify the index admission and look through 10/31/12 for any readmission within 30 days of discharge
- For demo quarter 6, use 10/1/12–12/31/12 to identify the index admission and look through 1/31/13 for any readmission within 30 days of discharge
- The number of live discharges does **not** include:
 - Deceased discharge status = 20, 41
 - Beneficiary does not retain eligibility for the demonstration for the full 30-day follow-up period:
 - Alive
 - Part A and B Medicare FFS eligibility
 - Medicare primary payer
 - Resident in the MAPCP Demonstration area
 - Includes acute care psychiatric claims in the creation of unplanned admissions, but does not include psychiatric unit or psychiatric facility claims
- The number of unplanned hospitalizations within 30 days of a live discharge does **not** include
 - Admissions for maintenance chemotherapy or rehabilitation
 - Readmissions identified as being potentially planned (see Appendix Table 1-C-2), and did not have a principal diagnosis identified as either acute or indicative of a complication of care (see Appendix Table 1-C-3).
 - To discriminate between planned and unplanned admissions, we used a list of inpatient procedures that may be considered “potentially planned”, developed by researchers at Yale (Horwitz et al., 2011). Using the AHRQ Clinical Classification Software (CCS), ICD-9 codes were collapsed into 231 mutually exclusive procedure categories. Next, a list of 33 CCS procedure code categories and five additional ICD-9 procedure codes were identified as indicative of a planned admission:

**Appendix Table 1-C-2
List of potentially planned procedures**

Procedure CCS	Description
1	Incision and excision of central nervous system
3	Laminectomy; excision intervertebral disc
10	Thyroidectomy; partial or complete
36	Lobectomy or pneumonectomy
43	Heart valve procedures
44	Coronary artery bypass graft
45	Percutaneous transluminal coronary angioplasty
48	Insertion; revision; replacement; removal of cardiac pacemaker or cardioverter/defibrillator
51	Endarterectomy; vessel of head and neck
52	Aortic resection; replacement or anastomosis
55	Peripheral vascular bypass
60	Embolectomy and endarterectomy of lower limbs
64	Bone marrow transplant
74	Gastrectomy; partial and total
78	Colorectal resection
84	Cholecystectomy and common duct exploration
85	Inguinal and femoral hernia repair
99	Other OR gastrointestinal therapeutic procedures
104	Nephrectomy; partial or complete
105	Kidney transplant
113	Transurethral resection of prostate
114	Open prostatectomy
119	Oophorectomy; unilateral and bilateral
124	Hysterectomy; abdominal and vaginal
152	Arthroplasty knee
153	Hip replacement; total and partial
154	Arthroplasty other than hip or knee
157	Amputation of lower extremity
158	Spinal fusion
166	Lumpectomy; quadrantectomy of breast
167	Mastectomy
176	Other organ transplantation
211	Therapeutic radiology for cancer treatment
ICD-9 codes	Description
30.4, 31.74, 34.6	Radical laryngectomy, revision of tracheostomy, scarification of pleura
94.26, 94.27	Electroshock therapy

- To determine which of these potentially planned readmissions were actually planned, we used the principal diagnosis to determine whether the readmission was an acute condition or complication of care. To identify those readmissions

that were for acute conditions or for complications of care, we used a list of ICD-9 codes developed by the Yale researchers. The AHRQ CCS was used to collapse the ICD-9 codes into 285 mutually exclusive condition categories. Next, a list of 34 CCS condition categories and were identified as indicative of an acute condition or complication of care:

Appendix Table 1-C-3
List of acute conditions and complications of care

Condition CCS	Definition
2	Septicemia (except in labor)
55	Fluid and electrolyte disorders
97	Peri-, endo-, and myocarditis; cardiomyopathy (except that caused by tuberculosis or sexually transmitted disease)
100	Acute myocardial infarction
105	Conduction disorders
106	Cardiac dysrhythmias
108	Congestive heart failure; nonhypertensive
109	Acute cerebrovascular disease
112	Transient cerebral ischemia
116	Aortic and peripheral arterial embolism or thrombosis
122	Pneumonia (except that caused by tuberculosis or sexually transmitted disease)
127	Chronic obstructive pulmonary disease and bronchiectasis
130	Pleurisy; pneumothorax; pulmonary collapse
131	Respiratory failure; insufficiency; arrest (adult)
139	Gastroduodenal ulcer (except hemorrhage)
145	Intestinal obstruction without hernia
146	Diverticulosis and diverticulitis
153	Gastrointestinal hemorrhage
157	Acute and unspecified renal failure
159	Urinary tract infections
160	Calculus of urinary tract
201	Infective arthritis and osteomyelitis (except that caused by tuberculosis or sexually transmitted disease)
207	Pathological fracture
225	Joint disorders and dislocations; trauma-related
226	Fracture of neck of femur (hip)
227	Spinal cord injury
229	Fracture of upper limb
230	Fracture of lower limb
231	Other fractures
232	Sprains and strains
233	Intracranial injury
237	Complication of device; implant or graft
238	Complications of surgical procedures or medical care
245	Syncope

- The number of unplanned hospitalizations within 30 days of a live discharge includes all readmissions that remained after applying the exclusion restrictions.

**APPENDIX 3A
NEW YORK COHORT 1 ESTIMATES OF EVALUATION OUTCOMES**

Table 3A-1

New York: Quarterly difference-in-differences estimates for PBPM Medicare payments during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned to MAPCP Demonstration PCMHs in July–December 2011 vs. beneficiaries first assigned to comparison PCMHs and non-PCMHs in July–December, 2011

Quarter	MAPCP Demonstration PCMH vs. CG PCMH			MAPCP Demonstration PCMH vs. CG Non-PCMH		
	Total	Acute Care	ER	Total	Acute Care	ER
Jul–Sep 2011	20.32 (19.67)	−0.64 (14.00)	8.95* (2.51)	4.52 (24.37)	−12.94 (16.26)	8.85* (2.53)
Oct–Dec 2011	−12.76 (18.26)	−5.56 (13.04)	8.19* (1.98)	−21.27 (26.13)	−18.30 (20.90)	6.33* (1.97)
Jan–Mar 2012	−3.67 (21.14)	−4.66 (15.92)	6.54* (2.09)	2.77 (21.07)	−5.16 (15.72)	6.15* (2.17)
Apr–Jun 2012	53.87* (19.79)	29.49* (15.57)	5.97* (2.25)	22.02 (20.85)	8.41 (15.51)	3.39 (2.49)
Average ¹	13.82 (11.73)	4.23 (8.71)	7.46* (1.40)	1.57 (14.59)	−7.36 (10.16)	6.24* (1.53)

NOTE: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room. The table contains the difference-in-differences (D-in-D) estimates for the first four quarters of the MAPCP Demonstration and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice or comparison practice during the first two quarters of the MAPCP Demonstration (July–December, 2011). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly D-in-D estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

Table 3A-2
New York: Quarterly difference-in-differences estimates for utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned to MAPCP Demonstration PCMHs in July–December 2011 vs. beneficiaries first assigned to comparison PCMHs and non-PCMHs in July–December 2011

Quarter	MAPCP Demonstration PCMH vs. CG PCMH		MAPCP Demonstration PCMH vs. CG Non-PCMH	
	All-cause hospitalizations	ER visits	All-cause hospitalizations	ER visits
Jul–Sep 2011	0 (2.4)	-1 (4.4)	1 (2.4)	4 (4.9)
Oct–Dec 2011	-2 (3.1)	0 (4.8)	1 (2.8)	6 (8.4)
Jan–Mar 2012	-2 (3.4)	-13* (6.8)	0 (3.1)	-7 (10.0)
Apr–Jun 2012	6 (3.9)	2 (5.8)	6* (3.1)	-2 (6.0)
Average ¹	1 (2.3)	-3 (3.3)	2 (1.9)	0 (5.7)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room. The table contains the difference-in-differences (D-in-D) estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice or comparison practice during the first two quarters of the MAPCP Demonstration (July–December 2011). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly D-in-D estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

APPENDIX 4A
RHODE ISLAND COHORT 1 ESTIMATES OF EVALUATION OUTCOMES

Table 4A-1

Rhode Island: Quarterly difference-in-differences estimates for PBPM Medicare payments during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in July–December 2011 to MAPCP Demonstration PCMHs, comparison PCMHs and non-PCMHs

Quarter	MAPCP Demonstration PCMH vs. CG PCMH			MAPCP Demonstration PCMH vs. CG Non-PCMH		
	Total (\$)	Acute Care (\$)	ER (\$)	Total (\$)	Acute Care (\$)	ER (\$)
Jul–Sep 2011	0.15 (38.45)	0.13 (24.24)	5.47 (3.59)	50.84* (25.43)	30.15* (15.62)	4.01* (2.1)
Oct–Dec 2011	–95.76* (45.73)	–99.81* (36.91)	2.37 (5.03)	6.6 (25.81)	–5.47 (14.52)	3.38 (3.02)
Jan–Mar 2012	24.7 (42.78)	17.33 (28.93)	–5.91 (4.65)	38.94 (25.76)	9.57 (18.12)	1.74 (2.07)
Apr–Jun 2012	59.75 (56.17)	30.99 (36.06)	–1.91 (4.05)	87.16* (43.13)	41.94 (29.08)	0.94 (2.83)
Average ¹	–5.02 (29.27)	–14.57 (20.19)	0.17 (2.52)	44.85* (17.09)	18.59 (11.96)	2.58 (1.88)

NOTE: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room. The table contains the difference-in-differences (D-in-D) estimates for the first four quarters of the MAPCP Demonstration and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice or comparison practice during the first two quarters of the MAPCP Demonstration (July–December 2011). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly D-in-D estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

Table 4A-2
Rhode Island: Quarterly demonstration effect estimates for utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in July–December 2011 to MAPCP Demonstration PCMHs, comparison PCMHs and non-PCMHs

Quarter	MAPCP Demonstration PCMH vs. CG PCMH		MAPCP Demonstration PCMH vs. CG Non-PCMH	
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)
Jul–Sep 2011	7 (5.4)	9 (8.1)	7* (4.4)	12 (8.8)
Oct–Dec 2011	-12 (7.8)	-11 (18.3)	1 (3.8)	1 (13.6)
Jan–Mar 2012	-2 (5.3)	-14 (14.8)	1 (4.4)	1 (10.4)
Apr–Jun 2012	3 (10.3)	2 (17.2)	7 (6.7)	3 (11.3)
Average ¹	-1 (4.6)	-3 (10.8)	4 (3.8)	5 (9.9)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room. The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice or comparison practice during the first two quarters of the MAPCP Demonstration (July–December 2011). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

APPENDIX 5A
VERMONT COHORT 1 ESTIMATES OF EVALUATION OUTCOMES

Table 5A-1

Vermont: Quarterly difference-in-differences estimates for PBPM Medicare payments during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in July–December 2011 to MAPCP Demonstration practices that did not participate in the pilot, comparison PCMHs and non-PCMHs

Quarter	MAPCP Demonstration Non-Pilot vs. CG PCMH			MAPCP Demonstration Non-Pilot vs. CG Non-PCMH		
	Total (\$)	Acute Care (\$)	ER (\$)	Total (\$)	Acute Care (\$)	ER (\$)
Jul–Sep 2011	–29.86 (29.45)	14.44 (19.18)	–0.80 (1.97)	–51.72* (25.52)	–21.79 (19.09)	–0.34 (2.15)
Oct–Dec 2011	–36.56 (31.30)	5.44 (22.90)	–1.41 (2.58)	–49.05 (32.20)	1.31 (21.65)	–0.58 (1.71)
Jan–Mar 2012	–14.04 (31.62)	32.53 (20.73)	–0.10 (2.40)	–46.12 (43.30)	–0.14 (31.67)	–0.01 (2.25)
Apr–Jun 2012	38.15* (22.11)	24.14* (13.03)	8.38* (2.35)	28.99 (27.26)	22.07 (18.79)	5.22* (2.73)
Average ¹	–11.53 (19.04)	18.86 (13.83)	1.40 (1.91)	–30.46 (19.50)	–0.09 (15.00)	1.00 (1.70)

NOTE: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room. The table contains the difference-in-differences (D-in-D) estimates for the first four quarters of the MAPCP Demonstration and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice that did not participate in the pilot or a comparison practice during the first two quarters of the MAPCP Demonstration (July–December 2011). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly D-in-D estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

Table 5A-2

Vermont: Quarterly demonstration effect estimates for utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in July–December 2011 to MAPCP Demonstration practices that did not participate in the pilot, comparison PCMHs and non-PCMHs

Quarter	MAPCP Demonstration Non-Pilot vs. CG PCMH		MAPCP Demonstration Non-Pilot vs. CG Non-PCMH	
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)
Jul–Sep 2011	7* (3.9)	11 (8.7)	4 (2.9)	10 (7.5)
Oct–Dec 2011	5 (5.2)	1 (6.4)	7 (4.5)	6 (6.2)
Jan–Mar 2012	10* (4.8)	15* (7.7)	7 (4.1)	19* (8.9)
Apr–Jun 2012	8* (3.1)	33* (9.3)	11* (3.2)	39* (8.9)
Average ¹	8* (3.8)	15* (6.2)	7* (3.0)	18* (6.4)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room. The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice that did not participate in the pilot or a comparison practice during the first two quarters of the MAPCP Demonstration (July–December 2011). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

Table 5A-3

Vermont: Quarterly difference-in-differences estimates for PBPM Medicare payments during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in July–December 2011 to MAPCP Demonstration practices that participated in the pilot, comparison PCMHs and non-PCMHs

Quarter	MAPCP Demonstration Pilot vs. CG PCMH			MAPCP Demonstration Pilot vs. CG Non-PCMH		
	Total (\$)	Acute Care (\$)	ER (\$)	Total (\$)	Acute Care (\$)	ER (\$)
Jul–Sep 2011	–22.78 (28.69)	17.60 (16.41)	–0.59 (1.37)	–47.34* (22.07)	–21.68 (16.76)	0.46 (1.55)
Oct–Dec 2011	–91.72* (30.91)	–47.80* (18.98)	–3.58 (2.34)	–106.90* (31.38)	–54.98* (16.91)	–2.16 (1.31)
Jan–Mar 2012	–91.09* (19.81)	–30.63* (11.83)	–2.80 (2.01)	–125.85* (36.52)	–66.32* (26.76)	–2.13 (1.97)
Apr–Jun 2012	22.06 (19.18)	21.97 (13.37)	1.17 (1.45)	10.30 (23.53)	16.96 (18.03)	–1.45 (1.88)
Average ¹	–46.57* (16.80)	–10.02 (10.62)	–1.48 (1.56)	–68.17* (16.14)	–31.97* (11.72)	–1.31 (1.29)

NOTE: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room. The table contains the difference-in-differences (D-in-D) estimates for the first four quarters of the MAPCP Demonstration and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice that participated in the pilot or a comparison practice during the first two quarters of the MAPCP Demonstration (July–December 2011). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly D-in-D estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

Table 5A-4

Vermont: Quarterly demonstration effect estimates for utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in July–December 2011 to MAPCP Demonstration practices that participated in the pilot, comparison PCMHs and non-PCMHs

Quarter	MAPCP Demonstration Pilot vs. CG PCMH		MAPCP Demonstration Pilot vs. CG Non-PCMH	
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)
Jul–Sep 2011	2 (2.7)	8 (7.7)	–1 (2.1)	6 (6.2)
Oct–Dec 2011	–4 (3.1)	–11 (6.8)	–3 (2.4)	–8 (6.3)
Jan–Mar 2012	2 (2.8)	4 (4.9)	–2 (2.7)	7 (6.7)
Apr–Jun 2012	5* (2.5)	16* (6.1)	7* (2.9)	20* (6.0)
Average ¹	1 (2.2)	4 (5.0)	0 (1.8)	6 (5.4)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room. The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice that participated in the pilot or a comparison practice during the first two quarters of the MAPCP Demonstration (July–December 2011). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

APPENDIX 6A
NORTH CAROLINA COHORT 1 ESTIMATES OF EVALUATION OUTCOMES

Table 6A-1

North Carolina: Quarterly difference-in-differences estimates for PBPM Medicare payments during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in October–December 2011 to MAPCP Demonstration PCMHs, comparison PCMHs and non-PCMHs

Quarter	MAPCP Demonstration PCMH vs. CG PCMH			MAPCP Demonstration PCMH vs. CG Non-PCMH		
	Total (\$)	Acute Care (\$)	ER (\$)	Total (\$)	Acute Care (\$)	ER (\$)
Oct–Dec 2011	45.61 (29.10)	25.46 (15.66)	3.65* (1.54)	47.09* (28.14)	29.43* (15.29)	1.45 (1.47)
Jan–Mar 2012	75.03* (40.14)	51.01* (22.04)	8.21* (2.23)	74.56* (35.53)	45.32* (19.78)	6.78* (2.19)
Apr–Jun 2012	67.57* (33.79)	28.21 (18.77)	8.61* (2.12)	65.01* (29.64)	25.22 (16.49)	5.55* (2.17)
Jul–Sep 2012	119.49* (28.20)	72.40* (18.09)	10.02* (2.51)	111.63* (25.56)	63.96* (18.01)	7.40* (2.51)
Average ¹	75.60* (28.11)	43.43* (14.43)	7.51* (1.76)	73.42* (25.16)	40.37* (13.14)	5.18* (1.72)

NOTE: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room. The table contains the difference-in-differences (D-in-D) estimates for the first four quarters of the MAPCP Demonstration and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice or comparison practice during the first quarter of the MAPCP Demonstration (October–December 2011). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly D-in-D estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

Table 6A-2

North Carolina: Quarterly demonstration effect estimates for utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in October–December 2011 to MAPCP Demonstration PCMHs, comparison PCMHs and non-PCMHs

Quarter	MAPCP Demonstration PCMH vs. CG PCMH		MAPCP Demonstration PCMH vs. CG Non-PCMH	
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)
Oct–Dec 2011	3 (3.9)	–5 (6.4)	4 (3.7)	–4 (5.3)
Jan–Mar 2012	4 (3.9)	4 (7.3)	3 (3.0)	7 (7.1)
Apr–Jun 2012	5 (3.7)	7 (7.5)	1 (3.4)	–4 (6.7)
Jul–Sep 2012	9* (4.8)	19* (8.8)	7* (3.6)	13* (7.1)
Average ¹	5* (3.0)	6 (5.6)	4 (2.5)	3 (5.0)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room. The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice or comparison practice during the first quarter of the MAPCP Demonstration (October–December 2011). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

APPENDIX 7A
MINNESOTA COHORT 1 ESTIMATES OF EVALUATION OUTCOMES

Table 7A-1

Minnesota: Quarterly difference-in-differences estimates for PBPM Medicare payments during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in October–December 2011 to MAPCP Demonstration practices that did not participate in the pilot, comparison PCMHs and non-PCMHs

Quarter	MAPCP Demonstration Non-Pilot vs. CG PCMH			MAPCP Demonstration Non-Pilot vs. CG Non-PCMH		
	Total (\$)	Acute Care (\$)	ER (\$)	Total (\$)	Acute Care (\$)	ER (\$)
Oct–Dec 2011	–5.93 (25.89)	4.75 (14.24)	–0.12 (0.98)	–9.05 (32.64)	–6.09 (21.25)	–2.31* (1.29)
Jan–Mar 2012	–31.76 (31.42)	–15.35 (17.49)	–2.48* (1.27)	6.68 (24.35)	13.43 (15.69)	–3.07 (1.89)
Apr–Jun 2012	–60.95* (22.12)	–40.01* (13.49)	–3.57* (1.41)	–19.41 (23.31)	–10.03 (15.88)	–4.30* (1.54)
Jul–Sep 2012	50.23* (26.10)	23.74* (11.27)	–2.73* (1.54)	80.36* (22.42)	63.54* (14.35)	–1.22 (2.05)
Average ¹	–12.79 (17.09)	–6.91 (9.64)	–2.19* (0.98)	13.49 (19.58)	14.32 (12.00)	–2.74* (0.99)

NOTE: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room. The table contains the difference-in-differences (D-in-D) estimates for the first four quarters of the MAPCP Demonstration and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice that did not participate in the pilot or a comparison practice during the first quarter of the MAPCP Demonstration (October–December 2011). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly D-in-D estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

Table 7A-2

Minnesota: Quarterly demonstration effect estimates for utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in October–December 2011 to MAPCP Demonstration practices that did not participate in the pilot, comparison PCMHs and non-PCMHs

Quarter	MAPCP Demonstration Non-Pilot vs. CG PCMH		MAPCP Demonstration Non-Pilot vs. CG Non-PCMH	
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)
Oct–Dec 2011	2 (3.1)	2 (5.2)	2 (3.7)	–5 (6.4)
Jan–Mar 2012	–1 (3.8)	0 (5.9)	2 (3.7)	–1 (9.1)
Apr–Jun 2012	–8* (4.3)	–12 (7.7)	–3 (4.2)	–14 (9.5)
Jul–Sep 2012	6 (3.6)	6 (10.1)	12* (3.3)	–3 (8.5)
Average ¹	0 (2.7)	–1 (6.0)	3 (2.8)	–6 (7.2)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room. The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice that did not participate in the pilot or a comparison practice during the first quarter of the MAPCP Demonstration (October–December 2011). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

Table 7A-3

Minnesota: Quarterly difference-in-differences estimates for PBPM Medicare payments during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in October–December 2011 to MAPCP Demonstration practices that participated in the pilot, comparison PCMHs and non-PCMHs

Quarter	MAPCP Demonstration Pilot vs. CG PCMH			MAPCP Demonstration Pilot vs. CG Non-PCMH		
	Total (\$)	Acute Care (\$)	ER (\$)	Total (\$)	Acute Care (\$)	ER (\$)
Oct–Dec 2011	–29.74 (19.46)	–8.68 (12.81)	–0.54 (1.49)	–45.16 (28.96)	–29.82 (19.75)	–2.44 (1.72)
Jan–Mar 2012	–22.79 (29.83)	–11.08 (17.14)	–1.53 (0.98)	3.32 (27.41)	7.36 (16.60)	–1.84 (1.65)
Apr–Jun 2012	–57.17* (21.86)	–40.08* (17.65)	–0.62 (1.68)	–27.92 (26.15)	–20.43 (19.02)	–1.06 (1.80)
Jul–Sep 2012	11.50 (30.11)	9.15 (14.33)	–1.65 (1.99)	29.17 (26.66)	38.58* (17.05)	0.12 (2.36)
Average ¹	–24.82* (13.34)	–12.72 (9.94)	–1.08 (1.27)	–10.83 (19.46)	–1.69 (12.16)	–1.33 (1.25)

NOTE: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room. The table contains the difference-in-differences (D-in-D) estimates for the first four quarters of the MAPCP Demonstration and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice that participated in the pilot or a comparison practice during the first quarter of the MAPCP Demonstration (October–December 2011). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly D-in-D estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

Table 7A-4
Minnesota: Quarterly demonstration effect estimates for utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in October–December 2011 to MAPCP Demonstration practices that participated in the pilot, comparison PCMHs and non-PCMHs

Quarter	MAPCP Demonstration Pilot vs. CG PCMH		MAPCP Demonstration Pilot vs. CG Non-PCMH	
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)
Oct–Dec 2011	–1 (2.1)	–3 (3.5)	–4 (3.1)	–11* (5.2)
Jan–Mar 2012	–4 (5.2)	–6 (5.3)	–3 (5.3)	–7 (9.2)
Apr–Jun 2012	–11* (4.1)	–14* (4.3)	–9* (4.3)	–16* (6.9)
Jul–Sep 2012	–2 (3.6)	–4 (9.8)	1 (3.1)	–13* (7.7)
Average ¹	–4 (2.8)	–7* (3.9)	–4 (3.0)	–11* (5.7)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room. The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice that participated in the pilot or a comparison practice during the first quarter of the MAPCP Demonstration (October–December 2011). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

**APPENDIX 8A
MAINE COHORT 1 ESTIMATES OF EVALUATION OUTCOMES**

Table 8A-1

Maine: Quarterly difference-in-differences estimates for PBPM Medicare payments during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in January–March 2012 to MAPCP Demonstration PCMHs, comparison PCMHs and non-PCMHs

Quarter	MAPCP Demonstration PCMH vs. CG PCMH			MAPCP Demonstration PCMH vs. CG Non-PCMH		
	Total (\$)	Acute Care (\$)	ER (\$)	Total (\$)	Acute Care (\$)	ER (\$)
Jan–Mar 2012	–65.46 (46.14)	–18.91 (24.18)	–4.57 (3.38)	–16.94 (38.55)	–0.54 (19.28)	–0.01 (2.34)
Apr–Jun 2012	–29.07 (55.89)	–3.08 (30.61)	–9.74* (4.11)	–62.96 (40.27)	–33.91 (22.77)	–2.14 (1.97)
Jul–Sep 2012	79.9 (53.3)	49.28* (17.52)	–2.97 (3.67)	18.47 (40.72)	13.98 (17.2)	3.04 (1.94)
Oct–Dec 2012	144.13* (42.28)	82.67* (14.1)	–1.83 (3.12)	53.57 (37.65)	40.54* (17.03)	2.77 (1.96)
Average ¹	27.19 (39.28)	24.98 (17.41)	–4.89 (3.09)	–4.06 (34.14)	3.78 (13.77)	0.82 (1.61)

NOTE: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room. The table contains the difference-in-differences (D-in-D) estimates for the first four quarters of the MAPCP Demonstration and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice or comparison practice during the first quarter of the MAPCP Demonstration (January–March 2012). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly D-in-D estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

Table 8A-2

Maine: Quarterly demonstration effect estimates for utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in January–March 2012 to MAPCP Demonstration PCMHs, comparison PCMHs and non-PCMHs

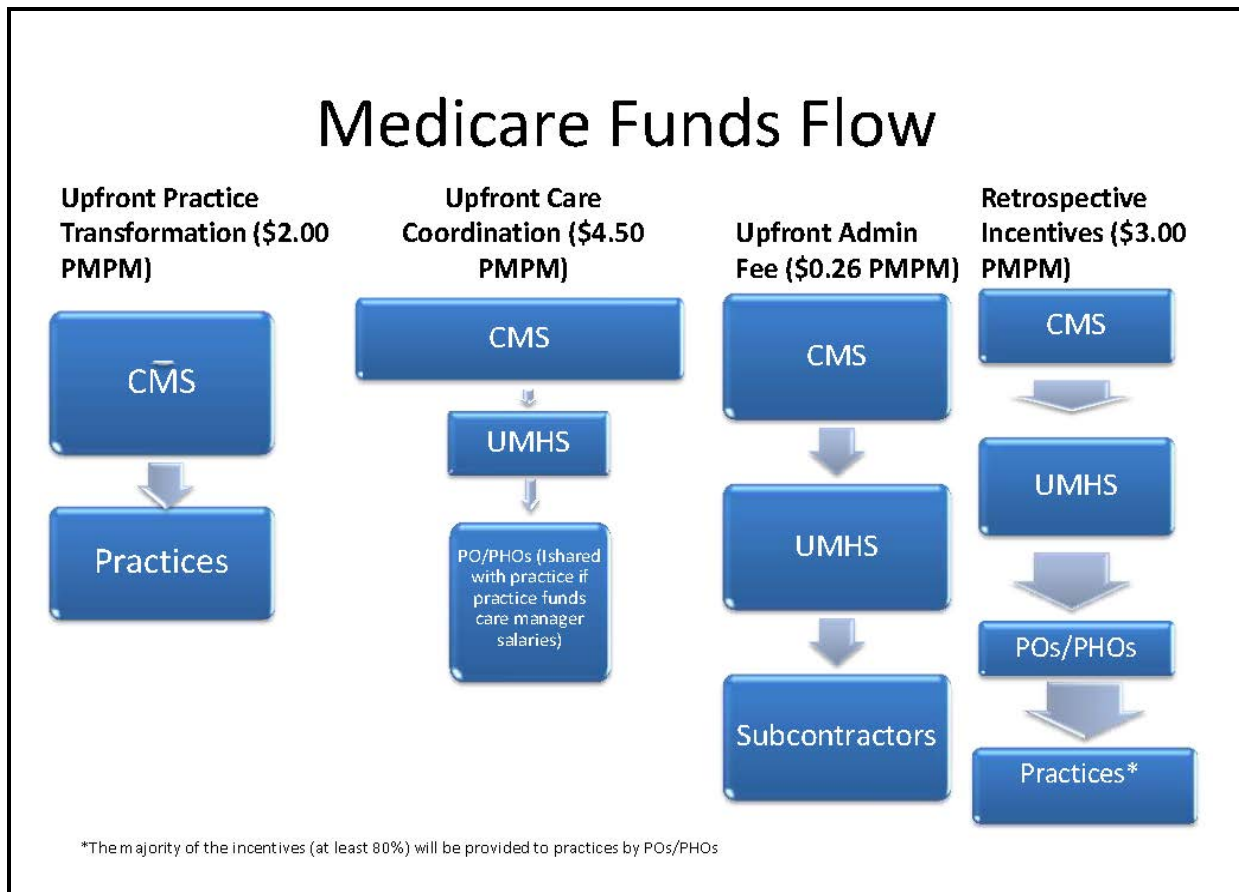
Quarter	MAPCP Demonstration PCMH vs. CG PCMH		MAPCP Demonstration PCMH vs. CG Non-PCMH	
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)
Jan–Mar 2012	–2 (4.4)	–9 (15.6)	–1 (4.1)	3 (6.4)
Apr–Jun 2012	5 (3.8)	–4 (7.8)	–3 (3.7)	–2 (6.9)
Jul–Sep 2012	11* (5.2)	8 (11.1)	2 (4.0)	14 (9.6)
Oct–Dec 2012	14* (5.0)	5 (7.9)	5 (4.4)	–2 (11.8)
Average ¹	7* (3.5)	0 (9.5)	0 (3.1)	3 (6.2)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room. The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice or comparison practice during the first quarter of the MAPCP Demonstration (January–March 2012). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

**APPENDIX 9A
MICHIGAN PRIMARY CARE TRANSFORMATION PROJECT PAYMENT FLOWS**



Medicaid Managed Care Funds Flow

Upfront Practice Transformation (\$1.50 PMPM)

Michigan Department of Community Health (MDCH)



Practices

Upfront Care Coordination (\$3.00 PMPM)

Michigan Department of Community Health



POs/PHOs



Practices (if practice funds care manager salaries)

Upfront Admin Fee (\$0.26 PMPM)

Michigan Department of Community Health



UMHS



Subcontractors

Retrospective Incentives (\$3.00 PMPM)

Michigan Department of Community Health



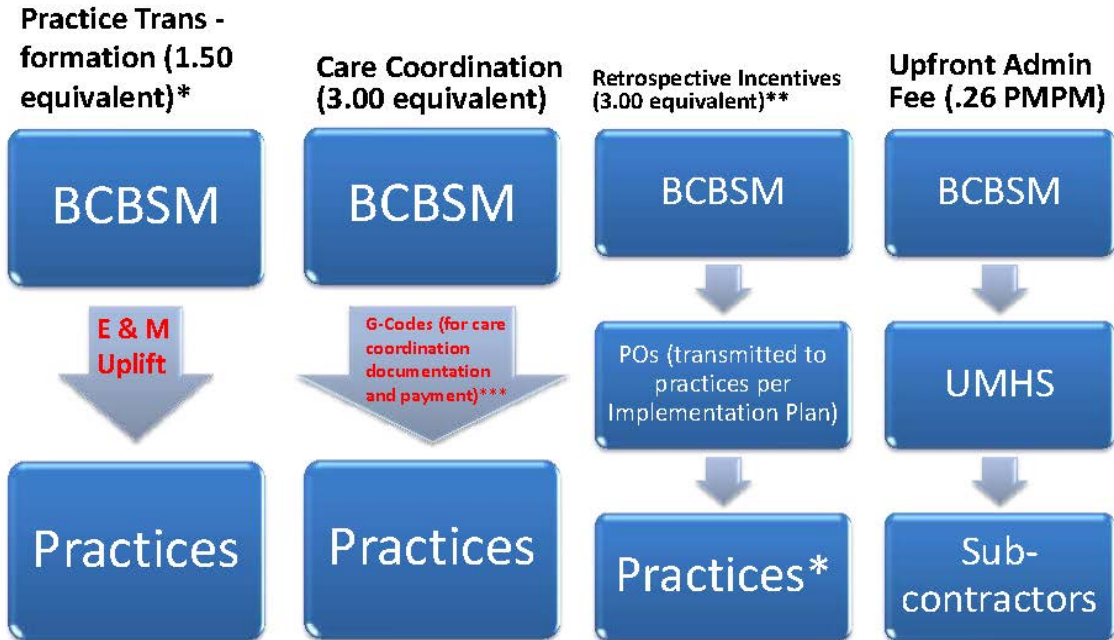
POs/PHOs



Practices*

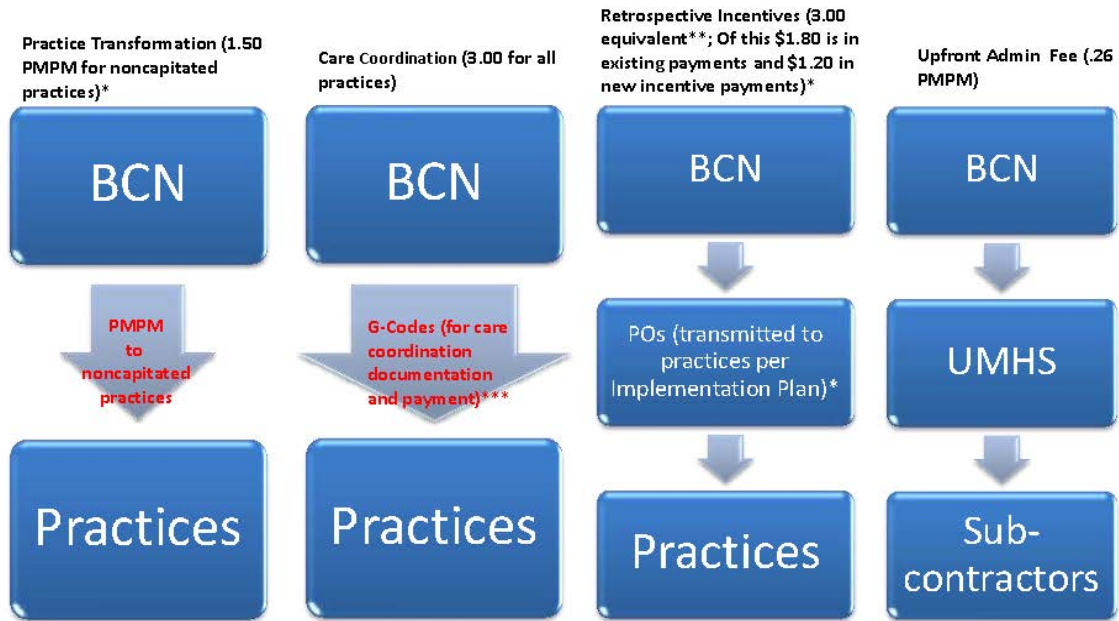
*The majority of the incentives will be provided to practices by POs/PHOs

BCBSM Funds Flow



*The majority of the incentives will be provided to practices by POs/PHOs; ** BCBSM has existing practice transformation payments in excess of 1.50 PMPM, as well as incentives exceeding \$3PMPM toward MIPCT goals; ***G Code implementation began April 2012; a PMPM payment was used from Jan-March.

BCN Funds Flow



* BCN has existing payments equivalent to (or exceeding) 1.50 PMPM for capitated groups for practice transformation, and pays at least \$1.80 PMPM equivalent for incentives aligned with MIPCT goals

**The majority of the incentives will be provided to practices by POs/PHOs

***Gcode implementation began in April 2012; a PMPM payment was used from January to March 2012

APPENDIX 9B
MICHIGAN COHORT 1 ESTIMATES OF EVALUATION OUTCOMES

Table 9B-1

Michigan: Quarterly difference-in-differences estimates for PBPM Medicare payments during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in January–March 2012 to MAPCP Demonstration PCMHs, comparison PCMHs and non-PCMHs

Quarter	MAPCP Demonstration PCMH vs. CG PCMH			MAPCP Demonstration PCMH vs. CG Non-PCMH		
	Total (\$)	Acute Care (\$)	ER (\$)	Total (\$)	Acute Care (\$)	ER (\$)
Jan–Mar 2012	–44.63 (46.31)	–25.97 (24.1)	–0.85 (1.37)	–16.02 (19.78)	–1.73 (11.38)	–1.34 (1.09)
Apr–Jun 2012	–77.83 (67.01)	–53.68 (32.98)	–1.44 (2.37)	–71.77* (15.94)	–39.22* (10.31)	–0.85 (1.04)
Jul–Sep 2012	–76.91* (44.7)	–38.92 (26.69)	–1.49 (1.14)	–58.71* (23.9)	–26.6* (14.9)	–0.66 (0.95)
Oct–Dec 2012	46.11 (41.01)	35.21* (18.27)	–0.49 (1.94)	43.17* (20.88)	29.95* (11.67)	0.89 (0.98)
Average ¹	–40.14 (44.75)	–22.2 (20.95)	–1.07 (1.35)	–27.06* (14.61)	–10.09 (7.72)	–0.54 (0.56)

NOTE: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room. The table contains the difference-in-differences (D-in-D) estimates for the first four quarters of the MAPCP Demonstration and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice or comparison practice during the first quarter of the MAPCP Demonstration (January–March 2012). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly D-in-D estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

Table 9B-2

Michigan: Quarterly demonstration effect estimates for utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in January–March 2012 to MAPCP Demonstration PCMHs, comparison PCMHs and non-PCMHs

Quarter	MAPCP Demonstration PCMH vs. CG PCMH		MAPCP Demonstration PCMH vs. CG Non-PCMH	
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)
Jan–Mar 2012	–7 (4.9)	–2 (6.5)	0 (1.8)	–3 (3.4)
Apr–Jun 2012	–8* (3.5)	–5 (5.3)	–7* (2.5)	–3 (6.9)
Jul–Sep 2012	–7 (4.9)	–12* (5.7)	–5* (2.9)	–3 (6.4)
Oct–Dec 2012	7* (2.7)	11 (6.6)	4* (2.2)	11 (7.9)
Average ¹	–4 (3.2)	–2 (4.3)	–2 (1.5)	0 (4.9)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room. The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice or comparison practice during the first quarter of the MAPCP Demonstration (January–March 2012). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

APPENDIX 10A
PENNSYLVANIA COHORT 1 ESTIMATES OF EVALUATION OUTCOMES

Table 10A-1

Pennsylvania: Quarterly difference-in-differences estimates for PBPM Medicare payments during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in January–March 2012 to MAPCP Demonstration PCMHs, comparison PCMHs and non-PCMHs

Quarter	MAPCP Demonstration PCMH vs. CG PCMH			MAPCP Demonstration PCMH vs. CG Non-PCMH		
	Total (\$)	Acute Care (\$)	ER (\$)	Total (\$)	Acute Care (\$)	ER (\$)
Jan–Mar 2012	19.74 (29.22)	1.15 (18.33)	1.07 (0.99)	–14.14 (19.67)	–7.53 (10.42)	–0.21 (0.86)
Apr–Jun 2012	83.82* (37.53)	36.71 (23.45)	–0.01 (0.95)	–18.10 (37.15)	–3.13 (14.20)	0.08 (0.81)
Jul–Sep 2012	38.62 (27.61)	9.38 (19.59)	–2.55 (1.64)	18.88 (48.51)	5.70 (17.86)	–0.85 (0.77)
Oct–Dec 2012	24.57 (27.84)	16.64 (17.10)	–1.89 (1.68)	76.05* (41.60)	40.16* (17.76)	2.18* (1.27)
Average ¹	41.83* (21.67)	15.88 (10.98)	–0.79 (0.81)	14.25 (31.19)	8.10 (10.95)	0.27 (0.49)

NOTE: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; PBPM = per beneficiary per month; ER = emergency room. The table contains the difference-in-differences (D-in-D) estimates for the first four quarters of the MAPCP Demonstration and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice or comparison practice during the first quarter of the MAPCP Demonstration (January–March 2012). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly D-in-D estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10

Table 10A-2
Pennsylvania: Quarterly demonstration effect estimates for utilization rates during the first year of the MAPCP Demonstration, comparing performance for Medicare beneficiaries first assigned in January–March 2012 to MAPCP Demonstration PCMHs, comparison PCMHs and non-PCMHs

Quarter	MAPCP Demonstration PCMH vs. CG PCMH		MAPCP Demonstration PCMH vs. CG Non-PCMH	
	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)	All-cause hospitalizations (per 1,000 beneficiaries)	ER visits (per 1,000 beneficiaries)
Jan–Mar 2012	5 (4.5)	15* (8.0)	1 (2.9)	–1 (4.2)
Apr–Jun 2012	10* (5.8)	12 (7.7)	2 (4.3)	0 (4.7)
Jul–Sep 2012	14* (6.6)	22* (10.2)	6 (9.0)	0 (5.1)
Oct–Dec 2012	2 (3.7)	6 (7.7)	5 (9.5)	7 (11.1)
Average ¹	8* (4.2)	14* (6.5)	4 (5.9)	1 (3.8)

NOTES: MAPCP = multi-payer advanced primary care practice; PCMH = patient-centered medical home; CG = comparison group; ER = emergency room. The table contains the demonstration effect estimates for utilization rates (per 1,000 Medicare beneficiaries) during the first four quarters of the MAPCP Demonstration, and their average over the first demonstration year. The sample is restricted to ‘cohort 1’ beneficiaries: those assigned to a MAPCP Demonstration practice or comparison practice during the first quarter of the MAPCP Demonstration (January–March 2012). Standard errors are given in parentheses below each estimate.

¹ This is the weighted average of the four quarterly demonstration effect estimates, where the weights are the numbers of eligible beneficiaries who remain assigned to a MAPCP Demonstration practice in each quarter.

* p<0.10