VERMONT Blueprint for Health

Smart choices. Powerful tools.

2009 Annual Report

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Department of Health
108 Cherry Street
Burlington, VT 05401

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Introduction

Since passing its 2006 landmark health reform legislation, Vermont has maintained an intensive commitment to comprehensive health reform that includes universal coverage, a novel delivery system built on a foundation of medical homes and community health teams, a focus on prevention across the continuum of public health and health care delivery, a statewide health information exchange, and a robust evaluation infrastructure to support ongoing improvement with quality and cost effectiveness as guiding principles. The essential ingredient has been bipartisan and visionary leadership provided by Governor James Douglas and the state General Assembly. From policy to implementation, Vermont's reforms are designed to provide access to high quality health care for all of its residents, and to improve control of health care costs.

Guiding legislation calls for a highly coordinated statewide approach to health, wellness, and disease prevention. Vermont's Blueprint for Health is leading this transformation with Integrated Health Services Pilots in three communities. These pilots include Patient Centered Medical Homes (PCMHs) supported by Community Health Teams (CHTs), and a health information technology infrastructure that supports guideline based care, population reporting, and health information exchange. The three pilots include a population of approximately 60,000 patients, or about 10% of Vermont's population. The clinical focus includes recommended health maintenance and prevention for all patients, and guideline based care for those with chronic disease. The CHTs include members such as nurse coordinators, social workers, and behavioral health counselors who provide support and work closely with clinicians and patients at a local level. Services include individual care coordination, outreach and population management, counseling, and close integration with other social and economic support services in the community. This high level of care incorporates strategies to enhance self management and is designed to integrate with community-wide prevention efforts guided by Public Health Specialists that are part of the CHT.

Underlying the Blueprint Integrated Health Services model is financial reform that aligns fiscal incentives with healthcare goals. With the exception of Medicare, all major insurers are participating in financial reform that includes two major components. First, primary care practices receive an enhanced per person per month (PPPM) payment based on the quality of care they provide. The payment is based on the practices official National Committee for Quality Assurance's Physician Practice Connections – Patient Centered Medical Home (NCQA PPC-PCMH) score and is in addition to their normal fee-for-service or other payments. Every six months practices are re-scored against the NCQA's nationally recognized quality indicators. This approach provides an incentive for ongoing quality improvement as payment is adjusted up or down based on 5 point incremental changes in the score. Payments can range from $1.20 to $2.39 PPPM, providing a substantive incentive for thorough outpatient care. In addition, insurers share the costs for the CHTs. Each of the 3 pilots has a CHT that includes 5 full time equivalents (FTEs) at a cost of $350,000 and is intended to provide care support for a general population of ~ 20,000 patients. The staffing mix for the CHT is designed by personnel in each community reflecting local needs. The team members form a nucleus that works closely to coordinate with other personnel and services in the community, establishing a functional CHT that is much larger than the 5 FTEs.

The Blueprint model is designed to be sustainable, scalable, and adaptable for all practice sizes, and from rural to urban settings. The foundation of medical homes and CHTs is supported by a health information and evaluation infrastructure. This infrastructure includes data sources to evaluate the clinical and financial impacts of the model. Routine reporting provides a basis for ongoing quality improvement and planning for statewide expansion. Financial sustainability is based on a reduction in unnecessary acute care, and insurers shifting their current expenditures from contracted disease management services to CHTs.

Planning for statewide expansion is underway and is contingent upon two key ingredients: 1. Commercial insurers and Vermont Medicaid need to agree to a plan for expanding payment reform that supports medical homes and community health teams across the state. 2. Medicare must be engaged; This step that has become more feasible with the September 2009 announcement by Health and Human Services Secretary Kathleen Sebelius that Medicare plans to participate with state led multi-insurer reform as part of an Advanced Model of Primary Care Demonstration Program.
As an agent of change, the Blueprint is charged with guiding a process that results in sustainable health reform, centered on the needs of patients and families. In effect, the program is intended to bring 'system-ness' to a health services world that is characterized by independent organizations, segregated services, poor communication within and across organizations, and funding streams that are often not aligned with health related goals.

The first stage of the program has been dedicated to building a sustainable foundation designed to improve health maintenance and prevention for the general population. Medical homes, community health teams, and a health information and evaluation infrastructure are all part of the foundation. Multi insurer payment reform is designed to support patient centered care, re-align incentives, and to reduce barriers for patients and families to receive well coordinated services.

This effort provides a foundation to build from. Payment reform that supports health teams and medical homes provides an infrastructure for more thorough assessments, and better coordination with the broader range of services and programs that are an essential part of overall health and well being. The next stage of the program will extend the model to include pediatric age groups and to integrate specialty services such as mental health, substance abuse, and targeted disease management programs (e.g. congestive heart failure). More formalized linkages will be established with social services, economic services, and public health services. An overarching emphasis will be placed on strategies and decision support systems that improve self management and help people to make healthy choices. Best practices and strategies from established programs will be adopted and incorporated as the program builds on tops of its base, an advanced model of primary care. Design principles will remain focused on a continuum of well coordinated and cost effective services for patients and families.

The remainder of this report will discuss details of the Blueprint model, the current scope of operations, and plans for program expansion. Details are also provided on how a public-private partnership, that combines investment and payment reform, can be used to improve healthcare delivery while helping to control the rate at which healthcare costs are growing. Details are also provided on the programs approach to building a novel

evaluation and reporting infrastructure that can be used to guide health reform on an ongoing basis in Vermont, and possibly in the context of a multi state collaboration. Lastly, this report will introduce a new analysis that provides a detailed examination of patterns of morbidity, health risks, healthcare delivery and resource utilization, and drivers of healthcare costs across Vermont. This report is designed to help prioritize and guide planning for strategies aimed at improving the health of the population and controlling healthcare costs. It is also designed to establish a method to objectively track change over time, and to guide ongoing adjustment of health reform programs and policy.

1.0 Blueprint Model

1.1 Design Goals: Vermont's Blueprint for Health is guiding a statewide systems based approach to reform health services. As an agent of change, the Blueprint program is designed to:

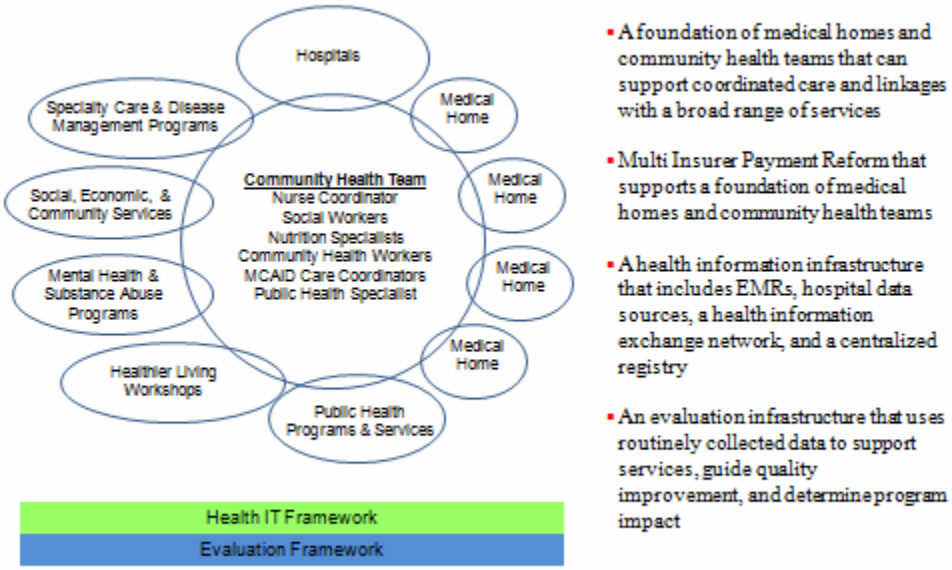
- Implement a model that improves access to well coordinated preventive health services, centered on the needs of patients and families.
- Establish a functional continuum of services across sectors that are commonly not well integrated (e.g. healthcare delivery, mental health & substance abuse services, social & economic services, public health services).
- Guide multi insurer payment reform that supports a well integrated approach to preventive health services, while reducing barriers for patients and families.
- Improve the rate that the general population receives recommended health assessments, adheres with preventive therapies, adapts effective self management skills, and engages in healthy lifestyles.
- Reduce avoidable complications from chronic conditions through improved disease control and prevention, and coordinated access to the range of support services that target common contributors to poorly controlled disease.
- Reduce the rate at which healthcare costs are growing and demonstrate financial sustainability thru multi-insurer payment reform and a public-private partnership that results in;
    - An investment in the human and technical infrastructure that is necessary for preventive health services to be delivered effectively
    - A shift in current healthcare expenditures to support local Community Health Teams instead of contracted disease management services and call centers.
    - A reduction in healthcare expenditures associated with avoidable hospitalizations and emergency care.

1.2 Advanced Model of Primary Care and Integrated Health Services: The Blueprint Integrated Health Services model provides a general population in a community access to guideline based preventive healthcare, and establishes a functional continuum so that patients and families have well coordinated access to additional social, economic, and health related services as necessary.

The model is based on several key components including;

- A foundation of Patient Centered Medical Homes (PCMHs) and Community Health Teams (CHTs)
- Multi insurer payment reform designed to support a foundation of Medical Homes and CHTs, and to incent guideline based well coordinated preventive care
- A systematic and sustainable approach to improving self management that is embedded in the foundation of medical homes and community health teams, and extends to community based and specialty care programs.
- An information technology infrastructure that supports a community oriented continuum of services, enhanced self management and decision making, and contribute to meeting national standards for the meaningful use of health information.
- An evaluation and reporting infrastructure that utilizes routinely populated data sources, and provides ready access to information that can evaluate program impact and guide ongoing quality improvement.

Figure 1. Blueprint Integrated Health Services Model



1.3 Medical Homes and Community Health Teams: In the Blueprint model, the patient centered medical home serves as the focal point for organizing an advanced model of primary care. Patient Centered Medical Homes are intended to provide accessible care with a whole person orientation, that is comprehensive, coordinated, and delivered in the context of family and community. Blueprint guided reform is designed to help primary care practices meet the goals of a PCMH, and deliver healthcare that is thorough and effective, while minimizing barriers for patients.

Payment reform, health information technology, and supportive training are intended to help clinicians redesign the way their practices operate. Changes in the medical home setting should lead to a different experience for both providers and patients. The

promise offered by these types of reforms is that clinicians have the support and staffing to be more thorough, and to provide patients with the level of attention that is necessary to help them engage in preventive treatment plans and lifestyles. Patients may experience office visits where they spend more time talking with staff completing health assessments, and less time in a waiting room. They may be routinely asked questions about recommended health screenings that were often overlooked in the past. This may include detailed assessments related to topics such as mental health, exercise, diet, and adherence with recommended treatment plans. Electronically tracked health records may show a patient how their health indicators have changed over time, and what recommended tests are missing for important health assessments. A patient may see how their blood pressure and cholesterol has trended upward over the last couple of years, at the same time that the amount of time they spend exercising has decreased, or that they have not had a mammogram or other recommended screening test. The discussion with the physician, who will have more time to spend with the patient, will be more thorough and based on patterns that were not evident when paper charts with cryptic notes were quickly reviewed during rushed office visits. A patient may notice that more time and attention is spent determining if they have met their own personal goals that were discussed at that last visit, and recorded into an electronic health record. They may leave the visit with a more complete understanding of why they shouldn't stop daily medication just because they are feeling better, and be surprised when they get a call a few days later to see if they understand which medications to use daily and which to use if they don't feel well. The promise of a medical home is that all patients receive this type of thorough care, whether it is for normal annual health assessments or care for a chronic condition. The Blueprint model has adopted national standards for the quality of care that patients should expect in a medical home, and designed payment reform that helps practices to meet those standards.

In the Blueprint program, participating practices are independently and objectively evaluated against the National Committee on Quality Assurance (NCQA) Physician Practice Connections – Patient Centered Medical Home (PPC-PCMH) standards. These provide a basis for assessing the quality of patient centered healthcare including; Access and Communication, Patient Tracking and Registry Functions, Care Management, Patient Self Management Support, Electronic Prescribing, Test Tracking, Referral Tracking, Performance Reporting and Improvement, and Advanced Electronic Communications. Medical home practices receive an enhanced payment based on the degree to which they meet NCQA standards. The payment reform is designed to incent guideline based care for a general population, and to support the staffing and operations that are needed to operate as an effective patient centered medical home (Payment Reform, section 1.4).

The goal is to have high quality primary care, where providers have the financial support, staffing, and information technology to conduct more thorough assessments and follow up. The NCQA PPC-PCMH standards provide a road map to help practices re-design the way they work. By objectively scoring practices against these standards, and linking payment to the scores, primary care practices have a structured pathway to guide re-organization. They are widely accepted and applied for rating the quality of primary care. However, it is still unclear if these scores will be associated with an increase in the proportion of patients that receive recommended assessments and treatment, or improve the health status of patients with chronic conditions. The Blueprint's evaluation plan is

designed to answer these questions, and to determine whether linking payment to NCQA PPC-PCMH scoring can be expected to produce desired results (Evaluation Infrastructure, section 1.7).
The use of NCQA PPC-PCMH standards to rate primary care practices, and payment reform to support medical homes, is a common approach in pilot programs across the country. The Blueprint model adds a new dimension with the introduction of Community Health Teams to provide support for patients and families who receive their care in a medical home. Another unique aspect is multi-insurer payment reform that supports both medical homes and community health teams.

The Community Health Team (CHT) is a group of qualified multi-disciplinary professionals intended to help a general population engage with preventive health practices, and to improve health outcomes. The teams include personnel such as nurses, social workers, behavioral health counselors, nutrition specialists, and public health specialists. They are local, work closely with medical home clinicians, and provide direct support to patients and families. Teams can be designed, scaled, and staffed based upon the needs of the population they serve, and to operate in urban, suburban, and rural settings.

An important design principle is that the CHT is intended to be a nimble entity, whose members can adjust their schedule and spend time in a particular clinical setting based on the size and needs of the population. Team members meet regularly to review strategies and make plans for improved coordination of services. The CHT is a functional unit whose services are not limited to a particular setting, organization, or sub-population.

The rationale for a multi-disciplinary CHT supporting a group of Medical Homes is based on the widely variable health outcomes that should be expected in a real world healthcare setting, and the complex set of factors that influence those outcomes (e.g. social, economic, cultural, behavioral, and biologic). Results from well controlled clinical studies consistently demonstrate highly variable health outcomes, even for a group of patients with similar demographics and a single health condition. Variable health outcomes are even more likely when care is delivered in a setting complicated by a more heterogeneous population, with a range of health conditions and risk factors, and the overlay of social, economic, and behavioral influences that are often minimized in a controlled clinical trial.

Supporting a group of medical homes, the CHT establishes a local community oriented model, where health team members can help to engage the general population in preventive healthcare, and facilitate linkages between vulnerable populations and appropriate support services (e.g. social & economic services, mental health services & substance abuse services, public health programs). This infrastructure provides local access to skilled personnel, coordinated referrals across independent organizations, support for improved self management, and the intensity of follow up that increases the likelihood that families and patients will engage with management plans and preventive behaviors.

The costs of the CHT are shared by all insurers as part of payment reform that invests in primary care and prevention (Payment Reform, section 1.4). The team members are

hired by an existing administrative entity in each community in order to avoid establishing new administrative layers and unnecessary costs. In Blueprint pilot communities, CHT members have been hired by hospitals, affiliated provider organizations, and Federally Qualified Health Centers (FQHCs). CHT members are dedicated to the outpatient setting, and to working across organizations and practices, regardless of the administrative entity that hires them.

Perhaps the most novel aspect of the Vermont Blueprint is the concept of the Community Health Team (CHT). Acknowledging that providing quality care to an individual person is an effort that requires a team approach, the Blueprint CHT has been created to do just that. These multi-disciplinary teams are based in the community they serve, are designed at that local level to meet the needs of the specific population, and are funded as a shared barrier-free resource as part of the Blueprint payment reform. The team interfaces with patients and families, primary care practices, specialty and ancillary practices, and local offices of and programs of public health and social services. The functional team includes all partners that are engaged with an individual, creating the environment for a truly holistic model of care. A summary of the various organizations is in Table 4.

CHT Structure, Roles and Partners: The structure of the 3 currently operational CHTs is shown below (Figure 2).

Legend for CHT Structure

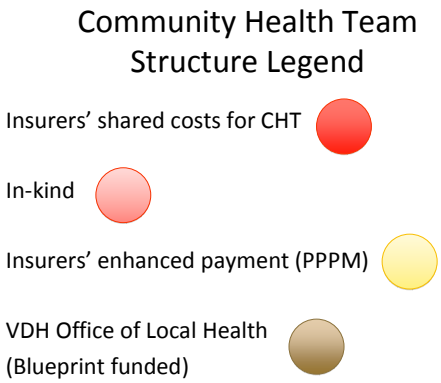


Figure 2a. Barre Hospital Service Area Community Health Team

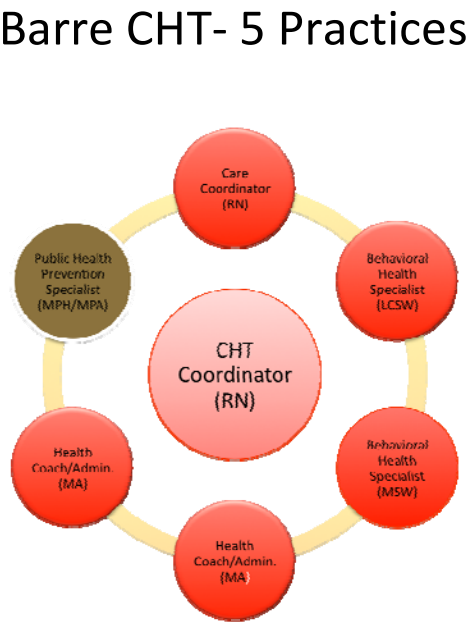


Figure 2b. Burlington Hospital Service Area Community Health Team

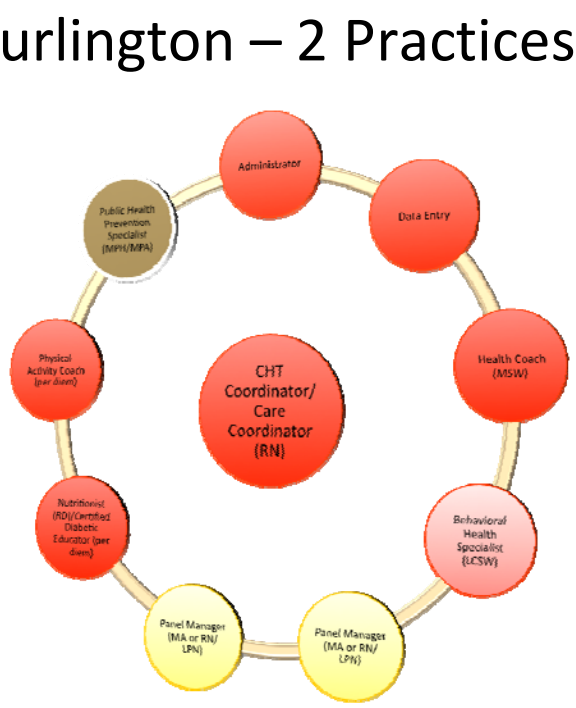
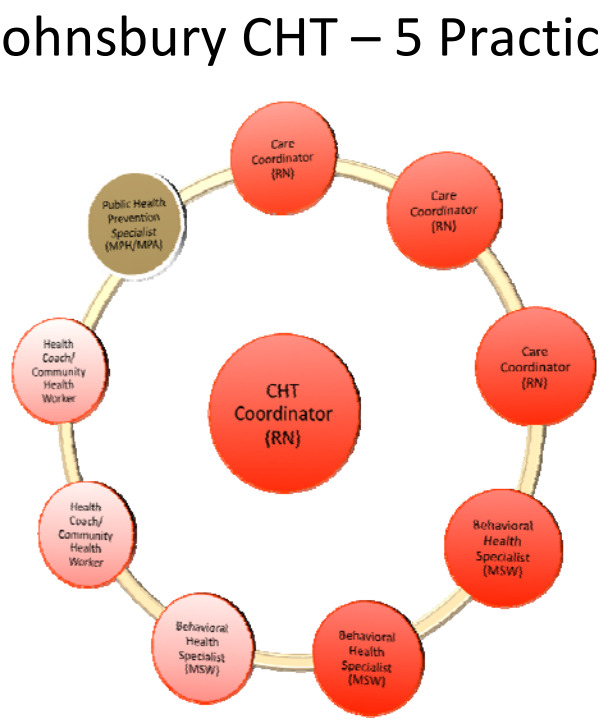


Figure 2c. St. Johnsbury Hospital Service Area Community Health Team



CHT Structure, Roles and Partners: The following sections describe the function of the various members of the teams and their interactions.

Care Coordination: All teams have an overall director, in each case an RN who has a supervisory role as well as direct clinical responsibilities. There are additional nurse care coordinators based at the clinical sites, either fulltime at the larger practices (10 or more PCPs) or splitting their time between smaller groups. Their job duties include but are not limited to:

1. Tracking of patients for overdue appointments, lab tests, eye exams etc.
2. Creation and monitoring of registry reports
3. Basic short term care management for complex patients
4. Following up with patients and pharmacies to ensure patients are filling and taking their medications as prescribed
5. Making, tracking and following up referrals for specialty care, diagnostic testing, health education, and social services
6. Following up with patients to facilitate self-management goals

Community Resource Workers: In St. Johnsbury, the Community Health Workers at Community Connections, located at and funded by the local hospital, connect people to services in the community, and can help with insurance applications, finding transportation, or child care. A Chronic Care Community Health Worker assists patients in following medical treatment plans, including going with them to medical visits.
In Burlington, these team members conduct a health assessment and screening, connect patients with community/financial resources, assist patients or a loved one with long-term care planning and work with other agencies to coordinate care.

Health Coaches: In St. Johnsbury, the community health worker provides hands on support to people with chronic conditions to reinforce the treatment plans from the primary care office or other health care professionals, and the patient's self-management goals. They may make home visits, and accompany patients to appointments. They assist patients in accessing opportunities for physical activity and provide coaching to help overcome barriers. They assist patients in stress reduction techniques. They help patients comply with prescription medication regimens, including setting up pill boxes and addressing financial barriers. In Burlington, they work with patients to provide guidance and tools for healthier living, such as keeping a food log and understanding nutrition labels, help develop strategies to manage specific conditions and provide coaching to help meet goals.

Behavioral Health Specialists: The CHT Behavioral Health specialists work in the primary care settings. This has proven to be a very successful mechanism, allowing fro rapid referrals, easy access to brief intervention, notably without the commonly occurring disincentive of having to seek help outside of a familiar setting and the pervasive stigma of seeking psychological or psychiatric care at all. In St. Johnsbury, Behavioral Health Specialists provide short-term, solution-focused therapy to patients (3 – 8 sessions, e.g. brief intervention and brief treatment). They refer to community based mental health clinicians for ongoing therapy, if needed. They work with the providers in the offices to identify patient needs through routine screening for depression and substance abuse, as well as medication evaluation.

In Burlington, they conduct a health assessment and mental health and/or substance use screening, identify barriers to meeting health care goals, help with coping, relaxation and self-care strategies as well as managing the symptoms of anxiety and depression.

Nutritionist/Certified Diabetic Educators: These nutrition professionals provide services on a per diem basis. They review individual patients' health assessment and screening results, provide nutrition information for specific health conditions, and diabetes education as appropriate.

Physical Activity Coach: This employee of the local YMCA provides physical activity assessments and coaching for patients on a per diem basis. He creates an individualized exercise plan for his clients. Patients have access to the Burlington area YMCAs to work with certified personal trainers and use these facilities at a reduced cost.

Administrative Support: These individuals support the daily functioning of the teams, arranging appointments, meetings and vital inter- and intra-organization communication. Several members do the direct entry of data into DocSite in practices that use paper medical records. One medical assistant in this position splits her time between data entry and health coaching.

Public Health Prevention Specialists: The public health specialists work with the CHT and the community coalitions to identify community-based initiatives that reduce the health risk behaviors most often encountered by the team. Prevention specialists focus on projects that impact the entire region or on systems that will fill gaps in individual services. In 2009, the prevention specialists in St. Johnsbury and Burlington completed

community health assessments. In Burlington the prevention specialist worked with the community health team to identify ways DocSite can be used to assist with community planning and to include questions regarding community supports on the patient intake forms.

CHT Utilization: In Burlington, 822 patients were engaged by the CHT (6% of 13,903 subjects); 66% were women, with a median age of 56 (range 18-98). Referrals were for: counseling regarding nutrition (54%), exercise (40%), diabetes (16%), mental health/substance abuse issues (35%); medication issues (2%); financial issues (15%); tobacco cessation (4%); or Alzheimer's support (1%). The median number of in-person visits was 2 (range 0-28; mean 3.4); 7.4% of patients were managed solely by phone. 28% were seen for behavioral health counseling. In St. Johnsbury, 2154 patients received CHT services (9.7% of 22,315 subjects); 64% women; median age 50 years, with 85% of visits in person. Predominant diagnoses included hypertension, diabetes and asthma. Patients were seen for health and dental access (insurance, transportation, disability, WIC, etc), housing, fuel or financial issues, palliative care, and others. 13% were seen for behavioral health counseling.

Provider Experience: Provider response to the CHT has been overwhelmingly positive. Here are some comments from individuals at pilot practices:

"The community health team has been a great addition to our practice. This team can spend the time to really get to know the patients, assess their barriers to improving their own health, establish reasonable goals and set up a plan on how to reach those goals. This is not something that I alone can accomplish in a simple office visit. We are seeing some very good outcomes.", Jennifer Gilwee, MD (Aesculapius Medical Center)

"The CHT has made it possible for me to get my patients linked to community resources in a seamless manner. Instead of trying to work with various agencies I can refer them to the CHT and let the CHT do the rest of the work. The patients benefit as their care is more coordinated and comprehensive and I benefit as this frees up time for myself (and my office) to concentrate on different tasks.", Sharon Fine, MD (Danville Health Center)

"Having access to the CHT removes the fear of asking a patient the simple open ended questions "so how are things". If the patient breaks into tears, or admits that things at home are chaotic, (that they can not afford their medications, or can not get to appointments due to lack of transportation or child care) I do not feel that I need to solve all of their social woes then and there by myself. I have a whole team to help. I can have them see Betsy, our behavioral health provider (counselor) within the week, or have Erica, our Chronic Care coordinator nurse come right in and help sort out which resources they need. It truly expands my ability to care for patients by helping to tear/take/break down social barriers that interfere with medical care.", Dana Kraus, MD (St. Johnsbury Family Health)

"The CHT has provided resources that allow me to help my patients take control of their own health and lifestyle choices and to make positive changes to improve how they feel today and to reduce their chances for premature illness in the future. The CHT has also provided my patients with psychosocial support that a solo private practice cannot afford to provide patients, including finding resources for counseling, obtaining health insurance

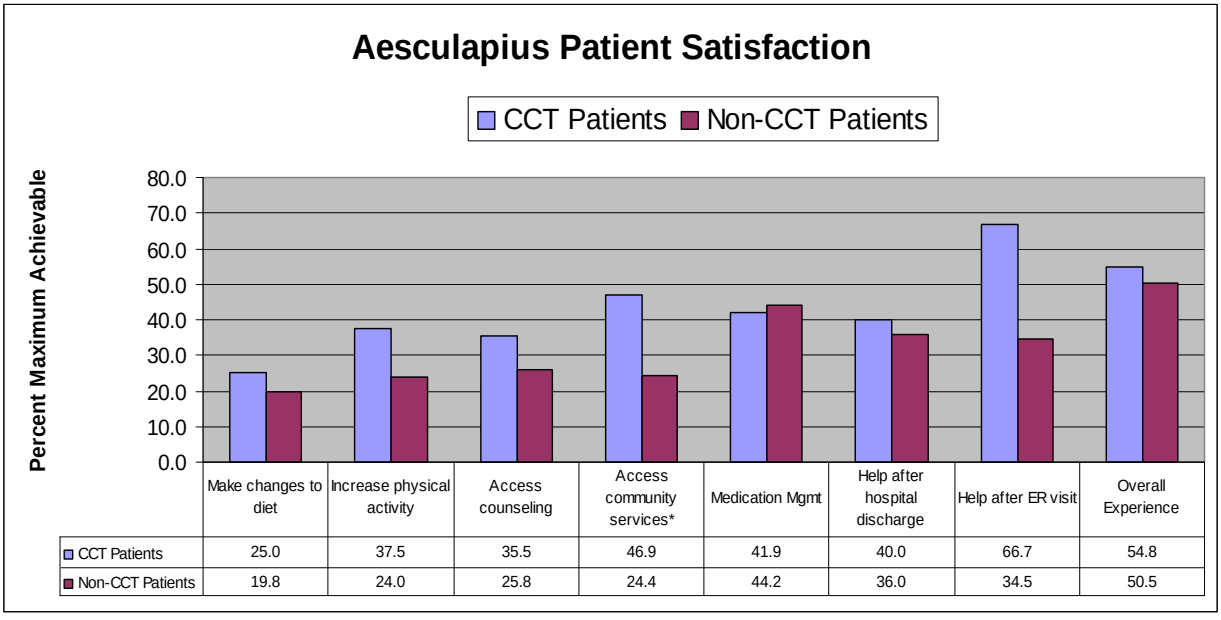
for the uninsured, and providing needed medications for patients without insurance. The medical home pilot has helped my practice to focus on quality issues in medical practice work processes, find areas that need improvement, and implement changes. It has also given me tools, like DocSite, that help me manage chronic conditions for a panel of patients, and improve medical care across the entire panel of patients. ", Gene Moore, MD (Independent Solo Practitioner)

"The CHT has greatly impacted my patient care. The CHT wraps around my pts to help pts maneuver through the maze of available services and support in the community. It also provides the needed "nudge" and follow up to help pts move in a more healthful direction. Motivation of pts is the needed piece in moving forward in healthy changes – CHT does this. Lifestyle changes are the most difficult piece of the puzzle in chronic care. CHT works on this." Joyce Dobbertin, MD, DC (Corner Medical)

Researchers at Fletcher Allen conducted focus groups of providers (physicians, nurse practitioners and physician assistants) comparing practices without a CHT with those at Aesculapius at one year into pilot implementation. General themes included positive impacts on patient satisfaction and outcomes, better communication between practice staff and outside resources with referral tracking, self management coaching and behavioral health.

Patient Experience: Fletcher Allen Health Care routinely does patient satisfaction surveys. Analysis of survey data revealed the following when comparing those patients with access to the services of the CHT (formerly known as the Community Care Team, or CCT) to those without (Figure 3).

Figure 3. Satisfaction Survey Results



	Make changes to diet	Increase physical activity	Access counseling	Access community services*	Medication Mgmt	Help after hospital discharge	Help after ER visit	Overall Experience
CCT Patients	25.0	37.5	35.5	46.9	41.9	40.0	66.7	54.8
Non-CCT Patients	19.8	24.0	25.8	24.4	44.2	36.0	34.5	50.5

Patient Stories: 78 year old male with Type II diabetes, hypertension, hyperlipidemia, and depression presented to CCT for fitness education. He had two sessions with the CCT social worker and 3 personal training sessions at the YMCA. Patient at admission was taking an antidepressant and declined a referral to a mental health clinician. At

admission his PHQ-9 (depression score) was 20. In just three months patient reported that his quality of life had improved immensely. He was now able to walk for longer periods of time without pain or fatigue and he continues to exercise 3 times per week. His PHQ-9 dropped to 9.

19 year old male with poorly controlled Type 1 diabetes and history of frequently hospitalizations was referred to the team. He had a HbA1c of 15 at first contact, was homeless, and not taking his medications as prescribed. A team consisting of his Primary care provider, Community Connections staff for general assistance and food stamps, the Diabetes Educator, Hospital Care Managers, and the Office of Vermont Health Access (Vermont Medicaid) Care Manager worked with him. He declined referrals to Vocational Rehabilitation, Northeast Kingdom Community Action, and Youth Services. As a result of the team's interventions, this young man has housing and is eating regular meals. He is taking his insulin as prescribed, is getting to his scheduled medical appointments and getting appropriate laboratory testing. His HbA1c has dropped to 9 and his liver function tests have improved. In addition, he is in regular contact with his medical home, contacting them with medication questions as they arise.

Highly independent and isolated elderly couple in early eighties, both with Type 2 diabetes and hypertension (wife is care giver for husband with Alzheimer's) was referred to Chronic Care Coordinator by front office staff due to confusion around medication renewals and husband verbalizing suicidal thoughts. Team members who were involved included: Primary Care Provider for both husband and wife, behavioral health specialist, chronic care coordinator, Diabetes Educator, local pharmacist, family members, Northeast Kingdom Human Services (community mental health agency) social worker, hospital ER, hospital care manager, local pastor, Lyndonville Police Department, Area Agency on Aging, Caledonia Home Health, the Pine Health and Rehabilitation Center. As a result of the intervention by the team, the wife was herself diagnosed with dementia by the behavioral health specialist. Their family was contacted and community support measures were put in place to assure safety. Close case management was done by the chronic care coordinator and behavioral health specialist to facilitate communication between caregivers and attendance to appointments. Wife is receiving treatment and couple is working with support to voluntarily move to assisted living.

45 year old female was referred to the CHT for untreated asthma due to no health insurance. Team members participating in her care included her Primary care provider, chronic care coordinator, Community Connections, chronic care community health educator, local pharmacy, hospital-based Smoking Cessation Services, and the hospital Asthma Management Program. Actions taken for this patient included the chronic care coordinator providing a one month supply of inhaler through a grant with a local pharmacy. She received assistance with insurance applications, was referred to smoking cessation, and had transportation arranged so she could go to the asthma management program.

1.4 Payment Reform: Financial support for PCMHs and CHTs represents a substantial investment in primary care and prevention, with the financial goals of reducing unnecessary acute care expenditures and reducing the rate at which healthcare costs are growing. The Blueprint model includes two components of multi-insurer payment reform designed to; support prevention oriented health services, align financial

incentives with health related goals, move towards a balance between quality and volume based payment, and to sustain effective and scalable services.
Currently, Vermont's three major commercial insurers, and the Office of Vermont Healthcare Access (OVHA, or Vermont Medicaid), are participating in the Blueprint model of payment reform in three pilot communities. The Blueprint program (State budget) is supporting Medicare's portion in order to test the impact of payment reform for a general population.

Component 1 – All insurers (Blueprint subsidizing Medicare portion) pay an enhanced payment to practices that are nationally recognized as PCMHs. The enhanced payment is in addition to normal fee for service payments and is calculated based on the level of recognition achieved on the National Committee for Quality Assurance Physician Practice Connection – Patient Centered Medical Home (NCQA PPC-PCMH) survey. A multi-stakeholder Blueprint planning group, including insurers and providers, agreed to adopt the NCQA PPC-PCMH standards and scoring as a basis for insurers to pay primary care practices for the quality of care they deliver. This scoring process is based on quality standards designed to evaluate whether a practice delivers coordinated, guideline based patient centered healthcare. The NCQA score based payment (quality) is on top of normal fee for service (volume), and is designed to begin balancing quality and volume based payment incentives. Insurers can still compete with their fee for service payments and contracts.

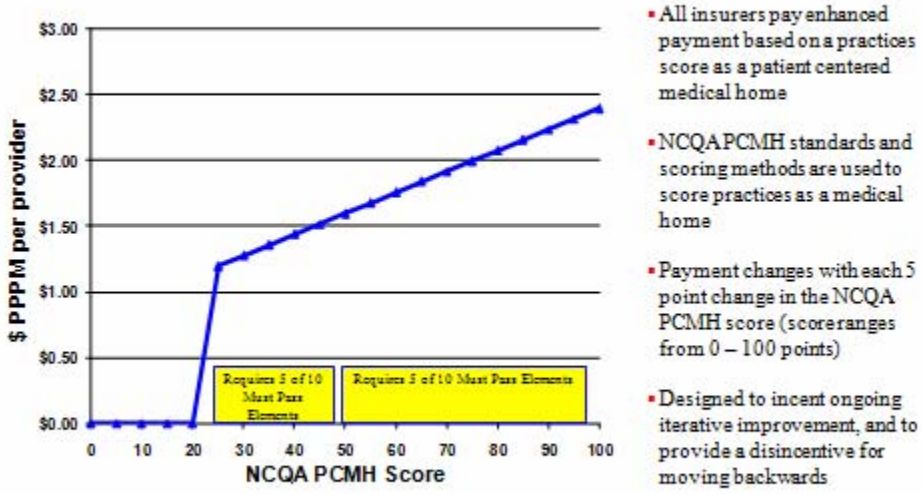
The Blueprint scoring and enhanced payment process is outlined below;

- A University of Vermont based program evaluates practices against the NCQA PPC-PCMH standards to assure independent and consistent scoring.
- Practices are scored at baseline and re-scored every six to twelve months.
- The scoring documents are submitted to the NCQA for review and formal recognition. Official results are provided to all insurers.
- A per person per month payment ($PPPM) for each practice is based on the practices' NCQA PPC-PCMH score. The $PPPM amount ranges from $ 1.20 to $ 2.39, and changes $ .08 with each 5 point change (up or down).
- Insurers use a common definition to count the number of covered lives that they can attribute to a practice.
- Currently, enhanced payments are made for patients > 18 years old, who have had a visit with a primary care provider in the practice in the past 12 months (active annual case load).
- The enhanced monthly payment is calculated by multiplying the number of attributed patients by the $PPPM rate linked to the practice's NCQA PPC-PCMH score.
- Payments are sent to the coordinating administrative entity in the community and distributed to partner practices and organizations.

The enhanced payment is tightly linked and sensitive to change in the NCQA PPC-PCMH quality score, a strategy that is designed to motivate sustained iterative quality improvement, and to provide a disincentive to slip backwards. The potential for a

substantial enhanced payment is intended to help practices operate as high scoring PCMHs that work closely with CHTs to deliver effective preventive care to a general population.

Figure 4. Payment scale for patient centered medical homes



Component 2- Vermont's 4 major insurers (3 commercial and Vermont Medicaid) and the Blueprint acting as Medicare share the costs of the Community Health Team. With one exception (due to a low number of covered lives), the multi-stakeholder Blueprint planning group agreed to have each participating insurer support an equal portion of the costs for a CHT. As there was no clear way to determine how a CHTs resources would be distributed across a general primary care population, the cost was simply split. Shared costs establish the CHT as a core local resource that available based on need. There are no financial incentives or disincentives for a clinician in a medical home to connect a patient with CHT services. There are no co-pays or prior authorizations, a strategy designed to minimize financial and logistical barriers for patients and families. The Blueprint model has initiated operations with insurers funding a CHT that consists of 5 full time equivalents (FTEs) per 20,000 patients in a general practice population. The Blueprint multi-stakeholder work group adopted this ratio as a starting point for the Integrated Health System pilots based on best estimates. However, it is important to note that published experience and reports from other institutions are primarily derived from targeted disease management and case management programs. The work group was not able to find well modeled experience with community health teams supporting patient centered medical homes serving a general, rather than disease-specific population.

The Blueprint pilots include multi-insurer support for Community Health Teams based on the following design elements;

- A Community Health Team unit consists of 5 FTEs per 20,000 medical home patients (general population).

- Allocate $ 350,000 (~ $ 1.45 PPPM) for each CHT unit (5 FTEs / 20,000 patients).
- CHT staffing and operations are planned locally, by community stakeholders including participating medical home providers and the local coordinating administrative entity.
- The core CHT unit (5 FTE / 20,000 people) coordinates referrals and linkages with a broad array of services. Working with coordinators and personnel from other service organization establishes a 'functional' CHT that is greater than the 5 full time equivalents (core CHT).

1.5 Self management and Decision Support: As with all other aspects of the program, the Blueprint model includes a systems based approach to self management and decision support, which includes fostering interconnections of clinical and community based services to promote prevention and health maintenance, and a system of care that supports patient self-management. With self-management support patients can take an active role in addressing a broad array of medical and social factors that contribute to health maintenance and management of chronic conditions.

Healthier Living Workshops: Healthier Living Workshops (HLWs) are Vermont's version of the Stanford Chronic Disease Self Management programs. These six week long evidence-based programs teach patients self-management skills and provide a peer-support network for individuals with chronic conditions. HLWs empower individuals as self-managers through education, support and skill-building exercises, notably, goal-setting and problem-solving. Patients learn:

- Techniques to deal with problems such as frustration, fatigue, pain and isolation
- Breathing techniques and guided imagery to reduce stress
- Exercises for improving and maintaining strength, flexibility, and endurance
- Approaches to taking medications and lessening their side effects
- Ways to communicate with family, friends, and health professionals
- Concepts for healthy eating
- Methods for evaluating health treatments

Self-management Support in Primary Care**:** The Vermont Blueprint for Health is establishing a system to improve self-management support in primary care. The system is complex and multifaceted enhancing clinical skills, redesigning primary care practice (medical homes), providing tools for clinical teams, patients and families, and creating seamless connections between health care and community resources. Foundations such as financial reform, information technology, evaluation and community health teams have been established and are continuing to be enhanced and rolled out in hospital service areas across the state. Support for health care delivery systems redesign and implementation of tools such as decision support in clinical practices are the focus of the Blueprint for Health and our community partners for the next year. All components are evidence based and data driven.

Clinical System Support**:** Self-management support in clinical practice requires delivery system redesign impacting the interaction of a patient with their medical home before, during, and after clinical visits. It requires that the patient have good access to the health

team, and the frequency of contact that is necessary for implementation of a patient directed plan that is developed cooperatively with clear goals for clinical and behavioral outcomes. The approach requires a fundamental shift in the delivery of care. It utilizes standards based care, decision support, technology and systems to assist health teams and requires a shift in payment.

Table 1. Components of Self Management

Traditional Care		Collaborative Care
Assumes knowledge drives change	→	Assumes knowledge and confidence drives change
Physician sets agenda	→	Patient sets agenda
Goal is compliance	→	Goal is enhanced confidence
Decisions made by caregiver	→	Decisions made collaboratively
Physician entire responsible for encounter and patient outcome	→	Multi-disciplinary team works with and supports patient
Disease oriented	→	Health maintenance and whole person oriented
Episodic care for acute issues	→	Continuous contact with health team
Care delivered in clinic	→	Care delivered across communities
(modified from Bodenheimer et al, CA Health Care Foundation, 2005)		

Support for Standards based care: The Blueprint for Health developed visit planners with DocSite based on national standards for clinical best practices, which support health care teams in providing evidence-based care. The visit planners are used during planned visits to prompt health teams to assure that patients are more likely to receive recommended screening and health maintenance. The DocSite/HIE architecture will support CHTs as they work to enhance self management across a community with different systems and organizations.

Planned visits differ from acute care visits. They are:

- Proactively scheduled visits (individual or group) to review health risks, self-management, and care plans.
- Visit intervals are regular and jointly established by the health care team and patient.
- Staff roles and the flow of the visits are clearly defined.
- Clinical management and self-management are the focus of the visits.

Self-management Support in Clinical Practice Change Facilitators: In order to transition from a focus on acute visits and procedure based care to planned visits, clinical practices need to develop new systems and skills. Blueprint is collaborating with the clinical practices to provide them with the skills and resources to identify and make systems changes to enhance self-management support. In October 2009 Blueprint began a series, in collaboration with the Jeffords Center for Quality at Fletcher Allen Health Care, aimed at training facilitators to assist the practices in identifying and adapting their systems to better support self-management. Representatives from six Blueprint communities and three communities striving toward Blueprint readiness are participating. The series includes Chronic Disease Self-management Training, Clinical Microsystems Coaching Training, and a one day training or on-site facilitation on adapting self-management to clinical practice.

Self-management support in clinical practice facilitators will have the expertise to train practices in the best-practice skills for self-management support such as goal setting, action planning, problem solving and motivating interviewing and will be able to identify the systems and organizational support needed to build effective self-management support infrastructures. The Vermont Department of Health staff will identify material and resources currently in use across the country such as decision support tools for the facilitators to use to train staff and providers. In the absence of a needed tool VDH staff will work with key experts to help fill the need.

During the training process each facilitator will be working with at least 2 clinical practices to enhance their self-management support systems. By training facilitators in each Blueprint Community we will be building the sustainable capacity of the Vermont health systems to take a systems approach to better self-management support and quality care.

Training is also being provided to clinical practice teams through the VPQHC Collaboratives, currently supported through Blueprint funds. In December 2009 nine teams attended the first VPQHC training session, the majority of those teams had a local facilitator being trained to support them. This year the VPQHC Collaboratives have moved towards Medical Home readiness and preparation for NCQA scoring. This shift will assist the participating FQHCs and clinical practices in preparing for upcoming payment reform. To fully achieve the quality care measures outlined by the Blueprint initiative, VPQHC will need to go further, developing the understanding of the practices with whom they are working on the connection of self-management support systems to the medical home project by embedding self-management support into the collaboratives. Blueprint and VDH staff will work to engage VPQHC in going beyond changing business office practices. We will strongly encourage and offer resources for enhancing their work to include self-management support.

Decision Support (Act 49, Section 4 - Report to the Legislature): In 2009, the Vermont State Legislature passed Act 49, an act relating to containing health care costs. Act 49, Section 4 reads as follows:

"(a) No later than January 15, 2010, the secretary of administration or designee shall present a plan to the house committees on health care and on human services and the senate committee on health and welfare for a shared decision-making demonstration project to be integrated with the Blueprint for Health. The purpose of shared decision-making shall be to improve communication between patients and health care professionals about equally or more effective treatment options where the determining factor in choosing a treatment is the patient's preference. The secretary shall consider existing resources and systems in Vermont as well as other shared decision-making models. The plan shall analyze potential barriers to health care professionals participating in shared decision-making, including existing law on informed consent, and recommend solutions or incentives to encourage participation by health care professionals in the demonstration project.

(b) "Shared decision-making" means a process in which the health care professional and patient or patient's representative discuss the patient's health condition or disease, the treatment options available for that condition or

disease, the benefits and harms of each treatment option, information on the limits of scientific knowledge on patient outcomes from the treatment options, and the patient's values and preferences for treatment with the use of a patient decision aid.

In accord with Act 49, Section 4, the Vermont Blueprint for Health will commence a one year long shared decision-making pilot in the Barre Hospital Service Area Integrated Pilot on July 1, 2010. The affected population will include 20,000 potential patients in the following primary care practices: The Health Center at Plainfield, Central Vermont Primary Care, Associates in Family Health, Waterbury Medical Associates, and Dr. Anthony Williams.

The pilot will be focusing on the identified cost and morbidity drivers for the following preference- or behavior-sensitive conditions: congestive heart failure hospital re-admissions, cardiovascular procedures performed, and asthma-related emergency department visits. Recognizing the significant cost associated with musculoskeletal surgical and imaging procedures, these will be addressed, but in an exploratory manner, as the Blueprint does not yet have working relationships with specialists in the field of orthopedics.

The study population will be exposed to a "patient decision aid", defined as an interactive, written, audio-visual or online tool that provides a balanced presentation of the condition and treatment options, benefits and harms, including a discussion of the limitations of scientific knowledge about outcomes (if appropriate).

At least one of the following nationally certified interventions will be applied: 4PatientCare Unified Communication Solutions, Ottawa Personal Decision Guide, patient decision aids from InformedMedicalDecisions.org, Health Dialogue, and the Cochrane Collaboration.

Evaluation of the pilot will be accomplished in alignment with the overall Blueprint evaluation, including pre and post comparisons of hospital service area-specific incidence and prevalence of the indicators above, patient satisfaction and cost analyses, including application of the Blueprint financial impact model to determine the potential "return on investment".

Patient Portals: Continuous contact with patients is a theme in self-management support. It is essential to enable dynamic communication between the health team and the patient. Technology can effectively facilitate this communication. Patient portals allow patients to opportunity in a secure environment to schedule appointment, email health teams, view their health information, track their progress towards clinical and behavioral outcomes, and in generally actively engage in the maintenance and management of their health. Portals also assist providers in communicating with patients, prompting planned visits and screening, follow-up on referrals and track information in the electronic health record about progress toward clinical and health maintenance goals.

Patient portals complement electronic systems such as DocSite and electronic medical records. Beginning in December 2009, the Blueprint for Health began to review different patient portals and to explore the feasibility of deploying one in Blueprint participating

practices. By July 2010, the Blueprint team will decide whether to add a patient portal to the suite of IT products available to Blueprint communities and will identify product specifications that meet the needs of providers and patients.

Self-management office visits: In addition to planned visits and telephonic support Blueprint will pilot in at least one integrated pilot community on-going in-person self-management support group visits. Based on the outcomes of the visits offered between February and May 2010, the Blueprint will continue to adjust the format and pilot them in other Blueprint and Blueprint ready communities.

Evaluation Related to Self Management: NCQA based scoring of a clinical practices "Medical Homeness" on a regular basis evaluates the improvements and maintenance of systems for delivery of quality care. Each of the 12 practices in the integrated pilots are scored by a third party evaluator every 6 to 12 months.
Chart audits are conducted annually in every Blueprint practice. A total of 30 charts are reviewed for each physician (ten each of patients with diabetes, asthma, and hypertension) in every practice, documenting if health care providers are setting and tracking goals with patients. Once a robust longitudinal data set has been developed for all three conditions, the Blueprint will be able to measure increases in self-management support practices of providers, achievement of goals by patients and any correlation with better clinical outcomes.

Assessment of Primary Care Resources and Supports for Chronic Disease Self Management (PCRS) is a self-assessment consisting of 9 patient and 9 organizational measures being used in Blueprint practices. The survey is being administered to multi-disciplinary office staff. In late 2009, 21 Blueprint practices participated in the PCRS, and the remaining practices will do so by April 2010. This data will assist quality improvement efforts related to self-management in clinical practice, comparing practices with and without the support of community health teams.

Community-Based Self-management Programs:

1. Healthier Living Workshops (HLWs) were deployed statewide in Vermont in 2009, with regional coordinators for the program serving all Hospital Service Areas. Between January 1, 2009 and December 30, 2009 there were 56 workshops offered in the state with 760 people who attended at least 1 class and 465 who completed the program (defined as attending at least 4 of 6 classes). In 2009 the Blueprint for Health focused on building a sustainable infrastructure for HLW and enhancing program fidelity. There are 3 levels of certification: leaders who lead the workshops for consumers; master trainers who train leaders; and t-trainers who train the master trainers. Master and t-trainers are also qualified to audit workshops to ensure program fidelity and effectiveness.

   In spring 2009, a VDH team member was certified as a t-trainer, and subsequently led a cross-boarder master training with partners from New Hampshire. Thirteen new master trainers were trained to serve Vermont communities, ensuring that at least one master trainer was regionally available to for each hospital service area. Having master trainers throughout Vermont will allow the regional coordinators of the program to train additional leaders as needed and will ensure that at least

one class for each leader is audited every 2 years.

An additional nine people from New Hampshire were trained during the master training, which will assist in building an infrastructure in New Hampshire to administer the program guaranteeing that Vermonter and New Hampshire resident's needs are met in border communities.

The Blueprint for health will work with a limited number of hospitals in 2010 to pilot the Healthier Living with Diabetes Workshops (Stanford's Diabetes Self-management Program), for which 2 Vermonters were trained in 2009.

The HLW evaluation database was enhanced this year to better capture information regarding referrals to the program. The enhancement will allow the program to determine who may benefit from the program that is not participating, which will allow the Blueprint to structure future initiatives to better meet their needs. In 2010, using ARRA funds, the Blueprint hopes to add a module to DocSite for HLW, which will allow for more complete referrals from providers directly to the regional coordinators and feedback to health care providers about a patient's participation.

2. Tobacco Cessation 2010 - In 2010 the Blueprint for Health will work with the VDH tobacco control program to develop a seamless referral process from the Community Health Teams to the Quit Network. To support these referrals and referrals from health care providers a module will be added to DocSite. A DocSite module will allow referrals of patients directly from providers to the appropriate Quit Network coordinators and feedback to health care providers about a patient's participation.

3. Obesity 2010 - In 2009 the Blueprint for the Health and the Vermont Department of Health Fit and Healthy program began to identify statewide evidence-based community weight loss programs. In 2010 these efforts will continue focused on providing a systems-based approach to referrals and feedback to providers. Additionally Blueprint will work to identify or develop and pilot an in-practice group visit model focused on working with patients to achieve a healthy weight.

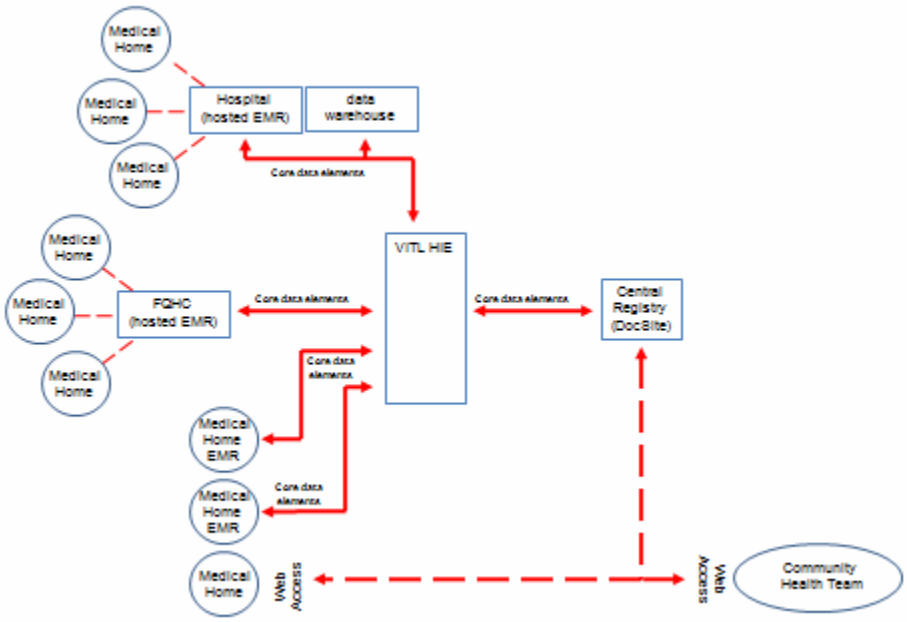
1.6 Health Information Infrastructure: The Blueprint model includes a health information infrastructure designed so that key health information is available when and where it is needed in order to support functional integration across discrete programs and organizations. The Blueprint is working closely with the Vermont Information Technology Leaders (VITL), the state sponsored Health Information Exchange (HIE), to develop infrastructure that supports meaningful use of health information, and an integrated health services model. The health information infrastructure includes;

- Implementing a Blueprint sponsored centralized registry (DocSite). DocSite is a web based clinical tracking system that can be used to; produce visit planners that guide individual patient care, and, to produce reports that support population management, quality improvement, program evaluation, and comparative benchmarking.
- A Blueprint data dictionary that supports the program's clinical goals, so that common information can be exchanged across a wide array of organizations

through the use of consistent structured data. The data dictionary is used to define the clinical content in the centralized registry (DocSite), update EMRs, and to guide the development of interfaces between clinical organizations and the statewide HIE network (VITL).

- An architecture that supports transmission of common data elements from EMRs, hospital data systems, and ultimately other data sources (e.g. public health registries) through VITL's HIE to the centralized registry.
- Several levels of technical support and training in collaboration with DocSite, the Vermont Information Technology Leaders (VITL), the Vermont Program for Quality in Healthcare (VPQHC), the Jeffords Institute for Healthcare Quality based at Fletcher Allen Health Care (FAHC), and the University of Vermont, and the Vermont Child Health Improvement Program (VCHIP) based at the University of Vermont.

Figure 5. Health Information Architecture



This architecture is designed to allow appropriate health information to be available where it is needed, and to support coordinated clinical services built on a foundation of medical homes and community health teams. It is also designed to allow appropriate health information to support linkages with social, economic, public health, and other supportive health services. It establishes a centralized registry as a data source that can contribute to an evaluation infrastructure that uses routinely collected data, to contribute to public health planning, policy planning, program evaluation, and quality improvement (Evaluation Infrastructure, section 1.7). This architecture is being built in accord with VITL's Privacy and Policy Guidelines, and to assure that data access and privacy protections are consistent with Federal and State law.

The Blueprint and VITL are working hand in hand to build a health information architecture that can support a wide range of guideline based health services and health reform needs. Key components and design principles include:

- The use of common data elements (data dictionary) to guide updates to EMRs in clinical settings across the state. The data dictionary includes clinical data elements that are derived from national guidelines for the regular health assessments that are recommended for all adults (health maintenance based on age and gender). It also includes data elements that are derived from national guidelines for the care of patients with chronic conditions. The data dictionary is steadily being expanded to include data elements for other age groups, conditions, and services. This helps to assure that structured guideline based data elements are available in EMRs to track important clinical information. Objective data (coded diagnoses, coded procedures, numeric lab results), are often tracked in a structured way. However, important clinical information (symptoms, self management goals) is often recorded as unstructured text that is not very useful for care coordination, tracking outcomes, guiding panel management, evaluating program impact, or guiding quality improvement. Updating EMRs with guideline based data elements, in the context of financial reform that supports medical homes and community health teams, establishes an environment for improving guideline based care.

- The use of the same common data elements (data dictionary) to guide development of VITL's HIE infrastructure. Using a common data dictionary to develop the HIE establishes an opportunity for a broad array of clinical information to be available when and where patients need it. The data dictionary helps to assure that interfaces (connections) with EMRs and hospital data systems are designed to handle the same structured clinical information that is being built into EMR templates. This important information includes things such as demographic data, coded financial data, coded diagnoses and conditions, coded allergies, coded medications, coded procedures, coded healthcare encounters such as hospitalizations, and objective lab results. However, it would not be possible to exchange more detailed clinical information unless it was collected in a structured format with an HIE infrastructure that was designed to handle it. The use of a common data dictionary to guide updates to EMR systems, connections between EMRs and the HIE, and the HIE infrastructure, establishes an opportunity for exchanging more detailed clinical information and enhancing the opportunity for high quality guideline based healthcare across organizations. It also enhances the scope of information that can be used by community health teams for care coordination & panel management, as well as program evaluation, quality improvement, public health needs, and integration with other targeted services.

- The use of the same common data elements (data dictionary) to guide development and design of the centralized registry. It is routine for a community to be composed of a number of independent clinical organizations and practices that each have their own EMRs and data systems. Collecting common data elements from independent data systems and transmitting them into a web based central registry assures that a CHT has a single information source to coordinate guideline based services for a whole population, no matter where they are working.

- Establishing a centralized registry (DocSite), fed by common data elements, to support well coordinated guideline based care for a population served by a group of Medical Homes and a Community Health Team. The centralized registry assures that CHT members have access to clinical information and visit planners for the patients they serve, even though the population receives care in a number of medical homes with independent EMRs and data systems. Medical homes that don't yet have an EMR can use the web based registry to support individual patient care (e.g. visit planners), which is particularly valuable if the registry is being fed lab and procedure results that may be available from participating hospitals. All practices, even those with EMRs, can use the registry to conduct panel management for their patients (e.g. pulling reports for outreach to patients that need recommended assessments, or need follow up and re-evaluation). This is valuable particularly for practices and organizations that don't have robust technology and analytic support personnel. EMRs are often limited in their capacity for flexible reporting, requiring costly programming and development work to add reporting capacity. This becomes an ongoing barrier as iterative adjustments and modifications to reports are associated with ongoing development costs.

  The CHT has the capacity to pull reports and conduct the same type of outreach and management for the entire population they serve, even though the population receives care in organizations and medical homes with independent data systems. In addition, a central registry provides access to clinical information for case managers that are targeting high risk populations (e.g. Medicaid case managers, case managers for conditions such as congestive heart failure), along with the ability to coordinate services with the core Community Health Team. At all levels, a central registry can improve the opportunity for guideline based patient care, coordinated referrals, and patient outreach.

- Establishing a centralized registry to support coordinated referrals and follow up between Medical Homes, Community Health Teams, and a wide range of human services. A central web based registry establishes a common tracking system for coordinating referrals with support services that extend beyond the healthcare setting. Targeted access and web based templates, consistent with appropriate privacy and data sharing policies, can be provided to support a broad range of support services including social services, economic services, public health services, and others. Examples include using the registry to provide targeted web based tracking for social workers, tobacco cessation counselors, and HLW coordinators. Supportive health information is available to these service providers while their input and activity is available to medical homes and community health teams. Integrated tracking between PCMHs, CHTs, and other service providers establishes an infrastructure to support better coordination of services across traditionally segregated sectors.

- Establishing a centralized registry to support ongoing quality improvement and program evaluation as part of the Blueprints overall evaluation infrastructure (Evaluation Infrastructure, section 1.7). The registry includes flexible reporting functionality that can be used to support clinical services (e.g. panel management), as well as program evaluation and quality improvement. The registry includes a web based reporting dashboard that provides ready access to

population level data including clinical process measures and health status measures. The dashboard is designed to support filtering and reporting at multiple levels (e.g. state, hospital service area, organization, clinical site, provider, patient, insurer, condition, clinical process measure, health status measure, and population not at goal). Organizations can see identified data for their organization while de-identified data is available across organizations. Comparative assessments can be used to guide activities such as ongoing quality improvement, program evaluation, healthcare delivery planning, and public health planning.

In the Blueprint Integrated Health Services model, building and using the health information infrastructure cannot be viewed in isolation. It is part of more comprehensive reform that involves adapting technology into a new work environment, and changing the way that health services are delivered on a foundation of medical homes and community health teams.
The Blueprint is working with several partners to assist practices as they transition and adapt their operations based on patient centered medical home standards. Partners include the Vermont Information Technology Leaders (VITL), DocSite, the Vermont Program for Quality in Healthcare (VPQHC), and Fletcher Allen Health Care (FAHC), Vermont's academic medical center affiliated with the University of Vermont. VPQHC and FAHC conduct training and learning collaboratives that promote a structured approach to practice transformation and ongoing quality improvement. This training, aligned with NCQA PPC-PCMH standards, helps practices plan how they can adapt their clinical workflow to use health information technology. Collaboratives and training are being conducted on a statewide basis beyond the 3 Blueprint Integrated Health Services Pilots to assist with readiness for expansion of that model.

VITL and the Blueprint have partnered to align planning, and to provide the technical and financial support that is necessary to build a successful statewide infrastructure. This includes assisting practices and organizations (e.g. hospitals, health centers, independent practices) with project management to connect them to VITL's HIE network, and to update their EMRs based on the core Blueprint data dictionary. Financial support is provided to Hospital Service Areas (HSAs) with VITL and Blueprint sharing the costs of the development work.

Development of the health information infrastructure is farthest along in the three HSAs that are part of the Blueprint Integrated Health Services Pilots (St. Johnsbury, Burlington and Barre). In these HSAs, VITL project managers have worked hard to build connections from EMRs and hospital data warehouses, and to transmit data elements thru VITL's health information exchange to DocSite. Large amounts of demographic and clinical data are being transmitted yet ongoing and sustained efforts are necessary to overcome complex technical and cultural barriers (see below). At this time, data transmission is one-way from EMRs and hospital data sources thru VITL to the central registry. Bi-directional health information exchange across independent organizations is in the planning stages. The registry controls access to identified (personal) health information. Patient's personal health information (identified) is available to providers who are affiliated with the organization where they receive their care (e.g. clinicians, community health team members). Personal health information in the registry will also be provided to care coordinators and case managers who have legal or contractual access

to the information (e.g. Medicaid care coordinators). De-identified data is available for program evaluation, comparative benchmarking, quality improvement, and public health purposes. VITL and Blueprint are also working in other HSAs around the state with practices, clinics, and hospitals that want to develop the health information infrastructure as part of the readiness work that is necessary for expansion of the Integrated Health Services model. The stage of this readiness work varies by HSA (Plans for Program Expansion, section 4.0).

DocSite personnel have been dedicated to working in Vermont to provide training and ongoing support for use of the central registry. This includes the use of visit planners for individual patient care, the use of reports for panel management, and the use of reports to support ongoing quality improvement. In addition, DocSite is expanding the capacity of the registry to meet the needs of the growing Blueprint model. At present work is actively underway to add data elements and templates for CHT activity, care coordination, and pediatrics. Additional modifications that adapt the reporting dashboard to match Vermont's HSA orientation are almost complete.

The Vermont Child Improvement Program (VHCIP) based at the University of Vermont scores practices against NCQA PPC-PCMH standards. These scores are an important part of payment reform (Payment Reform, section 1.4) and they also provide practices with a specific rating against medical home standards that they can use to plan and guide ongoing improvement. This includes a significant number of scoring elements that relate to use of health information technology. Since it is linked directly with payment, the NCQA PPC-PCMH scoring process provides a direct incentive and road map to improve the use of health information technology in the context of patient centered care.

While substantial progress is being made, it is important to recognize difficulties that are associated with building this type of health information infrastructure, and the ingredients that are essential for success (in addition to the resources and services that are available from the Blueprint, VITL, DocSite, VPQHC, FAHC, and VCHIP). This type of health information infrastructure represents significant change, with cultural, technical, and legal implications (e.g. a novel data sharing environment with agreements that assure appropriate privacy and security protections). This discussion is not meant to be complete and will only address some of the most immediate issues that relate to the work that is underway to connect hospitals, clinics, and practices to the health information exchange, and to pass data thru to a centralized registry.

Experience to date suggests that a key ingredient to success is strong local leadership. It is important for top executive and clinical leadership in each organization to be committed to this process, and to make sure that participating as part of the health information infrastructure is established as a priority. This commitment is necessary to assure that the local information technology staff will work with VITL project management and DocSite in a sustained and dedicated fashion. Staffing and resources within IT departments are often limited, and it is easy for the focus of their work to shift to meet the priority of the moment. However, the importance of strong leadership goes beyond issues of priorities and limited resources. It goes to the heart of a cultural transformation that is taking place in the information technology (IT) sector. IT departments in hospitals and clinical organizations have historically worked in a relatively autonomous and isolated fashion. Data access has largely been controlled by

IT departments within their own organization. In many cases, several independent information systems have been set up to meet business and administrative needs, with modest attention to supporting clinical priorities or workflow. Implementing EMRs with clinical flow as a priority, modifying EMRs to include more structured data elements instead of free text, data sharing, and transmitting data outside of their own organization represents a substantial change in the way that IT departments interact with clinicians, and in the way that access to data is controlled. Within and across organizations, executive and clinical leadership are essential to guide change that redefines the type of data that is collected, how it will be used, and long-standing practices of relatively autonomous data control.

The complexities that affect the interface between the clinical and technical world extend to the way that commercial vendors support their products, and the way that they work with VITL to build connections between their systems and the health information exchange network. VITL has worked hard to engage vendors in the work that is necessary to develop interfaces with their EMR systems. To date, EMR vendors and their subcontractors have been slow to respond, and it has been extremely difficult to accomplish the technical work that is necessary to have data transmitted from their systems to the HIE. Cataloging the reasons for these difficulties is beyond the scope of this report. However, it appears that substantial technical modification and expensive work is often required even for EMR systems that purportedly meet standards for interoperability. In addition, it often seems that successfully completing work on this type of health information infrastructure is not a priority for EMR vendors, even with funding support. Whatever the contributing factors, the ability to engage vendors, the ability to obtain data from their systems in an acceptable format, and the ability to transmit that data into the HIE appear to be a rate-limiting steps in the development of the health information infrastructure. If actions speak louder than words, then current vendor business practices appear indifferent to a healthcare reform environment where society calls for health information to be available when and where it is needed.

Even with leadership, and dedicated IT efforts, it will take time for providers, patients, and families to fully realize the advantages that are offered by this type of health information architecture and structured data collection. The importance of clinical and executive leadership, along with payment reform, is evident as clinicians evolve from paper charts and dictated notes to tracking patients in electronic systems. Clinicians who are early adopters, and are willing to lead change, are essential in order to establish new operations and to create concrete examples of what can be done. Other clinicians will follow as the advantages become apparent and the changing culture takes hold. Even with EMRs, many clinicians elect to dictate a note or enter free text as a note in their EMR. This creates an electronic note, but it does not establish data that can be used for reporting, panel management, tracking outcomes, or transmission thru a health information exchange. Despite the limitations, text oriented charting methods are embedded in clinical practice for many (if not most) clinicians. It is worth noting that clinicians have developed their charting practices in a long standing world of fee for service payment that promotes a high volume of patient visits with a limited amount of time for each encounter. Charting and medical record keeping has been elegantly refined, in an almost a Darwinian response to financial pressures and business needs. Data that is used to drive billing and reimbursement is recorded in a structured format. Dealing with complex clinical information, which is not well-compensated, is recorded

in an unstructured descriptive format that can be quickly accomplished in a busy work day with limited clinical support staff. Even with enhanced payment to PCMHs supported by CHTs, many clinicians may need to see the benefit of structured data collection before they shift their approach to medical record keeping. Beyond this are the additional implications of structured data collection and readily available reporting with comparative benchmarks. While some clinicians embrace the opportunity for using data to guide change and quality improvement, others view the same circumstances with suspicion and even resentment.

Lastly, it is important to maintain realistic expectations and patience as the health information infrastructure matures, and to remember that other components of health reform will facilitate the development and use of this infrastructure. In the Blueprint model, the payment reforms and the foundation of Medical Homes and Community Health Teams are designed to establish a health services environment that can use the information infrastructure to support the needs of patients and families. The promises offered by this model are helping to build momentum and engage a growing number of clinicians and clinical organizations in the IT readiness work that is necessary. In addition, the American Recovery and Reinvestment Act (ARRA stimulus funds) includes investment in expanding the use of HIT across the country, and substantial financial incentives for meaningful use. The health information infrastructure that the Blueprint and VITL are developing helps providers to achieve these meaningful use standards. Collectively, these factors are likely to lead to a robust health information infrastructure across Vermont. With this in mind, it is important to note that the pace at which clinicians transition to the use of electronic tracking systems, and the degree to which they collect structured data, will vary considerably even within a single practice or organization, and in spite of the financial incentives. Some clinicians readily envision the benefits; others need to see tangible evidence before they switch from long standing practices.

1.7 Evaluation Infrastructure: The Blueprint model includes a sustainable evaluation infrastructure to support health services, evaluate program impact, and guide ongoing quality improvement. The data and reporting infrastructure is designed to make information readily available using data that is collected as part of normal operations. To accomplish this, the Blueprint evaluation infrastructure is based on the following design principals;

- Establish or identify data sources that are populated as part of routine operations and are capable of supporting a wide range of assessments including;
    - health care quality
    - health status of individuals and populations
    - resource utilization and patterns of care (e.g. hospitalizations, emergency care, outpatient visits, prescription fills)
    - healthcare expenditures and financial impact
    - population level indicators (e.g. patterns and factors associated with health status, morbidity, risk, and healthcare expenditures)
- Establish routine analytic and reporting processes (e.g. web based platforms) that utilize data from the programs data sources and provide access to information in formats that can be used routinely to support activities such as;
    - planning health services

  - delivering health services
  - evaluating the impact of health services
  - guide ongoing quality improvement
  - planning and development of public health programs
  - planning and development of public policy
- Use adjunct data collection and analyses as necessary (e.g. chart review or NCQA PPC-PCMH scoring) to support program evaluation until routinely populated sustainable data sources are able to meet these needs without adjunct data collection.

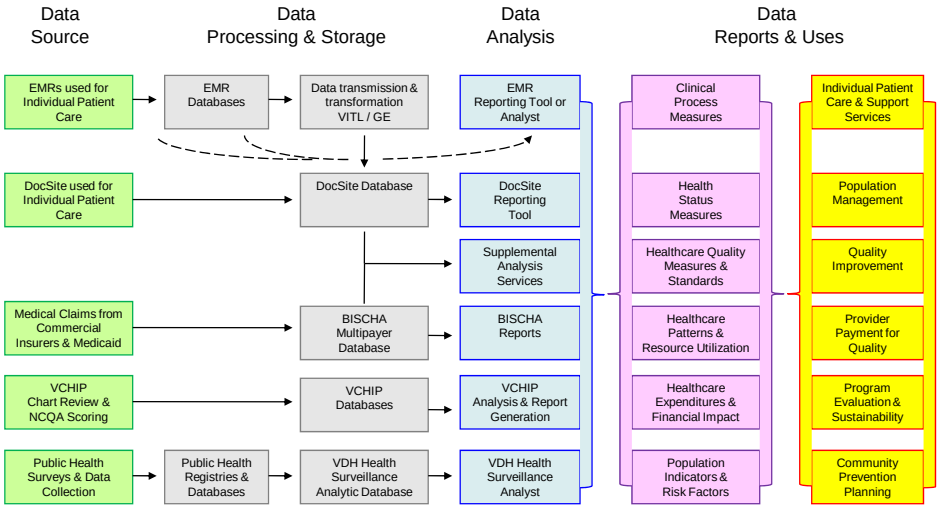
- Establish a unique health services research environment, supported by statewide data sources, where multi-disciplinary academic investigation is routinely used to inform health policy and planning at a state level (dynamic translational research).

The Blueprint model includes an evaluation framework, which meets the stated design principles, as an integral part of sustainable health reform. The infrastructure to support this approach is being developed in parallel with implementation of the rest of the model. To meet these needs the Blueprint has identified and tapped into existing data sources, and promoted a health information architecture that includes a new centralized registry (Health Information Infrastructure, Section 1.6). The Blueprint evaluation infrastructure includes;

- A centralized web based registry, based on the Blueprint data dictionary, with readily available and flexible reporting on clinical process measures, health status measures, and comparative benchmarks.
- A multi-payer claims data base, producing routine reports on utilization and healthcare expenditures in the general population and in patients who are part of the Blueprint Integrated Health Services Pilot Program. These reports are designed to populate the Blueprints financial impact models.
- Annual chart reviews to evaluate program impact on clinical process measures, health status measures, and comparative benchmarks.
- Routine independent scoring of practices based on NCQA PPC-PCMH standards.
- Analyses using data from public health registries on population indicators of health, risk factors, morbidity patterns, and drivers of healthcare costs.
- Planning for an informatics and analytics platform with a web based reporting dashboard that can integrate data from these varied sources, and apply pre-programmed analytics.

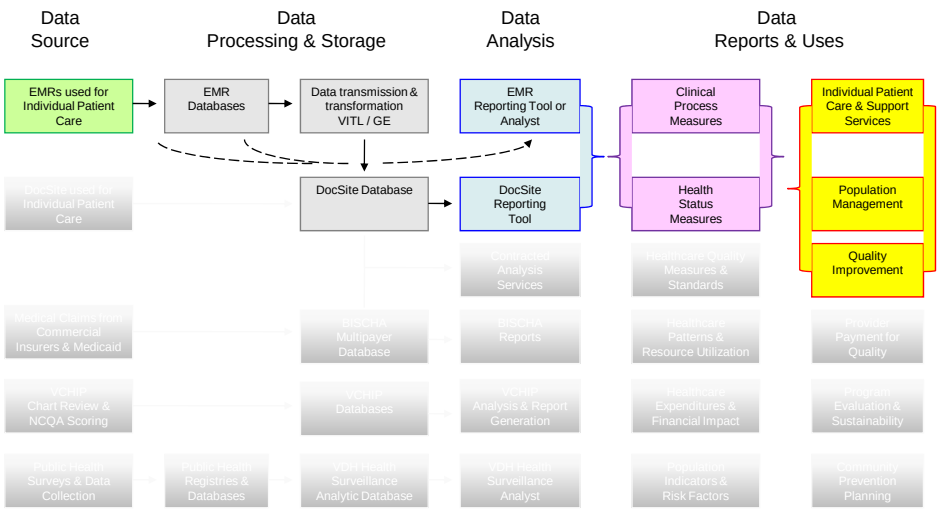
An overview of the Blueprint evaluation framework is shown including data sources, data processing and storage, data analyses, and data uses. Specific pathways and examples are discussed.

Figure 6. Evaluation Framework Overview



Centralized web based registry: The Blueprint has implemented a centralized clinical registry (DocSite) that includes a broad array of data elements related to health maintenance, prevention, and treatment for chronic disease (Health Information Infrastructure, Section 1.6). The registry is fed data from multiple sources, including EMRs and hospital data warehouses, through the VITL Health Information Exchange (HIE). The data in the centralized registry can be used to report clinical process and health status measures for populations and individuals. Common data elements, transmitted from multiple sources (e.g. hospitals, clinics, practices) provide the opportunity for comparative evaluation and benchmarking.

Figure 7. Evaluation Framework for the Centralized Clinical Registry

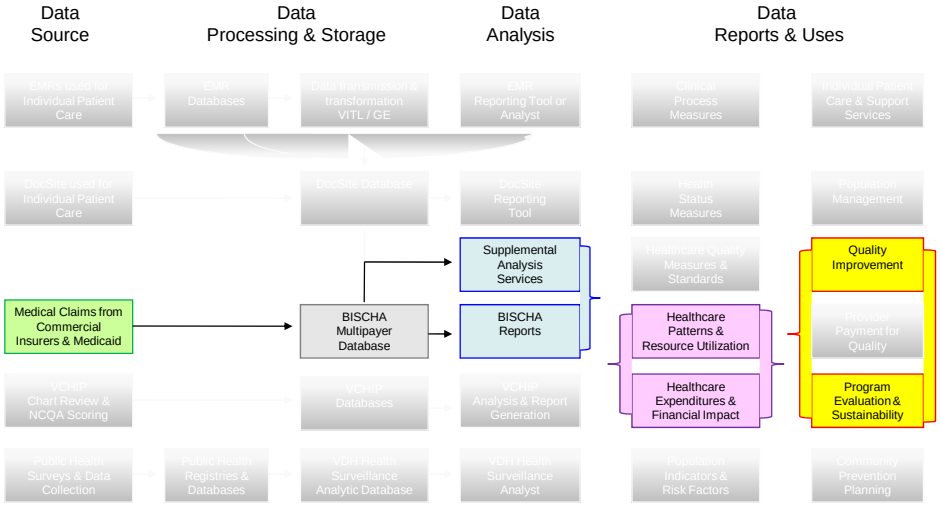


The registry includes a web based reporting platform that provides ready access to pre-programmed reports, along with the ability for users to easily create custom reports. A pre-programmed dashboard lets users quickly see the results for clinical process and health status measures, with the ability to drill down to State > Hospital Service Area > Organization > Clinical Site > Provider > Patient level data. An example may include selecting a sequence such as Vermont > Burlington HSA > Fletcher Allen Health Care > health maintenance measures. This can produce a report of the number of patients at goal and not at goal for each health maintenance measure (e.g. blood pressure, cholesterol, LDL, HDL, mammograms, colonoscopies). Selection of a health maintenance measure (e.g. blood pressure not at goal) will produce a patient level report for outreach and panel management. The reporting platform also allows users to sort and filter by a broad array of variables and measures, creating custom reports that can be saved as part of a 'one click' report library. These reports show comparative results across the clinic sites that are part of an organization, or provider level charts showing how goals are being met. They are readily available, as up to date as the data feeds thru the HIE, are useful for care coordination and outreach, and are designed to support routine evaluation and quality improvement.

Multi-payer claims database: Vermont's Department of Banking, Insurance, Securities & Health Care Administration (BISHCA) is charged with regulation and monitoring of a broad spectrum of financial and health industry activities. In this capacity, BISHCA has established a multi-payer claims data base. The Vermont Healthcare Claims Uniform Reporting and Evaluation System (VHCURES) is designed to receive paid claims in a common format from all insurers. This establishes a central repository that can be used to evaluate patterns of healthcare, healthcare resource utilization, and healthcare expenditures. The Blueprint has worked closely with BISHCA so that data in VHCURES can be used to evaluate the impact of the Blueprint Integrated Health

Services Model. As part of payment reform, each insurer identifies their beneficiaries that are attributed to each medical home (Payment Reform, section 1.4). BISHCA has implemented a plan with each insurer to create a data field and 'flag' patients' claims files that are attributed to medical homes as part of the Blueprint model. In this way, VHCURES data can be used to evaluate the impact of the Blueprint model on patterns of healthcare and healthcare expenditures (change over time, comparison to control groups receiving routine care).

Figure 8. Evaluation Framework for the Multi-payer Database



At present, VHCURES is being populated by claims data that is being submitted by Vermont's commercial insurers. Vermont Medicaid is seeking permission from the Centers for Medicaid and Medicare Services to submit claims as well. The Blueprint is working to obtain Medicare claims data as part of an Advanced Model of Primary Care Demonstration Program that was recently announced by Health and Human Services Secretary Sebelius (Opportunities for Expansion, section 4.3).

BISHCA has designed VHCURES reports to provide data in a format that can populate the Blueprint's financial impact model. The financial impact model looks at major categories of healthcare expenditures in Vermont, projections for how these expenditures will grow without intervention, and the potential impact that may occur as Blueprint reforms are rolled out across the state (Financial Impact Model, section 3.5). VHCURES' regularly planned reports include data in expenditure categories that populate the model, so that it becomes a tracking tool to transparently evaluate financial impact on an ongoing basis.

Figure 9. Multi-payer Database Reporting - designed to populate financial impact model as a tracking tool (example chart shown is based on estimates)

Expenditure Category
TOTAL
Hospital Inpatient (billed by hospital) prioritization used to assign by category
Mental/Substance Inpatient (ICD 290-316=HEDIS)
Private Psych Hospital
Other Hospitals
Maternity-related and newborns
Surgical (non maternity, non-mental/substance)
Medical (non maternity, non-mental/substance)
Hospital Outpatient (billed by hospital) Prioritization Used to assign all services during that visit to that category
Mental/Substance Hospital Outpatient
Observation Bed
Emergency Room
Outpatient Surgery
Outpatient Radiology
Outpatient Lab
Hospital-Dispensed Pharmacy
Outpatient Physical Therapy
Outpatient Other Therapy
Other Outpatient Hospital
Non-Mental Health Professional Services
Physician Services
Physician Inpatient Setting (site=21)
Physician Outpatient Hospital Setting (site=22)
Physician Office Setting (site=11)
Physician Other Setting
Other Professional Services
Nurse Practitioners or Physician Assistants
Physical Therapists
Chiropractors
Podiatrists
Other
Non-Hospital Mental Health Professional Services
Psychiatrists
Psychologists
Social Workers including (MSWs, LICSW, LCSW)
Mental Health Clinics
Other
Pharmacy
Pharmacy in pharmacy file
Pharmacy in medical claims
All Other Services
Free-standing Ambulatory Surgery Center
Free-standing laboratory
Independent radiology services
Nursing Home
Home Based Care (Home Health Agency)
Durable Medical Equipment
Other

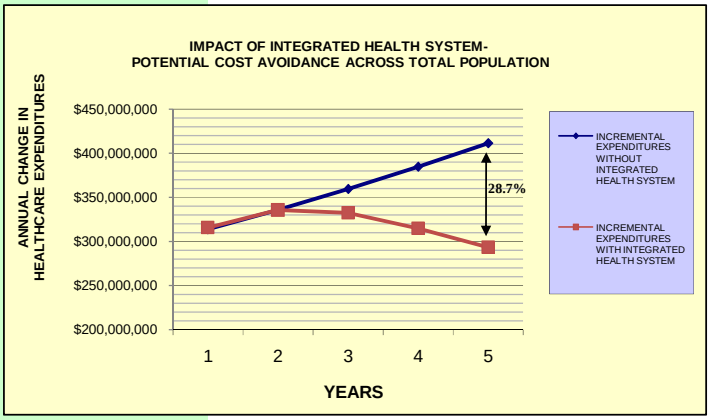
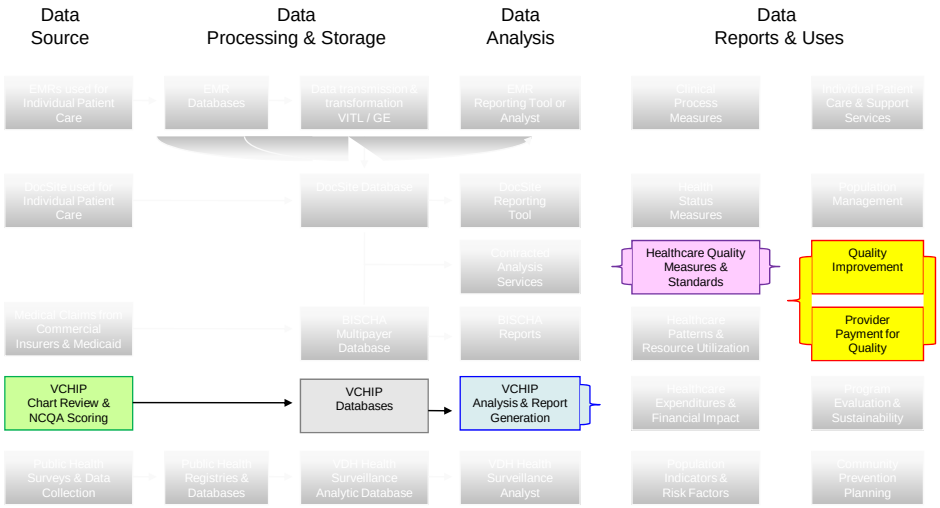


Chart review & NCQA PPC-PCMH scoring: The Vermont Child Health Improvement Program (VCHIP), based at the University of Vermont (UVM), is an important partner in the Blueprint evaluation framework. VCHIP is working directly in practices to conduct chart reviews and to score the practice based on NCQA PPC-PCMH standards. This approach to NCQA scoring provides a consistent and objective method to evaluate healthcare quality and to guide enhanced payments for medical homes (Payment reform, section 1.4).

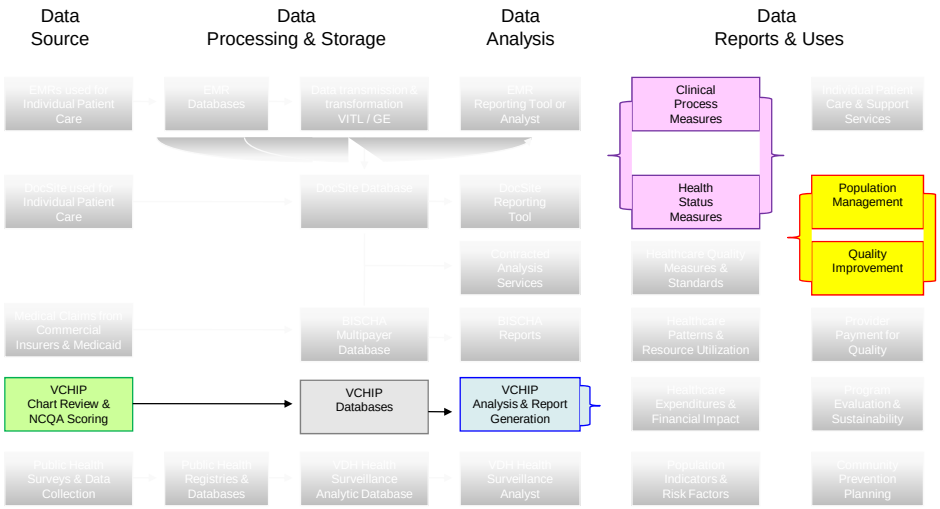
NCQA scores are based on measures of clinical process and patient centered care. Detailed NCQA scoring provides practices with a specific roadmap to plan quality improvement that is linked with payment. Practices are rescored every 6 to 12 months. Linking scores to enhanced payment provides an incentive for providers to improve and maintain the quality of care that is delivered in their practice.

Figure 10. Evaluation Framework for NCQA PPC-PCMH scoring in medical home practices



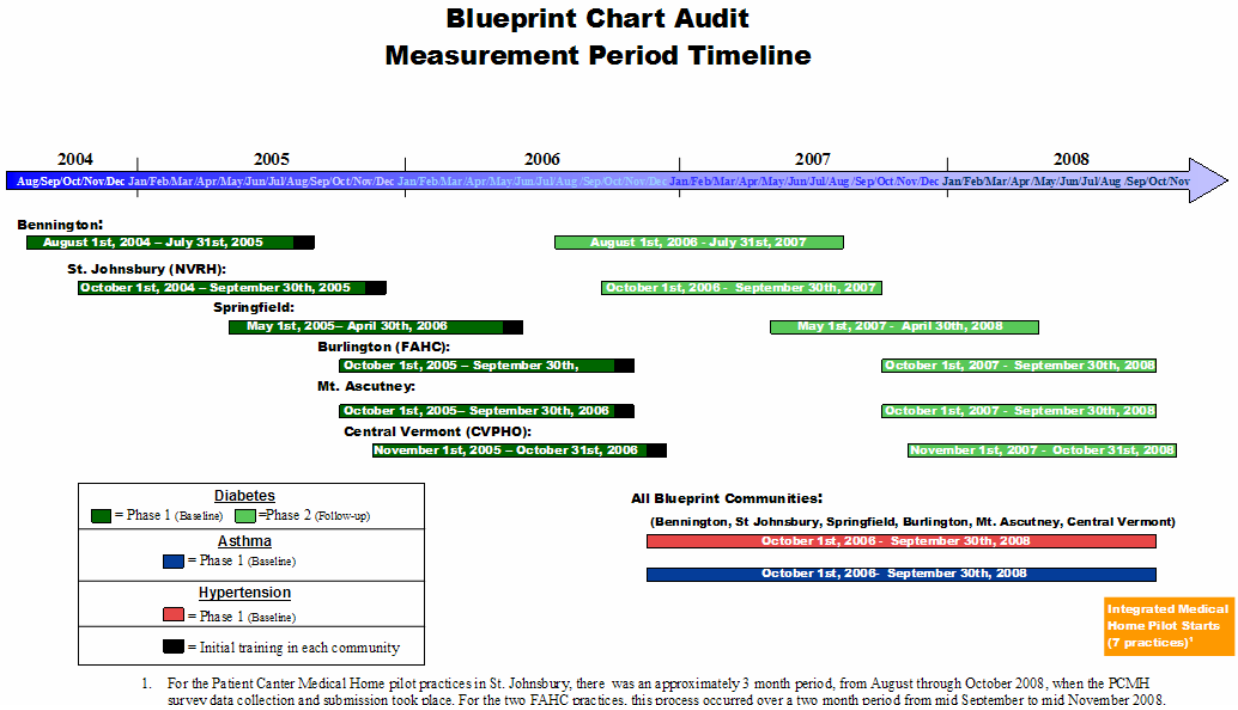
VCHIP also conducts annual chart reviews in 44 practices that have participated in Blueprint quality improvement programs around the state. 12 of these practices including 58 providers have been recognized as medical homes and are part of the full Blueprint Integrated Health Services model in 3 pilot communities. The remaining practices continue with more traditional and limited quality improvement methods, providing a basis to evaluate change over time and to compare outcomes across these different pathways of reform.

Figure 11. Framework for chart review in medical home and comparison practices



VCHIP's chart reviews provide detailed information on clinical process and health outcomes measures. Results provide a consistent and objective evaluation of the rates that patients receive recommended assessments and treatments for diabetes, hypertension, asthma, and whether self management goals are being established, tracked, and met over time. Detailed assessments of health status measures are included for each of the 3 targeted conditions. Charts are randomly selected. In each practice 10 unique patient's charts are reviewed per provider for each of three conditions (30 charts per provider: 10 each for diabetes, hypertension and asthma). The chart review schedule, shown below, establishes baseline data, and a method to evaluate the impact of the full integrated services model as compared to more routine quality improvement efforts.

Figure 12.

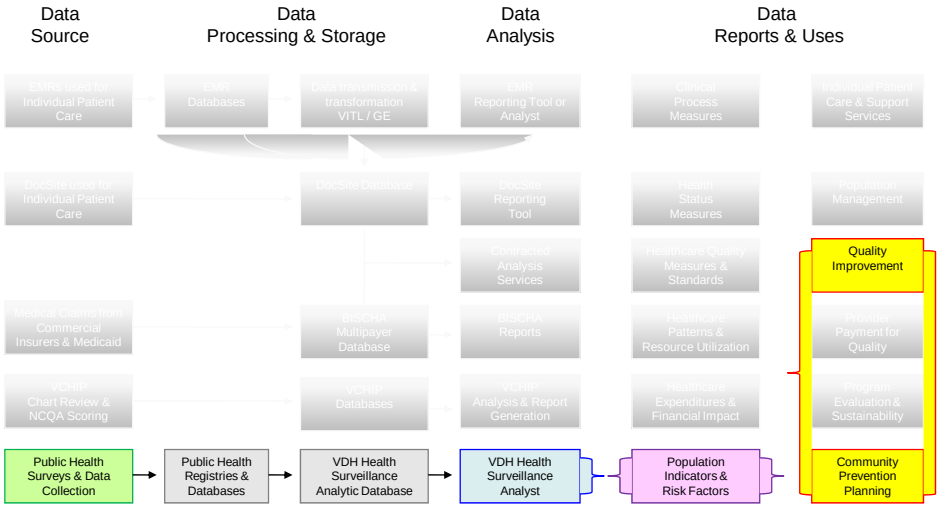


1. For the Patient Canter Medical Home pilot practices in St. Johnsbury, there was an approximately 3 month period, from August through October 2008, when the PCMH survey data collection and submission took place. For the two FAHC practices, this process occurred over a two month period from mid September to mid November 2008.

The chart review provides a robust evaluation of program impact on measures of health status and guideline based care. When combined with the NCQA PPC-PCMH scoring, these practice setting evaluations will provide novel insight into the relationship between health outcomes and national standards for a PCMH. This information will be extremely important given the acceptance of the NCQA PPC-PCMH standards as a basis for pilot programs and payment reform nationally.

Population Measures: The Blueprint and the Vermont Department of Health Public Health Statistics Section have worked together to develop a new reference analysis, the "Healthcare Cost Correlation and Hospital Charge Driver Analysis". This reports on indicators reflecting patterns of risk factors, morbidity, healthcare resource utilization, and drivers of healthcare costs. The analysis was conducted using aggregated data from several public health registries.

Figure 13. Framework for population indicators



The population measures produced by this analysis include associations that may not be evident without aggregating data sources that are usually separate. Data sources used to produce the report include are shown below.

Table 2. Data sources contributing to the Health Care Cost Correlation and Hospital Charge Driver Analysis

Organization / Data Source	Data Sets
Vermont Department of Banking, Insurance, Securities & Health Care Administration	Uniform Hospital Discharge Data Set
Vermont Department of Health	Adult Tobacco Survey
	Behavioral Risk Factor Surveillance System
	Population Estimates
	Vermont Physician Survey
	Youth Risk Behavior Survey
US Census Data	Census data set

The report includes detailed metrics and maps designed to show patterns and variability across Vermont. The information is intended as a reference to identify priorities and guide planning for a broad range of programs including; programs designed to reduce preventable risk factors, programs designed to improve the quality and cost effectiveness of health services, public health campaigns, and programs designed to reduce avoidable hospitalizations and emergency care. The report will be updated on a routine basis (yet to be determined) providing a systematic state level method to evaluate the impact of targeted strategies *and* change over time. It is important to note that this is the first publication of this report and these metrics. Input, feedback, and interpretation will be used to refine the report.

The Health Care Cost Correlation and Hospital Charge Driver Analysis report is attached to this report and includes the following information;

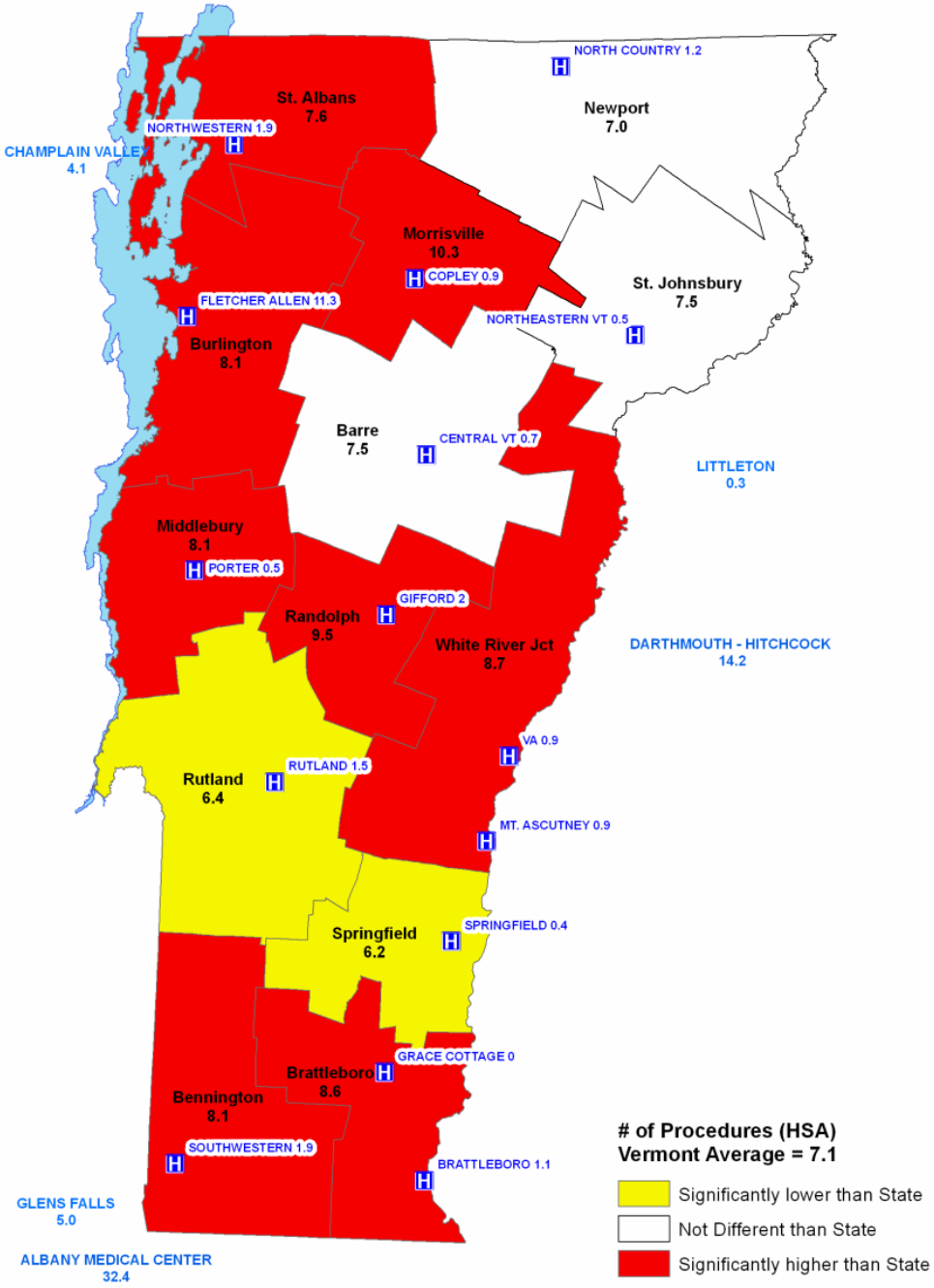
Section I- Associations with Change in Vermont Health Care Cost Per Capita
Section II- Factors Contributing to In-Patient Hospital Charges in Vermont
Section III- Analysis of Factors Contributing to High In-Patient Hospital Charges
Section IV- Overview of Hospitalizations 1997 – 2006
Section V- Procedure Data
Section VI- Diagnosis Data
Section VII- Demographics and Risk Factors by Hospital Service Area
Section VIII- Data by Condition

An example of how this report can be used is summarized. Part of the report includes a multivariate analysis to determine factors that are associated with high in-patient hospitalization charges (>$10,000). Length of stay, several categories of procedures, and the number of procedures are identified as contributors.

- Items with apparent charge predictive impact:
  - Days in the Hospital
  - Musculoskeletal, Cardiovascular, and Endocrine surgical procedures
  - Number of procedures
- Items with little predictive value:
  - Charlson Index (severity)
  - Type and/or Number of Diagnosis
  - Payment Method (type of coverage)
  - Hospital
  - Gender
  - With caveats: Age

Tables and maps are included that provide detailed information on these contributors to hospitalization charges (by hospital and hospital service area). If a decision were made to target cardiovascular disease, the data and maps could be used to plan interventions aimed at reducing morbidity, rates of unnecessary procedures, and charges related to poorly controlled disease. This could include a multi-faceted approach such as; a congestive heart failure disease management program that includes advanced technology for decision support and strategies to reduce re-admission rates, medical homes and community health teams focusing on preventive care for patients with or at risk for cardiovascular disease, Healthier Living Workshop availability, public health messaging campaign related to preventive behaviors & lifestyles, and hospital based quality improvement efforts to implement evidence based protocols and reduce the rates of unnecessary procedures (Figure 14). Maps can be used to target pilots and high risk populations. Updates to the analysis can be used to track change over time. These reports will stimulate new ideas, guide programs, inform health policy, and track progress.

Figure 14. Rate of Cardiovascular Procedures Performed Per 100 Hospitalizations

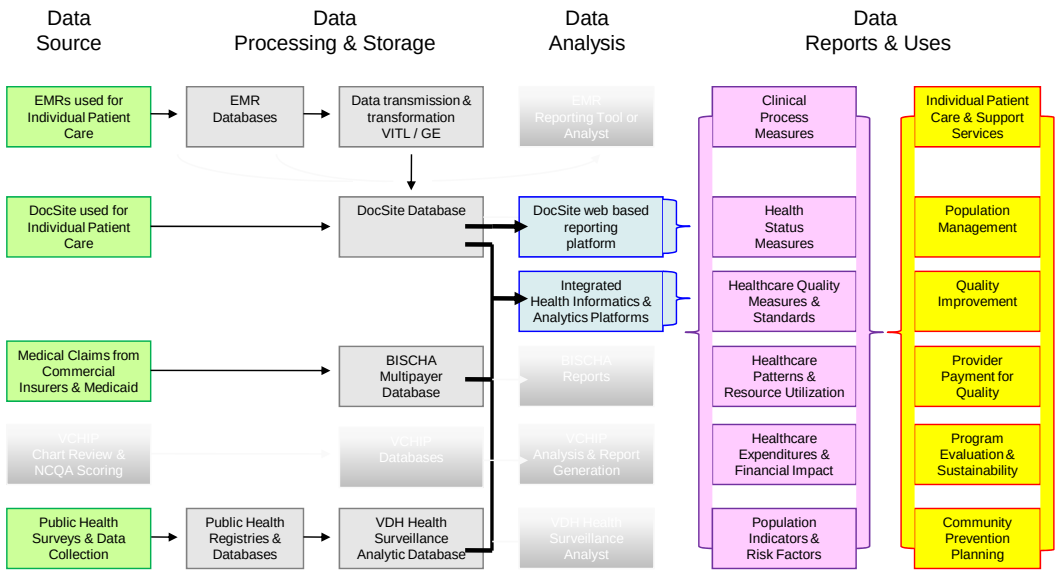


Health informatics and reporting platforms- The Blueprint is working to establish a durable infrastructure that can evaluate and guide Vermont's health reform efforts on an ongoing basis. The traditional approach to evaluation includes collecting and managing data, analyses, and reporting as a specialized research effort. The evaluation framework is designed to support such academic efforts, and much more. It establishes new data sources, and takes advantage of existing data sources, which are populated routinely as people do their normal daily work. It is also designed to take the next step and provide easy access to useful information that can be derived from these data sets. Substantial progress has been made towards the goal of web based reporting dashboards that are

flexible and dynamic. These types of reporting dashboards can be used to produce reports as they are needed to evaluate program impact and plan for moving forward. The first example is DocSite, the program's centralized clinical registry. As discussed above, this system includes a flexible and dynamic web based reporting dashboard. This dashboard provides decision support to help guide services for individuals and populations. It also provides access to reporting that can be used to guide planning and quality improvement. The dashboard is currently available to support clinical services and evaluation. There is a substantial amount of data available from sites that have established data transmission. The utility will be optimized as sites overcome barriers, and complete the IT work that is necessary to connect to VITL and transmit data (Health Information Infrastructure, section 1.6).

The Blueprint is working on developing similar capacity for claims and healthcare expenditure data. At present, planning is underway for an informatics platform that can handle claims data from multiple insurers, with a web based dashboard that supports flexible and dynamic reporting to evaluate patterns of healthcare and expenditures. Claims data is notoriously difficult to work with and analyze, consuming significant resources to produce analyses and reports. Vermont's multi-payer database establishes a source for well structured and normalized data. Reports are being generated by the multi-payer data base, however, each requires planning, funding, and time. The Blueprint is working to establish ready access to flexible reporting that make best use of this extraordinary data source. Ultimately, the goal is that this platform can be used to integrate different types of data to establish the most robust capacity for predictive modeling.

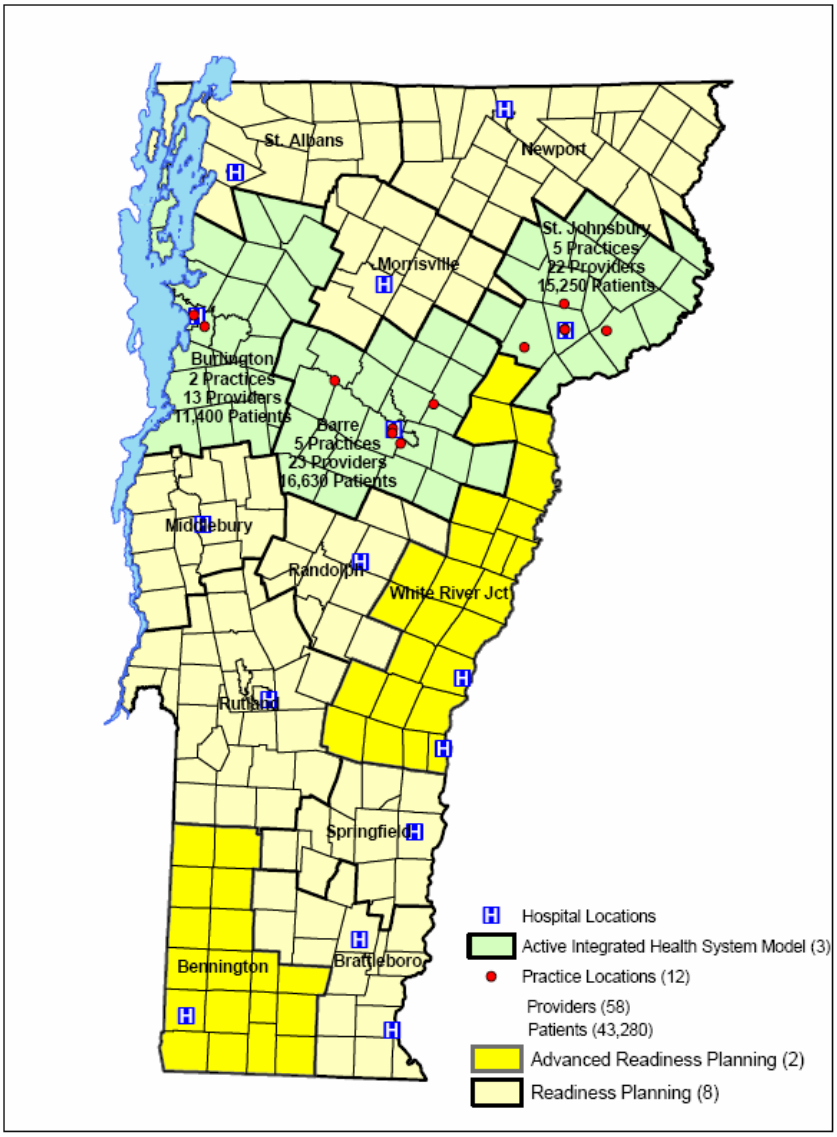
Figure 15. Architecture for web based reporting and integrated informatics.



2.0 Current Status of the Blueprint Integrated Health Services Pilots

2.1 Overview: This section summarizes key information related to pilot operations. A detailed description of the PCMH and CHT experience is provided in section 1.3. The Blueprint Integrated Health System model has been implemented in 3 pilot communities in Vermont. The first pilot started in the St Johnsbury Hospital Service Area (HSA) in July 2008. The second pilot started in the Burlington HSA in October 2008. The third pilot started in the Barre HSA in January of 2010. Collectively, these three pilot communities include 12 practice sites, 58 medical home providers, 3 community health teams, and an overall patient base of ~ 60,000 patients, with approximately 43,280 of these patients having been seen in the participating practices in the last 12 months. Patients who receive their care in these practices have the advantages that are offered by patient centered medical homes (PCMHs), community health teams (CHTs), payment reform, enhanced information technology, and access to comparative evaluation to help guide services and quality improvement. Other hospital service areas are working with the Blueprint to complete readiness work that is necessary to implement the Integrated Health Services model, which is at various stages across the state (Expansion Plans, sec 4.0).

Figure 16. Status of integrated pilots and stages of readiness across Vermont



2.2 Community Health Teams - Staffing, Funding and Community Linkages: Providers and program leaders have designed their CHTs to meet local need. All communities included staff to coordinate the CHT, conduct care coordination, support patients with behavioral counseling, and assist with access to social and economic services. Although payment reform supports 5 FTEs for every 20,000 patients, each community used this nucleus to form a larger functional CHT with existing and in-kind resources. The staffing, roles, and financial support for each of the CHTs is shown below.

Table 3. Community Health Teams in the Blueprint Integrated Pilot Program

		Barre HSA CHT			Burlington HSA CHT			St Johnsbury HSA CHT		
Discipline or training	Role	#	Hiring Organization	Funding Source	#	Hiring Organization	Funding Source	#	Hiring Organization	Funding Source
RN	CHT Coordinator	1.00	CVPHO	CVMC in-kind/continuation Grant	1.00	FAHC *also care coordination*	Insurers' shared costs for CHT	1.00	NVRH	Insurers' shared costs for CHT
RN or LPN, or other	Nurse Coordinator, panel management, care coordination	1.00	CVMC	Insurers' shared costs for CHT	2.00	FAHC	Insurers enhanced payment ($PPPM)	3.00	1 NVRH 2 NCHC	Insurers' shared costs for CHT
MSW or LCSW or LCBHS	Behavioral Health Specialist/Social Worker	2.00	CVMC	ADAP grant & Insurers' shared costs for CHT	2.00	FAHC	ADAP grant & Insurers' shared costs for CHT	3.00	1 NVRH 2 NCHC	ADAP grant, Insurers' shared costs for CHT, NCHC in-kind
MSW, Peer, other	Health Coach Health Educator Community Health Worker	1.00	CVMC	Insurers' shared costs for CHT	1.00	FAHC	Insurers' shared costs for CHT	3.00	NVRH	Insurers' shared costs for CHT, NVRH in-kind
Registered Dietician or Certified Diabetic Educator	Nutritional counseling				Per diem	FAHC	Insurers' shared costs for CHT			
Medical Assistant or other	Administrative Support - Data entry, secretarial duties	1.00	CVMC	Insurers' shared costs for CHT	2.00	FAHC	Insurers' shared costs for CHT			
Physical Trainer	Physical Activity Coach				Per diem	YMCA	Insurers' shared costs for CHT			
MPH or MHA	Public Health Specialist	1.00	VDH	VDH	1.00	VDH	VDH	1.00	VDH	VDH

These teams provide invaluable support for patients and families. In addition to care coordination, the teams assist with linkages to a broad range of social, economic, and human services. In each community, the teams have interacted with a wide range of organizations to improve access to essential services. Detailed discussion of the CHTs, activity, along with examples of patient and provider experience, are provided in the section describing the medical home and community health team model (section 1.3). The inclusive list of organizations that each CHT interacts with is shown in Table 4.

Table 4. Health Team service partners and community linkages

Barre HSA CHT	Burlington HSA CHT	St Johnsbury HSA CHT
Agencies Currently Involved • VT Department of Health • VT Agency of Human Services • Washington County Mental health • Central Vermont Home Health and Hospice • Council on Aging • OVHA • Healthier Living Workshops • Northfield Rotary • Montpelier Rotary • Barre Rotary • Montpelier Kiwanis • CVMC Rehabilitation Services • CVMC Cardiac Rehab • CVMC Outpatient Diabetic Education • CVMC Tobacco Cessation • Confluence Gym • Jazzercise • Body Tech • Ladies Work Out Express • Snap Fitness • First in Fitness • Choices for Care • Fletcher Allen Healthcare • NVRH • Health Insurance Payers • Hospital Patient Assistance Programs Agencies to be contacted • Good Samaritan Haven • Affordable Dentures • Lifeline • Barre Housing Authority • Montpelier Housing Authority • VT Center for Independent Living • Voc rehab • VT 2-1-1 • Four Seasons • Gary Home • Pioneer apartments • North Barre Manor • Tilden House • Lincon House • Alzheimer's Associateion • WCMH Screeners • Cota's CCH • Westview Meadows • Fortier's CCH • Armisted • PNS/Bayada • Home Share • CVMC Case Management • Washington County Food Shelf • Vermont Technical College • VT Legal Aid • GMTA • DCF • American Cancer Society • Private Mental Health Clinicians	• VT Agency of Human Services • VT Department of Health • Women Helping Battered Women • COTS • Community Health Center of Burlington • 9 Fletcher Allen Primary Care and Family Medicine Practices • Lenscrafters • Pearl Vision • Vermont Dental • Affordable Dentures • Lifeline • CVOEO • Burlington Housing Authority • Champlain Valley Housing • Cathedral Square Hosing • Howard Center • VT Choices for Care • Catamount Health • OVHA (Medicaid) • Champlain Agency on Aging • United Way of Chittenden County • Vermont 2-1-1 • Healthier Living Workshops • Matter of Balance Workshops • Burlington YMCA • Hammerfit • Vermont Regional Diabetes Center • Visiting Nurses Association • Armistead • Vermont Respite House • Home Instead • Home Share • Fletcher Allen Health Care Case Management • VCCU • Vt. Voc Rehab • Chittenden County Food Shelf • Vt Dept. of Corrections • Essex Family Dental • Vermont Technical College Dental Hygiene Program • VRRP • Howard Crisis Services • Mercy Connections • Missions for Independence • Safe Harbor • Vermont Legal Aid • Vermont Center for Crime and Victim Services • Good Samaritan Network • JUMP • CCTA • SSTA • Angel Flights • DCF • American Cancer Society • American Diabetes Assoc. • American Parkinson's Disease Assoc • Neighbor keepers • Vt Association of the Blind and	• Vermont Department of Health • VT Agency of Human Services • Northeastern Vermont Regional Hospital • Dartmouth Hitchcock Medical Center • Fletcher Allen Health Care • North Country Hospital • Women's Wellness Center • St. Johnsbury Pediatrics • Eye Associates • Optical Expressions • VT Dept Employment and Training • Vermont Vocational Rehab • local churches • St. Johnsbury Recreation Dept • Land Lord Association • Veterans Association • Project HOPE • VT Dept Economic Services • Social Security • Lund House • Affordable Dentures • area food shelves • Life Line • Northeast Kingdom Human Services • Community Therapists • VT Choices For Care • Northeast Kingdom Youth Services • VT Office Economic Services • Northeast Kingdom Community Action • Umbrella, Inc (domestic violence and child care coordination) • Pearson Funeral Home • ALS Society • VT State Housing • Sen. Bernie Sanders Office • Riverside Adult Day Care • Child Care Circuit • Catamount Health • Tapestry (Brattleboro) • VT Dept of Corrections • St. Johnsbury Town Manager • Area town health officers • Vermont Independent Living • Habitat for Humanity • St Johnsbury Academy • local schools • Health Insurance Payers • Hospital Patient Assistance Programs • Parenting Classes (Rocking Horse) • Holiday programs (Santa Fund, Hand to Hand) • Rural Community Transportation • St. Johnsbury Dialysis Center • Division of the Blind • Emergency Housing(SHELTERS), • Food and Fuel Workgroup • American Cancer Society • Long term care facilities

• Salvation Army • United Way • Maple Leaf Farm • Central Vermont Substance Abuse • Turning Point • Catamount Health • Synergy • Act 1		Visually Impaired • Salvation Army • Private mental Health clinicians • Maple Leaf Farm • Housing Resource Center • Law Line at Champlain College • University of Vermont • Parallel Justice Program • Bi-State Primary Care Association		• Salvation Army • Northeast Kingdom Micro Business (budgeting workshops), • Northeast Vermont Area Agency On Aging, • Home health agencies • Hospice • Faith in Action • Gilman Housing Trust • Lyndon State College • Community Justice Center • VT Legal Aide • Joshua's House • March of Dimes • Palliative Care Team • Vermont Public Service Board • Fit and Healthy Coalition • Tobacco Coalition • Substance Abuse Coalition (Together Works) • Diabetes Self-Management Education • Asthma Management Program • Cardiac and Pulmonary Rehab • Area dentists • VT Office of Vermont Health Access • Healthier Living Workshops

2.3 Early Trends in Hospitalizations & Emergency Care: The Integrated Pilots have not been operating long enough to adequately evaluate their true clinical and financial impacts. In addition, the program's data sources have not sufficiently matured to be a source for a thorough evaluation. The centralized clinical registry (DocSite) is receiving data from some sites and not others as the health information infrastructure is being developed (Health Information Infrastructure, section 1.6). The multi-payer database is receiving claims data from commercial payers, but not from Medicaid (Evaluation Infrastructure, section 1.7). Chart reviews have extensive baseline data over a two year period. Data reflecting the first year of operations for two pilot communities is being collected.

As these data sources develop, the Blueprint has taken interim steps to begin looking at trends in hospitalizations and emergency department visits in the first two pilot communities. In each community, hospitalization and emergency department (ED) visit data was provided for patients with a primary care provider in the two largest medical home practices. This includes the Corner Medical practice data provided by Northeastern Vermont Regional Hospital in the St. Johnsbury HSA, and the Aesculapius practice data from FAHC in the Burlington HSA. The data includes patients $\geq$ 18 years of age, identified in the organizations data base as having a primary care provider in the medical home practice. The monthly rate of hospitalizations and emergency department visits for these patients is provided for calendar years 2007, 2008, and 2009. As a measure of overall caseload, each site also provided the number of unique patients with a visit to the medical home practice, each month, for the same three year time period. These data were used to evaluate the 3 year trend in hospitalizations and ED visits. Overall monthly trends, and the rate of hospitalizations and ED visits per 100 patients were evaluated. Several caveats are worth noting. The data is supplied from different sources which may be affected by different coding and collection practices. Since this is an early snapshot, with time and resource limitations at each site, several potential confounding variables

were not controlled for including; age, gender, severity of underlying health conditions, length of pilot operations, and the degree to which these patients received care in the medical home during the pilot and pre-pilot periods. Nevertheless, the Blueprint is committed to tracking early trends even as our structured data sources are populated, and the pilots operate for a sufficient period of time to support a highly structured evaluation.

Figure 17a. ED admission rates, among identified Corner Medical patients

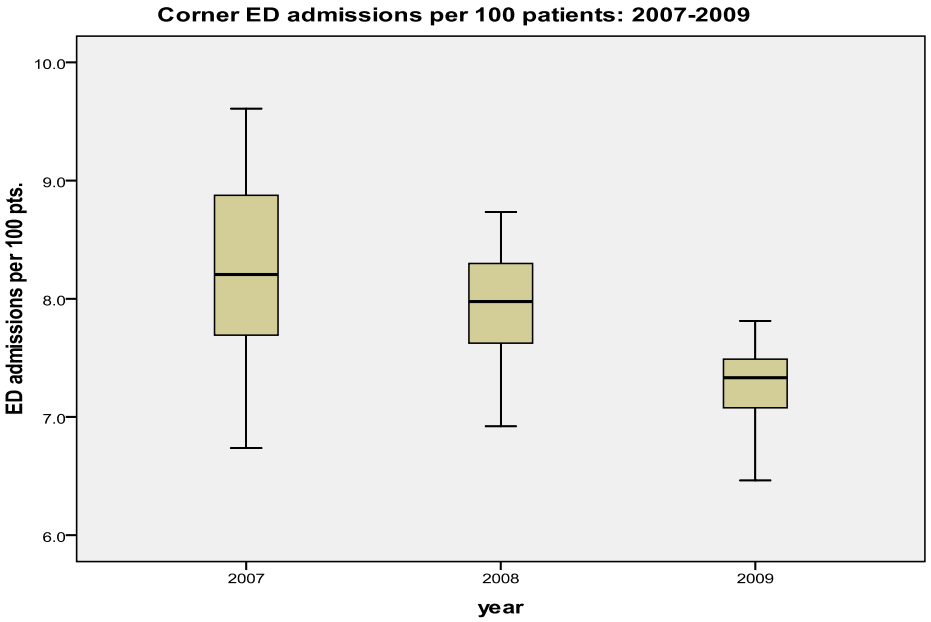


Figure 17b. Inpatient admission rates, among identified Corner Medical patients

Figure 17a (above) shows trends in overall ED admission rates, among identified Corner Medical patients, from 2007-2009. The 2009 data does not include the December numbers. The dark lines in the middle of this (and all subsequent) box plots represent the

medians for each year's distribution of monthly ED admissions rates. A one way ANOVA of these data showed a significant overall effect (p=.002) of year, and post-hoc tests revealed that rates in 2009 were lower than the rates in both 2007 and 2008.

Figure 17b (above) shows trends in inpatient admission rates, among identified Corner Medical patients, from 2007-2009. The 2009 data does not include the December numbers. A one way ANOVA of these data showed a significant main effect of year (p=.048), and post hoc tests showed that inpatient admission rates in 2009 were significantly lower than in 2007, but that the rates in 2009 did not differ from those in 2008.

Figure 18a. ED admission rates among identified Aesculapius patients

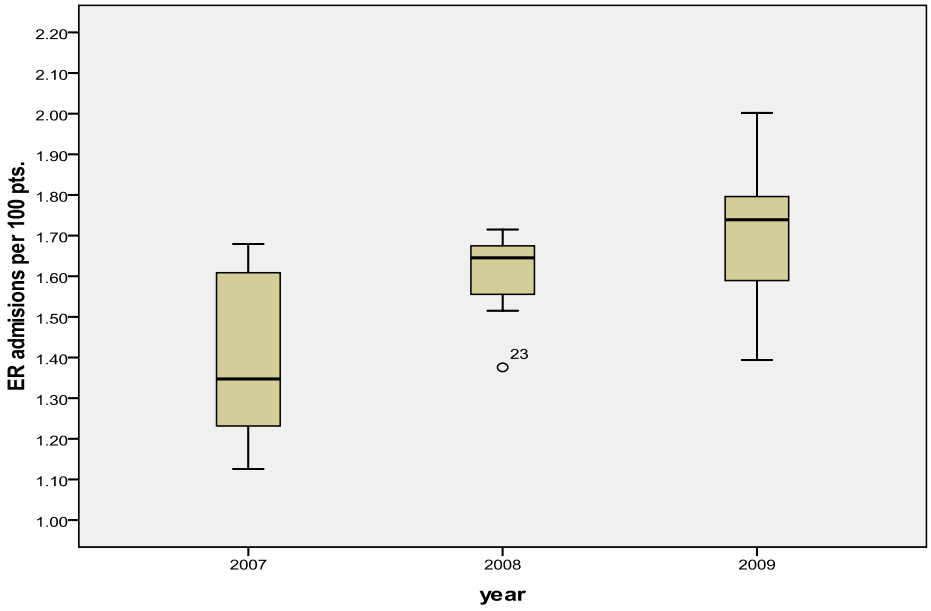


Figure 18b. Inpatient admission rates among identified Aesculapius patients

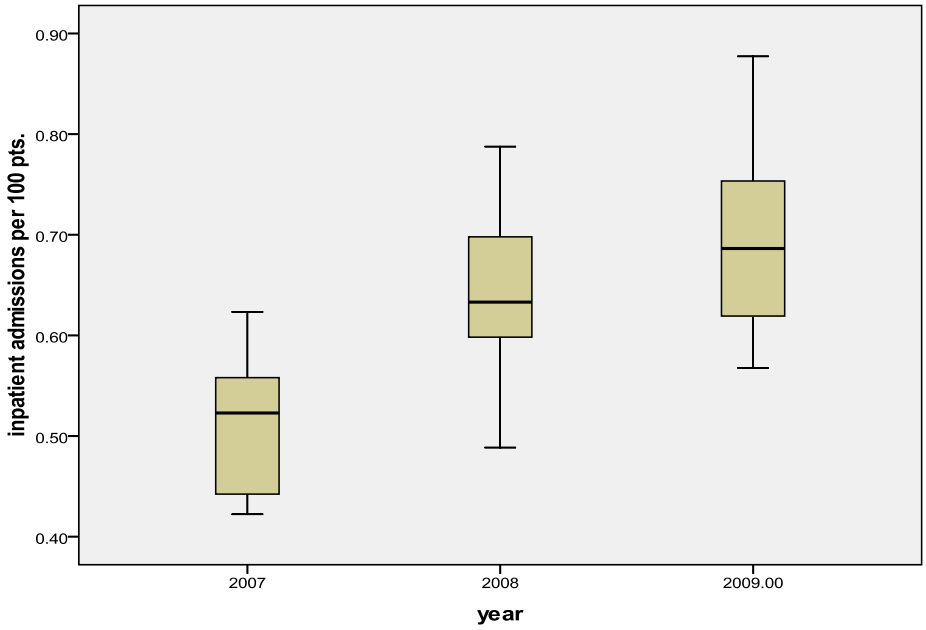


Figure 18a (above) shows the distributions of monthly ED admissions rates for Aesculapius patients, broken out by year. A one way ANOVA showed a significant overall effect of year (p=.001) and post hoc tests revealed that both 2008 and 2009 ED admission rates were higher than the 2007 rate, but the rates for 2008 and 2009 did not differ from each other.

Figure 18b (above) summarizes the distributions of monthly inpatient admissions data for Aesculapius, broken out by year. A one way ANOVA showed an overall significant effect of year (p=.001), and post hoc tests showed that the rates for both 2008 and 2009 were significantly higher than for 2007. The rates for 2008 and 2009 did not differ from each other.

These results provide an overall look at the rates of emergency department visits, and inpatient admissions, for patients identified with a primary care provider in two medical home practices. It is not clear if these results reflect changing trends, as in a slowing or reduction in unplanned acute care. More detailed and controlled analyses will be conducted this year as data sources populate and pilot operations have more time to influence clinical and financial outcomes. In any respect, these early trends are promising, as a reduction in avoidable acute care is an important part of the Blueprint's financial sustainability model.

2.4 Baseline NCQA Scores & Associations: Each medical home practice is objectively and independently scored against nationally accepted standards for a patient centered medical home. The practices are scored using the National Committee for Quality Assurance Physician Practice Connection – Patient Centered Medical Home (NCQA PPC-PCMH) standards. The University of Vermont based Vermont Child Health Improvement Program (VCHIP) completes the scoring at baseline and subsequently every 6 to 12 months. These scores are used to guide enhanced payment to practices that qualify as a patient centered medical home score (Payment Reform, section 1.4). The standards are based on the quality of patient centric care that is delivered in a practice. They can achieve a score from 0 – 100 points and also must achieve must pass elements.

As an example, the standards and the baseline scores for practices in the first two pilot communities are shown below (Table 5). This display is intended to demonstrate how scoring relates to each quality standard, the potential score that practices can achieve along with actual scores, and how this relates to payment. Practices then use the results from the detailed scoring survey to plan quality improvement as a medical home. Each quality standard is based on detailed elements that are defined in the NCQA PPC-PCMH scoring survey. Most important, the elements that make up these standards provide specific targets for planning improvement that are directly linked with payment.

Table 5. Baseline NCQA medical home scores for the first two pilot communities

			Pilot Community 1		Pilot Community 2				
	Standard	Possible Points	Practice 1	Practice 2	Practice 3	Practice 4	Practice 5	Practice 6	Practice 7
1	Access and Communication	9	5.5	5.5	6.5	6.5	5.5	6.75	4.25
2	Patient Tracking and Registry Functions	21	15.25	12.25	20.5	20.5	20.5	19	21
3	Care Management	20	19.25	17.75	20	20	18.5	20	15.25
4	Patient Self-Management Support	6	4	1	2	1	3	2	1
5	Electronic Prescribing	8	0	1.5	2.75	3	2.75	5.75	2.25
6	Test Tracking	13	8	3	11.5	11.5	11.5	11.5	4.5
7	Referral Tracking	4	3	0	4	4	3	3	3
8	Performance Reporting and Improvement	15	13.5	10	12	15	12	13.5	13.5
9	Advanced Electronic Communication	4	0	0	0	0	0	0	0
	total points	100	68.5	51	79.25	81.5	76.75	81.5	64.75
	total Must-Pass Elements	10	10	7	10	10	10	10	6
	Practice NCQA PCC-PCMH level		2	1	3	1	3	3	1
	Per-Patient, Per-Month Payment		$1.84	$1.52	$2.07	$1.52	$2.00	$2.07	$1.52

The Blueprint is working with VCHIP to gain a better understand how the NCQA quality standards relate to actual measures of patient health, health care practices, and enhanced self management practices. NCQA scores are being compared to the results from chart reviews that are also conducted by VCHIP (Evaluation Infrastructure, section 1.7). The results from these types of analyses can be used to learn if relationships exist and to help guide improved healthcare quality. As examples, results are shown for baseline NCQA medical home scores and several health practice measures for the care of patients with Diabetes (Figure 19).

Figure 19a. Baseline NCQA PPC-PCMH scores and Hgb AIC assessments

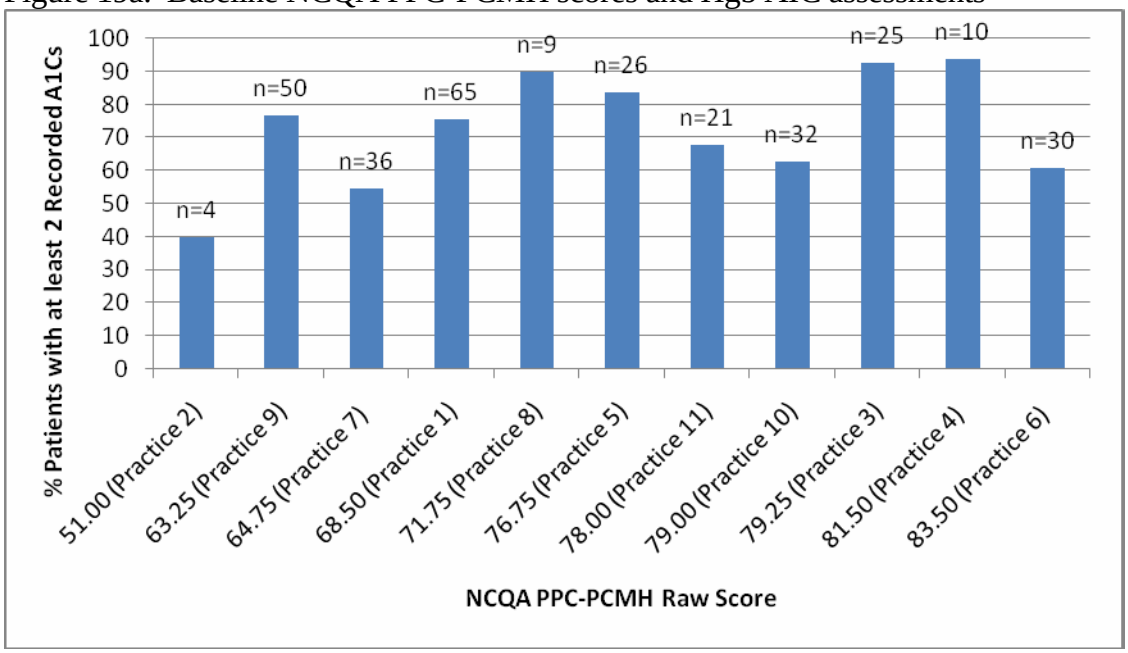


Figure 19b. Baseline NCQA PPC-PCMH scores and LDL assessments

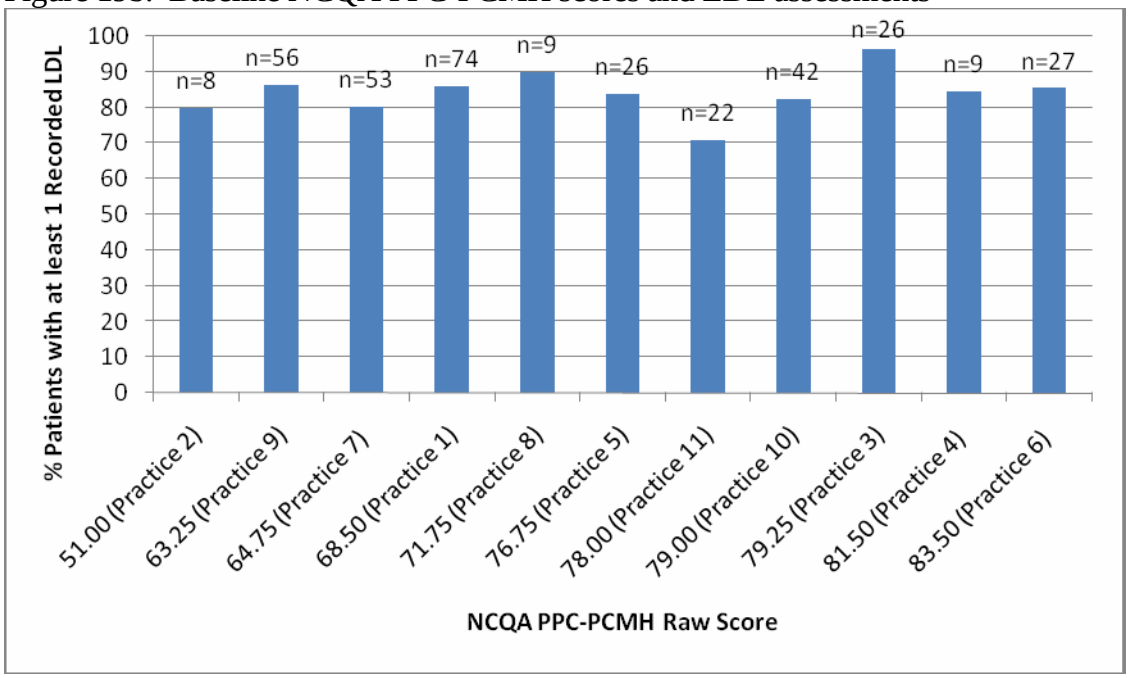


Figure 19c. Baseline NCQA PPC-PCMH scores and BMI assessments

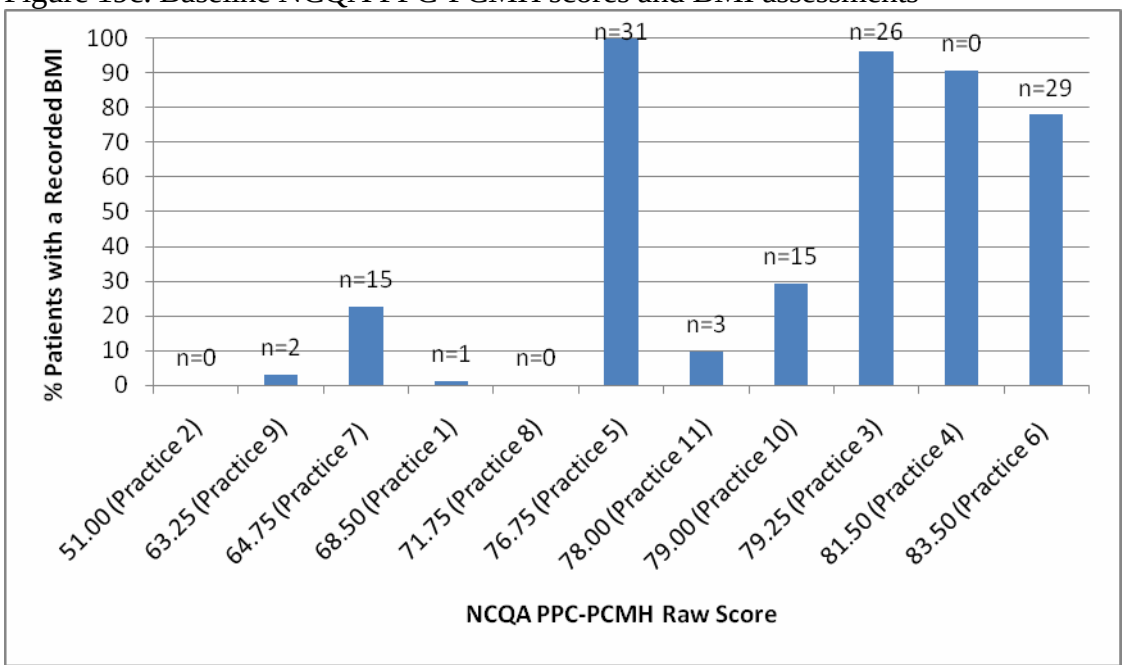
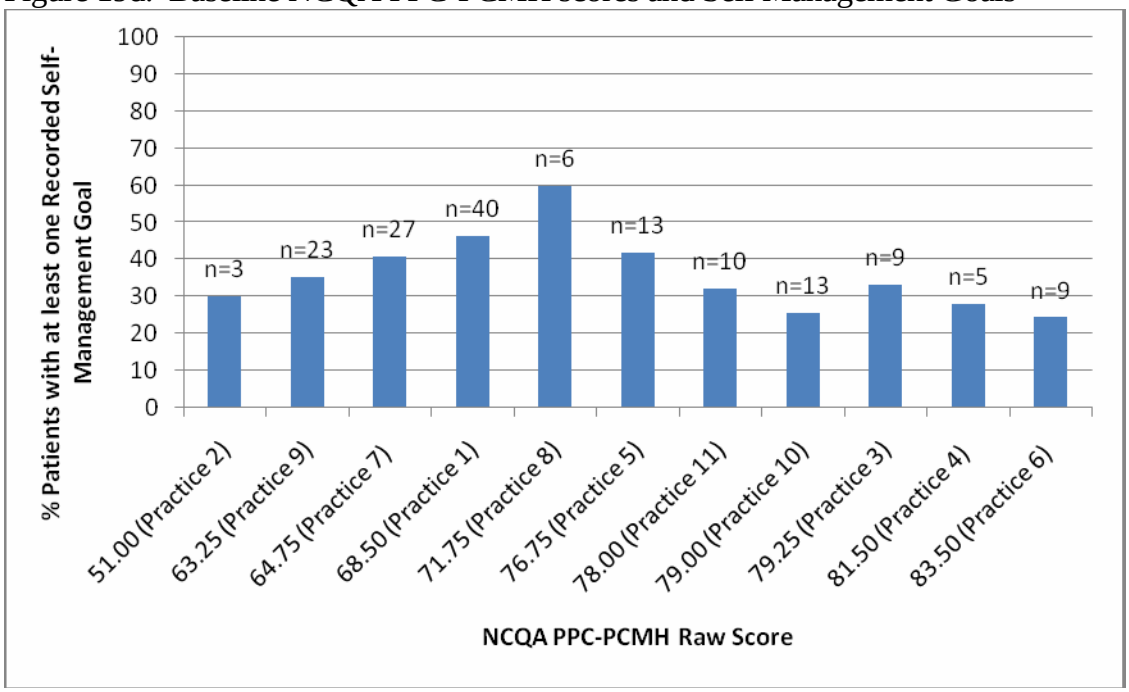


Figure 19d. Baseline NCQA PPC-PCMH scores and Self Management Goals

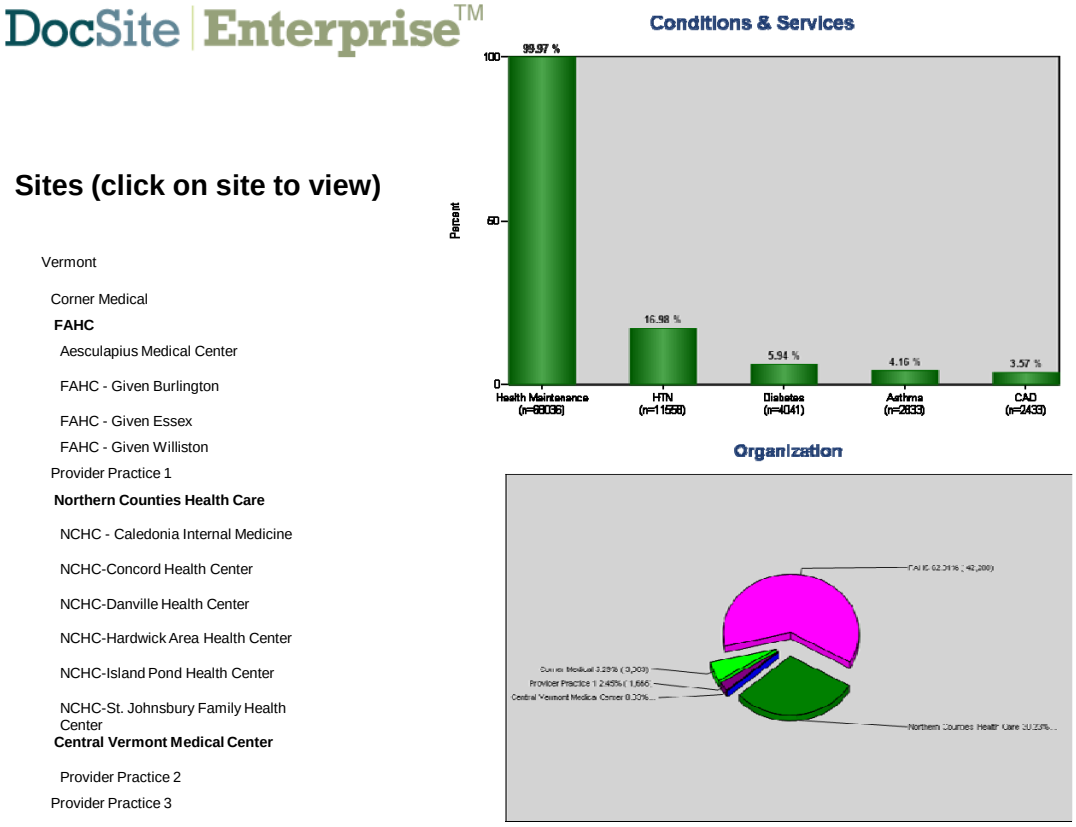


These are selected examples of a broader analysis examining the relationship between medical home standards, and meausres of clinical practices and health status. Baseline and change over time assessments will give insight and guidance on how to improve healthcare quality and health status outcomes in an Advanced Model of Primary Care.

2.5 Health Information Technology & Quality Improvement: The Blueprint's Health Information and Evaluation Infrastructures have been designed to support a sustainable process for guiding ongoing quality improvement (Sections 1.6 and 1.7). The architecture, where data is fed thru the VITL Health Information Exchange to a centralized registry, is designed to support patient care, care coordination by CHTs and PCMHs, evaluation, and ongoing quality improvement. This infrastructure is under development and is beginning to be populated by data from several EMRs and hospital sources. It is important to note that data is not consistently being fed by all sites due to development complexities described in Section 1.6. However, the Blueprint and VITL continue to work to develop connections to EMRs and hospital data sources, and automated feeds thru the HIE to the centralized registry (DocSite).

Currently, data on more than 60,000 patients has been transmitted into the registry. DocSite's reporting dashboard can be used to view, sort, and filter data. Sites with more complete data are using the system for care delivery, panel management, and quality improvement. A view from one section of the DocSite reporting dashboard is shown below, displaying how sites can be selected, and results can be selected for measures of health maintenance and prevention, hypertension, diabetes, asthma, and coronary artery disease (Figure 20).

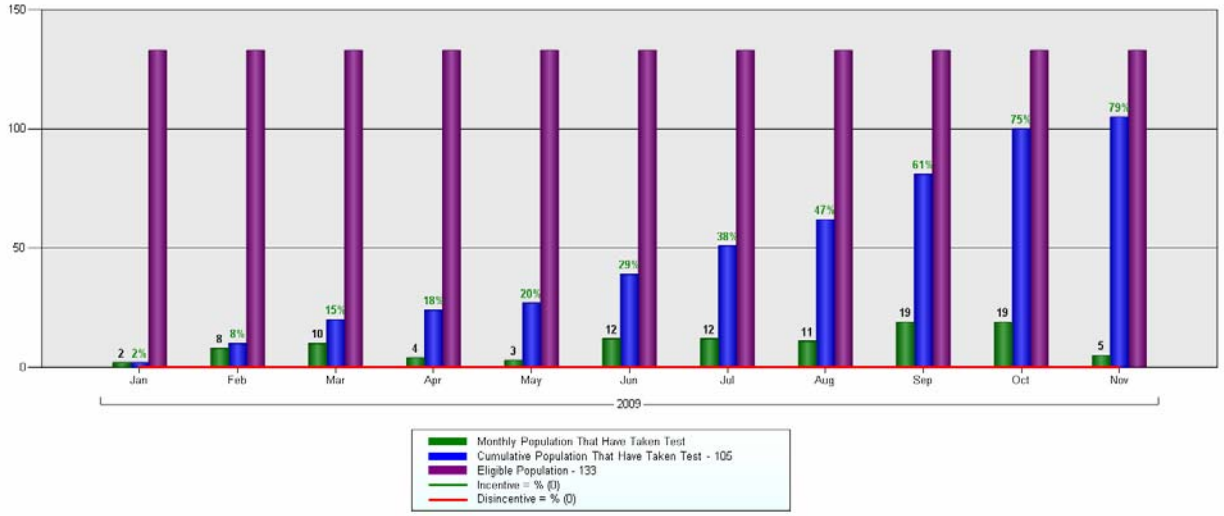
Figure 20. Example of reporting dashboard



One click on the selected category (Health Maintenance, Hypertension, Diabetes, Asthma, Coronary Artery Disease) shows all measures for the selected level (State, Organization, Site, Provider). The results of any measure can be clicked to bring up reports for panel management or evaluation of healthcare quality.

An example of a report for an individual provider is shown below. This shows the rate at which the provider's patients with diabetes are receiving recommended A1C assessments during the course of the year (Figure 21). Reports such as this are easily generated. With one or two clicks, this report can be shifted to a list of the patients who are missing their A1C assessment or who aren't at goal. This type of flexible and readily accessible reporting, directly links patient care with quality improvement indicators. Planning within practices and organizations can focus on patient groups that need attention, and health practices that need improvement.

Figure 21. Quality report showing the rate that a provider's patient panel with Diabetes receives AIC assessments.



These are a few examples of how payment reform, a clinical model, a health information infrastructure, and an evaluation infrastructure are developing and aligning as part of the Blueprint Integrated Health Services model. In 2010, the Blueprint will be producing a more complete set of analyses and reports that can be used to evaluate program status and guide ongoing improvement as well as policy.

3.0 Blueprint Integrated Health Services Financial Impact Model

3.1 Purpose: The purpose of the Blueprint for Health Medical Home financial model was to provide a tool to project and track the financial performance of the Integrated Health Services (IHS) model (Section 1.0). The financial model is useful not only as an important component of the business plan for rolling out the Integrated Health Services Model, but also as a communication tool in describing the potential cost/benefit of the program with policy makers and other interested parties.

3.2 The Process: A small project team was formed consisting of the Director and Associate Director of the Vermont Blueprint for Health, a research associate, and an outside consultant. The Director and Associate Director provided project oversight and input to the model. The research associate performed research into existing clinical work potentially relevant to the medical home concept. The outside consultant was primarily responsible for the design and implementation of the model itself.

Once underway, the early stage of the project focused on search for prior relevant work. Clinical research targeted cost/benefit outcomes from other projects nationally, the results

of which were particularly helpful in testing the model's intervention impact assumptions. Several approaches toward modeling medical home projects were found. None of those models, however, provided the degree of flexibility and features that the project team had specified as essential to the end product. The next stage of the project focused on the design of the model. Once the basic architecture was agreed upon, coding of the model took place. Upon completion of the draft model, it was vetted by a larger group of stakeholders, including payers, providers, regulators and policy makers. The draft model was then finalized incorporating those suggestions.

3.3 Model Architecture: The basic goal behind the model architecture is measuring the bending of the cost curve, resulting from the Blueprint Integrated Health Services (HIS) interventions over time. The model establishes a baseline of existing and projected expenditures by major category within the delivery system. It then defines and projects the target population of the medical home project. As the pilot programs roll out, the model projects the financial impact of program clinical interventions on the target population based upon the best estimates and the results of literature search. It then calculates the difference between baseline cost per capita and the medical home participant cost per capita, establishing participant savings versus baseline over time. The model then projects Blueprint IHS program costs and calculates a Return on Investment ("ROI") based on savings versus investment. Finally the model makes modifications to the ROI calculation based upon various sensitivity analysis scenarios.

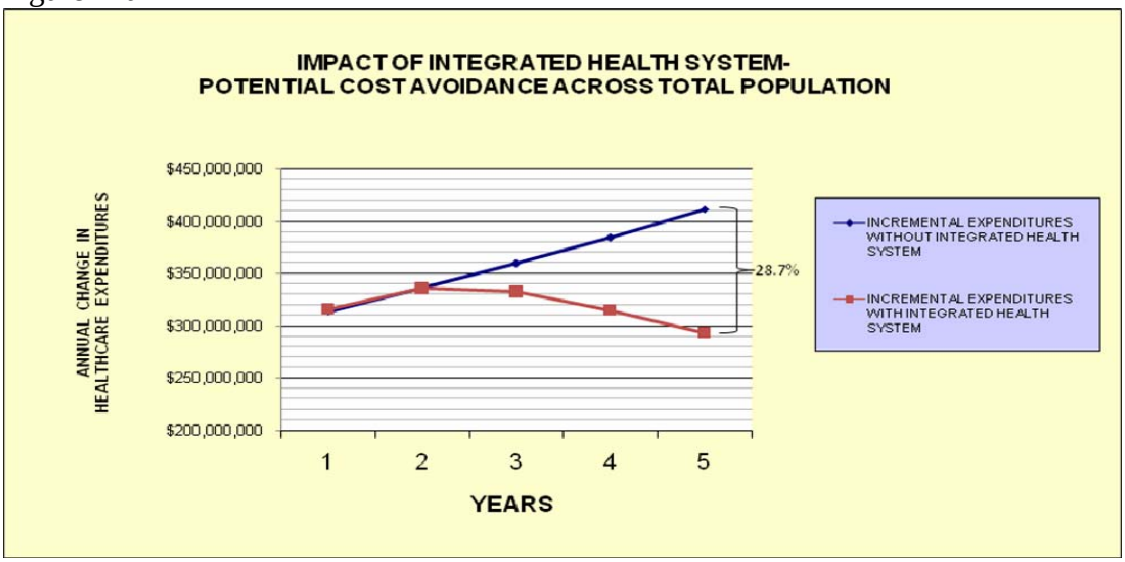
The overall model is interactive and linked with the rollout of pilot communities and their associated budgets. It also incorporates a look-up table that ties payer incentive compensation to NCQA PPC-PCMH rating of physician office practices (Payment Reform, section 1.4). The Impact of Interventions section of the model serves as the engine to test changes in estimates of future savings based upon either better estimates of program impact or actual results. The chart at the end of the model graphically depicts the deflection, or bending, of the cost curve for the target population versus the baseline over time.

3.4 Challenges: A number of challenges were faced by the project team along the way. Data collection to establish baseline expenditures in the categories required by the model was one such hurdle. Payer participation was required to provide accurate breakout of certain expenditure categories, which, in itself, presented the challenge of ensuring consistent comparison and integrity of the data. Gaining comfort with appropriate intervention assumptions was a demanding iterative process, combining the best estimates resulting from the literature search and stakeholder input. Developing a feedback loop reflecting actual results required flagging of medical home participant records and associated sensitivity to both data integrity and privacy issues. Finally, there was, and continues to be, the challenge of managing expectations on uses of the model. It must be recognized that the model is strictly a tool for projecting future, and ultimately measuring actual, results from the Blueprint interventions, and is only as good as the data collected and underlying assumptions that drive it.

3.5 Estimates and Tracking: The financial model will be used to track outcomes and to help determine whether Blueprint IHS helps to reduce the rate at which healthcare costs are growing. The model will be populated with data from Vermont's multi-payer database (VHCURES), which is currently populated on a regular basis with commercial

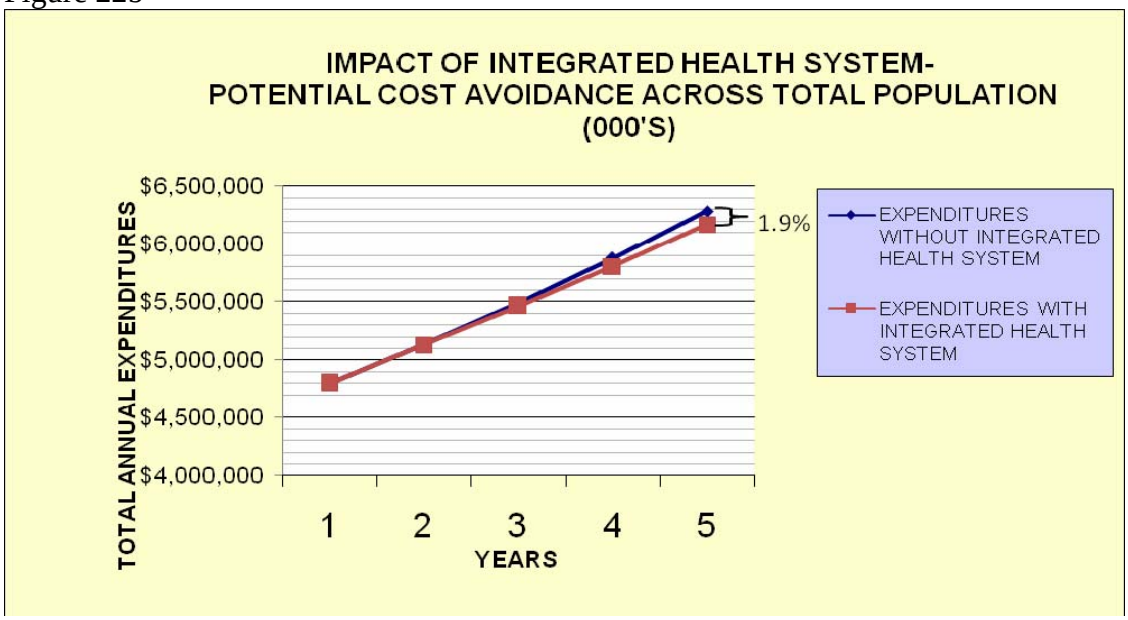
payer data (Medicare and Medicaid data are lagging). As the model is loaded with actual data, the results will be compared to initial projections laying the foundation for re-forecasting future results. The model takes into account a proposed expansion plan (Expansion Plan, section 4.0), and the investment through the multi-insurer payment reform necessary to support PCMHs and CHTs (Payment Reform, section 1.4). The model incorporates two major financial offsets. The first is a cumulative reduction in avoidable hospitalizations and emergency department visits. Second, insurers shift their current expenditures on disease management programs, and use these monies to support local CHTs starting in the third year of the program. With these offsets, the Blueprint IHS is expected to improve control over escalating healthcare costs as the program expands statewide. Estimated impact on the annual change in healthcare costs (Figures 22a), and total annual healthcare expenditures is shown (Figure 22b).

Figure 22a



Target Population	42,179	126,286	316,662	508,17	637,130
% of VT Population	6.7%	20%	50%	80%	100%
# CHTs	2	6	16	25	32

Figure 22b



4.0 Program Expansion

4.1 Expansion of the Integrated Health Services Model across Vermont: The Blueprint Integrated Health Services (IHS) model is designed to improve the health of the population, and improve control over escalating healthcare costs. Pilots have been implemented in 3 Hospital Service Areas (HSAs) that include multi-insurer payment reform, medical homes supported by community health teams (CHTs), expanded use of health information technology, and an evaluation infrastructure designed to determine program impact and guide ongoing quality improvement. The Blueprint model starts with a relatively comprehensive approach that will support an Advanced Model of Primary Care, establishing a rationale foundation for broader restructuring of healthcare delivery. Multi-insurer payment reform, that supports medical homes and community health teams, has stimulated interest among providers across Vermont, and set the stage for statewide expansion. This interest extends beyond the natural attraction that would be expected for primary care providers to include hospitals. Multi-insurer payment reform means that hospitals can re-examine how they look at primary care, which has traditionally been difficult to support financially due to low fee for service reimbursement. With adequate financial support, hospitals can consider expanding primary care networks in their HSA, and may even consider a transition towards a business model that begins to balance primary care, specialty care, and acute care resources based on a communities need. To date, high reimbursement rates for acute care and specialty care has led hospitals to emphasize these services, while low reimbursement has de-emphasized preventive services. The Blueprint model has initiated a shift with insurers investing in primary care and prevention, providing an opportunity for providers to recalibrate their predictable emphasis on well reimbursed services for people who are already sick.

Financial Support for Expansion- In this environment, the Vermont Association of Hospitals and Health Systems (VAHHS) Board unanimously supported a motion that all acute care hospitals would provide strong leadership in their community to expand the

Blueprint Integrated Health Services Model into all hospital service areas by July 2010. VAHHS supported efforts to add funds to the state budget to support Blueprint expansion statewide, reflecting the commitment to utilizing the Blueprint for substantive transformation of our health care delivery and payment system. The Fiscal Year 2010 appropriation is being used to support medical home and community health team preparations statewide.

4.2 Readiness Work & Planning for Expansion: Expansion of payment reform requires participation of Vermont's insurers, and ideally the participation of Medicare as part of multi-insurer payment reform. Active negotiations and planning is underway for these steps. The readiness work in each HSA will allow a faster and more efficient roll out of the model should insurers agree to expansion. The goal is to establish a set of primary care practices in each HSA that are ready to operate as medical homes, with plans in place for a local CHT, better coordination across existing community services, and a health information infrastructure that supports well coordinated care and panel management. Given Vermont's healthcare landscape, and the experience with the Integrated Pilots, the best route to achieve these goals is to work closely with hospitals and practices in each HSA to establish operations. The steps that are involved to set up medical home and community health team operations are outlined.

- Conduct presentations and discussion sessions with key stakeholders in each HSA. These sessions include hospital administrators, primary care providers, other clinicians such as care coordinators and social workers, local public health personnel, and information technology personnel. Participants are provided an opportunity for detailed understanding of the Blueprint model. With this information, the local stakeholders can identify the participants for planning and implementation of the model. The number of presentations and meeting sessions may vary in each community in order to build consensus, momentum, and understanding.
- Identify a select number of primary care practices in each HSA to participate. The number of practices in each HSA varies and may depend on a number of complex cultural and business issues including; whether a practice is affiliated with a hospital or other organization with administrative and technical support, whether the clinicians feel overwhelmed by their work load, whether the clinicians are cautious regarding substantive change and want to see how things progress in other practices, or whether a practice is already in the middle of significant change such as implementing an electronic medical record.
- Identify key personnel for two parallel planning and work processes. This includes planning and implementation of the health information infrastructure. It also includes planning for PCMH and CHT operations. For each of these processes, planning is likely to include lead contacts from the hospital, practices, local public health office, and other service organizations.
- Health information infrastructure work includes;
    - Identify important data sources in the practices and hospital that should be integrated through the VITL / GE health information exchange (e.g. practices' EMRs and hospital data sources).

  - Map existing EMRs and data sources against core Blueprint data elements (Health Maintenance & Prevention, Asthma, Diabetes, HTN)
  - Update EMRs against core data elements and answer options to assure structured data entry for key measures that will be used for individual patient care, population management, and program evaluation.
  - Practices that do not have an EMR will be provided licenses to use DocSite directly to support individual patient care
  - Develop interfaces between practices, hospitals, and VITL / GE health information exchange
  - Establish data transmission of core Blueprint measures from data sources through VITL / GE to DocSite
  - Conduct quality testing on transmitted data and reports generated
  - Establish functional DocSite reporting that works across organizations and clinical tracking systems.
- Clinical and health services work includes;
  - Clinicians participate in learning collaboratives and practice transformation training that is aligned with NCQA PPC-PCMH standards
  - Identify existing personnel in the community who can work and coordinate with the core CHT that will be supported by payment reform.
  - Identify what staffing and skills are needed for the core CHT
  - Identify and establish planning contacts with key service organizations in the community that will coordinate with the CHT
  - Plan clinical operations for the new Community Health Team (new personnel + existing personnel) that will provide care support for primary care practices
  - Plan referral and population management priorities for medical homes, CHT, and public health services. This planning can be supported by the *Health Care Cost Correlation and Hospital Charge Driver Analysis* report discussed earlier (Evaluation Infrastructure, section 1.7)
  - Plan coordination with other services, including public health, economic support and social services
  - Plan administrative structure for managing enhanced payment to practices and funding for CHTs
  - Participate in training to use centralized registry for reporting, panel management, and quality improvement

In each HSA, the number of practice sites that are involved, the size of the population served, and the IT development work will vary. A project plan to accomplish the steps outlined above is to be developed in each HSA.

As the Blueprint Integrated model (including payment reform) expands, each participating practice is scored against NCQA PPC-PCMH standards. These scores are used to guide quality based payment and to plan quality improvement (Payment Reform, section 1.4). Insurers will attribute patients to the participating practices and their medical claims data will be flagged in the multi-insurer claims database.

It is important to note that the *Health Care Cost Correlation and Hospital Charge Driver Analysis* report (Evaluation Infrastructure, section 1.7), reports population measures that can be used to select priorities and assist planning for health care delivery,

care coordination, panel management, and public health prevention strategies. These indicators reflect patterns of morbidity, risk factors, and drivers of healthcare costs in each HSA. These indicators will be updated periodically providing support for ongoing planning and evaluation.

Advantages & Risks for Participants in each HSA- There are several advantages to each HSA for establishing PCMH and CHT readiness. First, operable population based reporting and care coordination will improve outpatient preventive care, and begin a cultural transition towards structured guideline based processes. Second, having these clinical operations in place provides a better opportunity to realize gain in any gain-risk sharing financial arrangement such as global budgets or an Accountable Care Organization. Third, these preparations, with a clinical and information infrastructure, position each HSA to more rapidly implement full PCMH and CHT operations if payment reform expands to their area.

It is important to note that working with the Blueprint to establish medical home and CHT readiness does not assure that payment reform will expand to each HSA. The risks taken by each HSA are the local investments made in order to accomplish PCMH and CHT readiness. These risks are real but mitigated because the Blueprint and Vermont Information Technology Leaders (VITL) are sharing costs and supporting most direct expenditures for readiness work. The major cost for participants in each HSA is the time commitment. Participants need to balance this commitment to readiness work, and the uncertainty of insurers expanding payment reform, against the current trends in national healthcare reform policy, and the growing engagement in this model by some of our commercial insurers and Vermont Medicaid.

Financial support for readiness work- The currently planned shared cost structure for readiness expansion includes the Blueprint supporting health information technology enhancements and interfaces for clinical practice sites, costs for the DocSite clinical tracking and reporting system, training and support for the DocSite system, and training for medical home readiness and practice transformation. VITL is supporting costs for development and operation of the health information exchange including the HIE side of interfaces, and overall health IT project management in each community. Local costs will include a care coordinator dedicated to a select group of primary care practices. This care coordinator will work with existing care support personnel, public health personnel, and existing social and community services to improve overall integration of services for primary care populations (the so-called “CHT lite”). The planned cost structure for health IT may change depending on availability of Federal support through the American Reinvestment and Recovery Act (ARRA). In each community, the Blueprint, VITL, the local hospital, and participating practices will develop a budget plan for the HSA specific circumstances.

4.3 Opportunities for Multi-insurer Payment Reform to Expand Statewide:
Expansion of payment reform across Vermont is linked to a couple of key advancements. First, the commercial insurers and Medicaid must agree to expand, either on their own or in conjunction with Federal participation. Second, the Federal Government (in particular Medicare) must participate as part of a state led multi insurer initiative. Currently, progress is being made on both fronts.

Vermont's substantial health reforms, and the Blueprint Integrated Health Services model, have attracted great interest across Vermont, other states, and as part of the national healthcare reform discussion in Washington, DC. On September 16, 2009, Health and Human Services (HHS) Secretary Kathleen Sebelius announced the launch of a new (to be fully defined by HHS) Medicare demonstration project for "an initiative that will allow Medicare to join Medicaid, and private insurers in state-based efforts to improve the way health care is delivered." http://www.hhs.gov/news/press/2009pres/09/20090916a.html This Advanced Model of Primary Care demonstration project's specific design is still to be defined, and states (including Vermont) have to apply to be a demonstration project state once the guidance is published. The more specific Fact Sheet that was embedded in the HHS press release can be found at: http://healthreform.gov/newsroom/factsheet/medicalhomes.html. The hope is that this demonstration project will provide an opportunity to engage Medicare as part of multi-insurer payment reform in Vermont. HHS has stated that they are working towards a rapid implementation cycle for this demonstration project.

The opportunity offered by the HHS announcement, and Medicare participating as part of multi-insurer reform, has provided an impetus for the Blueprint to work with Vermont's commercial insurers and Medicaid to consider an accelerated time cycle for statewide expansion. The Blueprint is currently in active discussions regarding a plan for expansion. Two competing lines of thought have dominated the discussions. First is the desire to see outcomes data that supports a decision for insurers to invest in statewide expansion. Second is the understanding that shifting their expenditures from disease management contracts to local CHTs will in part offset the insurers' investment in the model. This important offset cannot be realized until enough of the population is involved allowing insurers to end their disease management contracts and shift their expenditures. These two competing priorities present a situation where either the insurers don't expand until sufficient outcome data is available, or expansion moves ahead regardless in order to take advantage of the financial offset and the ability for an expanded program to more rapidly support a robust evaluation of clinical and financial outcomes.

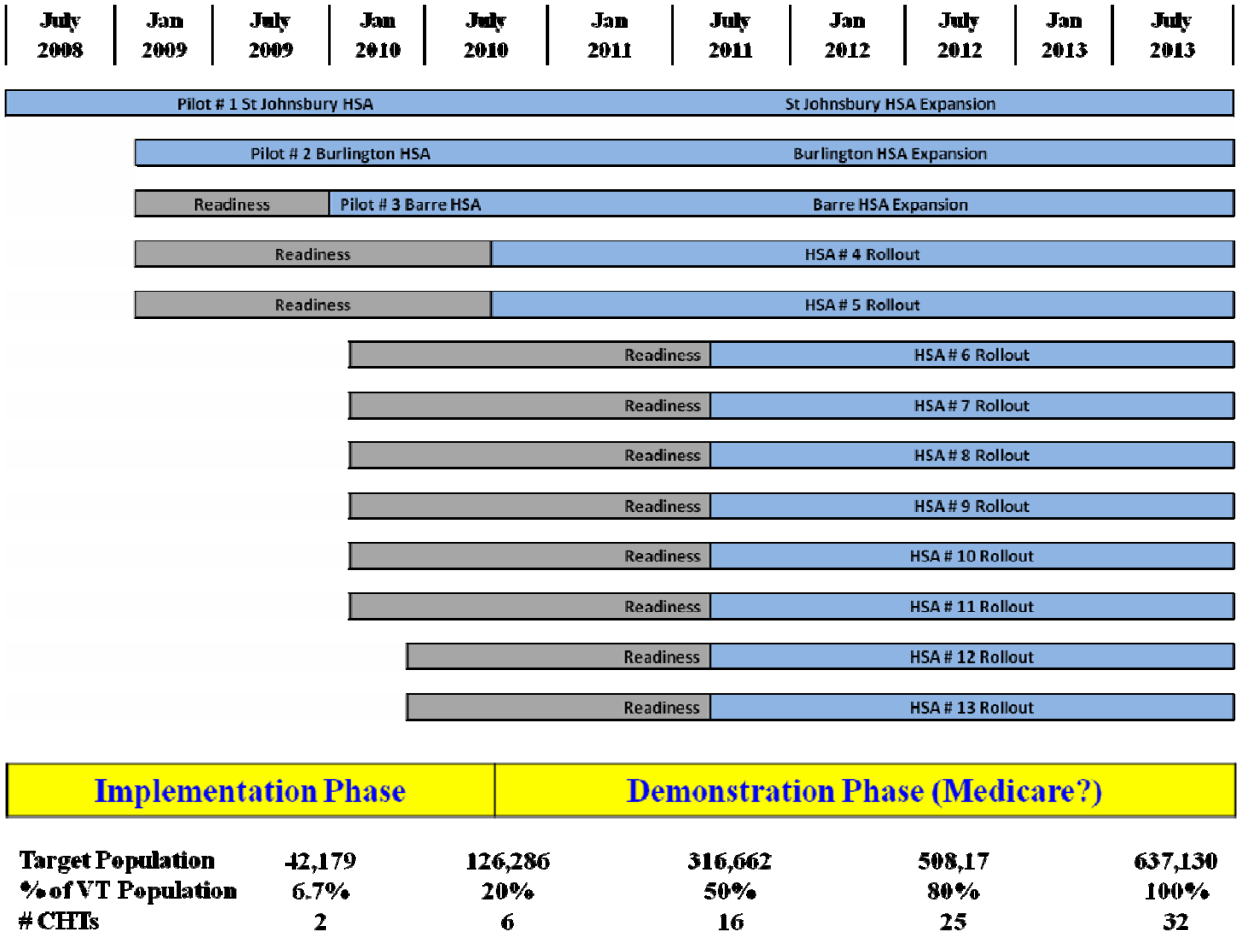
The current pilots have not been operating long enough for definitive outcomes to be presented. However, early results are promising based on scoring patterns of medical homes against NCQA PPC-PCMH standards, the experience of the CHTs (Medical Homes and Community Health Teams, section 1.3) and early trends in hospitalizations and emergency department visits (Current Status of the Integrated Health Services Pilots, section 2.0). The Blueprint's goal is to get insurers' commitments to a stepped up plan for expansion as part of Vermont's application for the Advanced Model of Primary Care Federal demonstration program that will bring Medicare along as part of multi-insurer payment reform.

4.4 Proposed Timeline for Statewide Expansion: The Blueprint is currently proposing a plan to expand the Integrated Health Services Model to 5 Hospital Service Areas by July 2010, and to all HSAs by July 2011. The proposed timeline also includes steady expansion within each HSA to include providers and populations that weren't part of the first 3 pilot programs. This proposal may need to be adjusted based on the timeline for Medicare participation, should Vermont be selected as one of the Advanced Model of Primary Care demonstration sites. However, it is also possible for expansion to occur

without Medicare participation. For this to occur, providers would need to accept payment reform that doesn't include Medicare's portion.

The current proposal includes several important adjustments to what was initially planned for the pilot program. The first 3 pilots were going to operate for a minimum of two years each, with a subsequent decision for expansion. The current proposal considers the work to date as an implementation phase, with a transition to a demonstration phase that aligns with the Federal demonstration program. This embeds five years of experience, with the ability to evaluate clinical and financial impacts on a statewide basis. This amount of time for operations to mature, along with the Blueprint's robust evaluation framework and data sources, will provide an extraordinary opportunity to determine the impact of the model. It is important to note that the model will not remain static. The evaluation framework is designed so that routine reporting and comparative benchmarks provide a basis to guide ongoing quality improvement (Evaluation Framework, section 1.7). The proposed expansion is designed to result in a highly refined model of Integrated Health Services.

Figure 23. Blueprint Integrated Health Services Model - Proposed Expansion



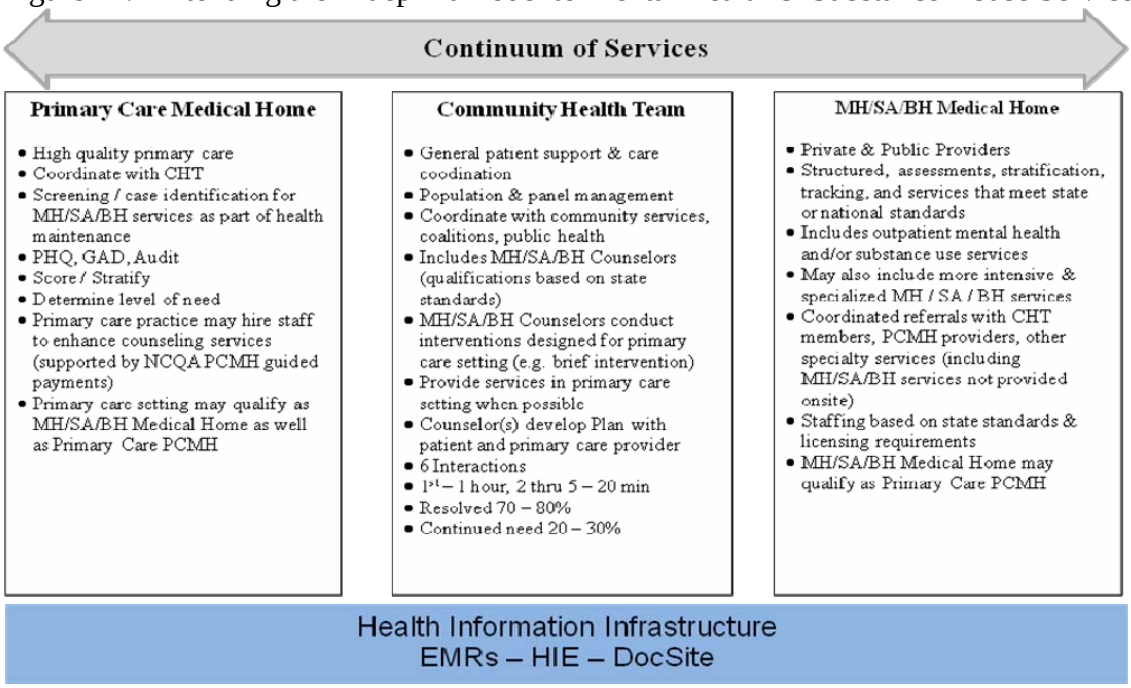
4.5 New Directions in the Blueprint Model: In addition to expanding geographically, the Blueprint is actively working on expanding the scope of services that are included in the model. Multi-insurer payment reform, primary care PCMHs, CHTs, and the health information infrastructure provide a solid foundation to extend the model. The Blueprint

model is designed so that consistent principles and strategies can be applied across different sectors and services. For example, the financial reforms that support adult primary care can be extended to support pediatric PCMHs and the adjustments that are necessary for the CHTs. The same design principles can also be applied to support high quality outpatient mental health services for patients whose needs go beyond what can be provided in the primary care PCMH or CHT setting. The design principles extend to expansion of community based services as well. For example, the CHTcan be expanded to include coordinators that are focused on elder care, making sure that senior citizens are more likely to have access to nutrition, transportation, medications, medical follow up, safe living environments, and thoughtful arrangements for end of life care. In another example, the investment in the CHT can be expanded to include coordinators for specialized conditions such as congestive heart failure. These coordinators, supported by information technology and decision support systems can help patients to engage with treatment plans designed to improve control of their condition, and reduce the rate of hospitalizations.

In each case, the administrative and financial operations that have been established in a community can be adjusted to accommodate expansion. The financial impact model can be adapted to design a rationale for investment in preventive services that is likely to be offset by reductions in avoidable events that are often very expensive. The health information infrastructure is purposely designed to support well-coordinated preventive services that extend well beyond the walls of the PCMH, with access to a centralized registry for a multidisciplinary CHT. The evaluation and reporting infrastructure, including the DocSite registry, is structured so that information from a variety of sources can be used to refine and improve services on an ongoing basis. From the outset, the design principles that form the basis of the Blueprint model are intended to support a broad range of services.

Mental Health & Substance Abuse- The Blueprint is currently working with providers and academic experts to establish a sustainable model. The design is intended to establish a continuum from the primary care PCMH to the CHT to more specialized outpatient services. Reforms to date already support medical homes where better screening for mental health and substance abuse (MH & SA) disorders takes place as part of health maintenance. Behavioral counselors are supported as part of the CHT, providing patients with ready access to brief interventions for lower acuity problems. The next step is payment reform that supports more intensive and specialized outpatient services for those whose problems that cannot be handled in the primary care or CHT setting. NCQA scoring criteria are being adapted to objectively score sites that provide specialized outpatient MH & SA services in the same way that a primary care medical home is scored based on the quality of their outpatient services. This will allow insurers to extend the same administrative payment reforms to the MH & SA sector. National guidelines and expertise are being incorporated into this novel model that is designed to establish a sustainable continuum of services (Figure 24).

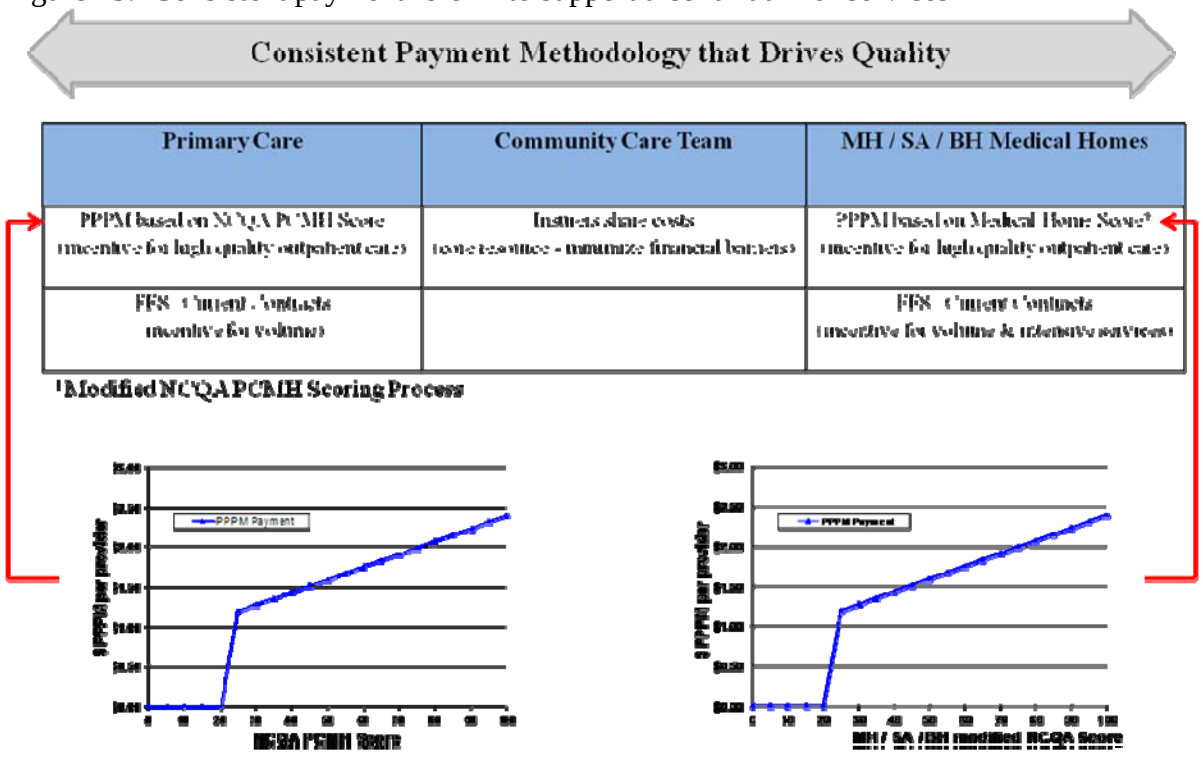
Figure 24. Extending the Blueprint model to Mental Health & Substance Abuse Services



Below is an example of how the Blueprint model can be adapted to support a continuum of services that includes primary care PCMHs, CHTs and MH and SA medical homes. The same scoring and administrative methods that are already in place to support medical homes and CHTs can be extended (Payment Reform, section 1.4). Each outpatient 'medical home' setting can be scored using the same numeric methods. Many of the NCQA PPC-PCMH criteria are applicable across any outpatient setting that is focused on high quality, well coordinated preventive care. Criteria that is specific for a particular setting (e.g. primary care) can be adapted based on national guidelines for specialized care (e.g. Mental Health).

The proposed model establishes care coordination and tight linkages across the spectrum of primary care, CHTs, and MH and SA services. It assures that the same balance of incentives, for volume and quality, apply across the spectrum. It also assures that there are no disincentives for patients and families to access CHT support services.

Figure 25. Consistent payment reform to support a continuum of services



The scoring methodology and financial impact model is currently under development. The numbers shown for the $PPPM payment for MH and SA medical homes have not been determined and will not necessarily be the same as for a primary care medical home. The financial models will be refined and finalized with the input of insurers and other stakeholders. When financial reform to support high quality services is feasible, the service model will be refined with input from advocacy groups and providers.

Congestive Heart Failure- The Vermont Blueprint has thus far focused on primary care as the vehicle for clinical transformation. Recognizing that specialty care, with its significant utilization of procedures such as surgery and imaging, must also be engaged if the global costs are to be addressed.

Health care expenditures associated with congestive heart failure (CHF) total $35 billion in the United States (*Circulation* 2008; 117;e136). There is wide agreement that readmission to the hospital for this condition contributes to the magnitude of the associated costs.

In October 2009, the Blueprint awarded a grant to Fletcher Allen Health Care (FAHC) in order to improve care for patients statewide with CHF, assessed as compliance with guideline management and reduced readmission rates. A CHF Task Force has been established to guide the process to improve and integrate post-hospitalization and long term care planning. FAHC Cardiology (MD, RN and NP), Primary Care, the Visiting Nurse Association and Nursing Home Directors are represented.

FAHC, Vermont's tertiary care hospital, provides care for patients throughout much of the state. Statewide spread via outreach and education (for patients and providers at the local level) is a top priority for this year.

Components of the program include:

1. Creation of a database of Vermonters who have been hospitalized with a primary or secondary diagnosis of CHF
2. Use of the 4PatientCare™ automated telephone recall system for at-risk patients
3. Use of the DocSite CHF visit planner for tracking patients statewide, as well as interfacing with FAHC's electronic medical record
4. Coordination (including routine communication, referrals, education, social service) with existing Community Health Teams in Burlington, St. Johnsbury and Barre.
5. Linking patients to public health programs such as smoking cessation, Fit and Healthy Vermonters and Get Moving Vermont
6. Hiring of a fulltime nurse coordinator with administrative, outreach/educational and direct patient care responsibilities
7. Working with primary care providers to encourage the use of guideline-driven care and palliative care consultation if indicated

This important collaboration with cardiologists at Vermont's university hospital is an important step in engaging our specialty care colleagues in broad health system reform, with the improved health of the patients as the overarching goal.

Pediatrics- The Blueprint was launched in 2003 as a Chronic Disease Initiative, focused on patients 18 years of age and older. The shift in emphasis to prevention and health maintenance leads to a natural refocus on the total population. Addressing healthy behaviors and age-and gender-appropriate screening and treatment should start in childhood. To that end, the Blueprint expansion will be inclusive of Pediatric practices as it rolls out statewide.

- Bright Futures™ - In 2010, the Blueprint, supported by the Vermont Chapter of the American Academy of Pediatrics (AAP), is embedding Bright Futures™ (national guidelines for the health supervision of infant, children and adolescents) into DocSite. This powerful enhancement to Vermont's clinical tracking system will allow clinicians in pediatric and family medicine practices ready and free access to nationally accepted decision support tools. It is crucial step in the readiness for transformation to the Blueprint Integrated Health System.
- Immunization Registry - The periodicity schedule for pediatric immunizations will be built into DocSite as part of the Bright Futures project. In addition, the Vermont Immunization Registry (IMR) will be interfaced with bi-directional exchange so that status, reminders, immunization histories, etc are available in a timely and accurate manner. While the pediatric population is the obvious target group for this type of clinical tracking, the IMR will also be useful in adults. The Vermont Chapter of the AAP is supporting this work.
- Collaboration with VCHIP - The Vermont Child Health Improvement Program (VCHIP) at the University of Vermont has been a key partner in the evaluation of the Blueprint since 2006. Their contribution has been twofold; 1) collection and analysis of data related to chronic disease and self-management via direct chart reviews (4500 charts per year) and 2) NCQA PPC-PCMH recognition assessments. This will become an even larger body of work as the Blueprint expands in geographic size and project scope. Faculty at the UVM College of

Medicine is working closely with Blueprint leadership and Vermont Medicaid to enhance access to appropriate services for children and families.

Long Term Care- Coordination of care for complicated patients can perhaps be best exemplified in the care of the elderly and disabled. Multidisciplinary teams of providers need to work closely with exquisitely effective communication among often institutionally and geographically separate personnel. Starting to address the needs of this frail population is planned for 2010.

The Blueprint has always had a representative of the American Association Of Retired Persons (AARP) on its advisory Executive Committee. In 2009, the AARP created a news segment on Vermont's health reform initiatives, interviewing Governor Douglas, Susan Besio, PhD (Director of Healthcare Reform), and Lisa Dulsky Watkins, MD (Blueprint Associate Director). This was aired on its syndicated "eStreet" program. Blueprint leadership sits on the board of Vermont's "Seniors Aging Safely at Home", a consortium dedicated to the well-being and dignity of elders. Leadership of the Programs for All-inclusive Care for the Elderly (PACE) program and long-term care facilities (Cathedral Square in Burlington) are working with the Blueprint financial impact model to analyze potential impact on projected costs.

These same institutions and agencies are also looking at DocSite use to provide consistent and accurate information to and from medical sites (outpatient, emergency room and inpatient) and long-term care facilities.

Appendix

Appendix A. Budget Summary

PERSONNEL (salary & benefits)	FY 2008	FY 2009	FY 2010	FY 2011
Assistant Director (vacant for 6 months in FY 08)	93,631	110,555	112,811	117,782
Public Health Administrator-Community & Self-Management	0	60,454	67,059	66,966
Public Health Administrator-Project & Grants Manager	0	65,757	73,846	76,524
Administrative Support	66,286	52,571	57,244	68,882
** **Health Surveillance**-Statistician/Analyst (.5 FTE)	0	29,600	31,096	0
****OLH**-Pub. Health Specialists for Integrated Pilot Comm. Health Teams (4 FTE)	49,303	185,566	185,566	0
****OLH**-Public Health Specialists for non-Pilot district offices (.5 FTE @ 8 D.O.)	209,112	278,349	278,349	0
~~Public Health Physician-Physician Practice (combined w/ Asst. Dir. 1/1/08)~~	63,718	0	0	0
~~Public Health Administrator-Self Management~~	57,726	0	0	0
~~Public Health Administrator-Community~~	58,980	0	0	0
~~Information System Project Manager~~	96,879	13,448	0	0
~~Information System Developer II (2 positions)~~	125,373	128,508	133,648	0
~~Public Health Informatics Physician~~	31,084	0	0	0
~~Communications Specialists~~	50,735	52,003	0	0
~~Grants Administrator~~	0	64,896	66,193	0
~~Fit & Health (2 positions for 9 months)~~	0	97,500	0	0
TOTAL-PERSONNEL COSTS	**902,827**	**1,139,207**	**1,005,812**	**330,154**
OPERATING EXPENSES				
Supplies-Self Management	94,765	94,765	96,596	99,142
Printing & Publications	40,000	10,000	40,000	40,000
Training-Staff & Contractors	21,273	21,273	21,273	21,273
State Work Group Expenses	2,000	2,000	2,500	2,500
TOTAL-OPERATING EXPENSES	**158,038**	**128,038**	**160,369**	**162,915**
PROGRAM SUPPORT				
Blueprint Integrated Pilots				
Community Health Teams	74,167	234,673	312,482	525,000
Enhanced Provider Payments (PPPM) based on NCQA standards	0	337,773	345,000	451,544
SUB-TOTAL-BP Integrated Pilots	**74,167**	**572,446**	**657,482**	**976,544**
Blueprint Communities				
Project Management/Provider Practice Initiatives	216,300	216,300	216,300	216,300
Community Activation & Support	180,000	180,000	180,000	180,000
Self Management	160,000	160,000	160,000	160,000
Information Technology	0	91,000	50,000	50,000
~~Practice Stipends~~	700,000	700,000	300,000	0
Expansion to New Hospital Service Areas (H.S.A.'s)	0	0	0	200,000
SUB-TOTAL-BP Communities	**1,256,300**	**1,347,300**	**906,300**	**806,300**
Non-Blueprint Communities (Healthier Living Workshops)				
Self Management	0	90,000	90,000	90,000
~~On-Line Self Management~~	9,437	9,437	9,437	0
SUB-TOTAL-Non-Blueprint Communities	**9,437**	**99,437**	**99,437**	**90,000**
Blueprint Expansion & Readiness				
IT Readiness (VITL)	0	0	650,000	650,000
Expanded Financial Impact Modeling	0	0	75,000	75,000
New Pilot Community Health Team Actviation Funding	0	0	275,000	275,000
SUB-TOTAL-BP Expansion & Readiness	**0**	**0**	**1,000,000**	**1,000,000**

Other Program Support				
Rural Health Alliance Matching Funds (Bi-State Primary Care)	30,833	185,000	185,000	143,375
Provider Training (VPQHC)	230,000	195,000	200,000	75,000
Program Evaluation-BP Communities & Integrated Pilots (VCHIP)	210,000	331,636	335,000	335,000
~~Data Analysis-BP Communities & Integrated Pilots~~	0	60,000	100,000	0
Financial Impact Modeling (Lake Champlain Capital Management)	60,000	15,000	15,000	12,000
~~Health Information Exchange Data Services (VITL)~~	360,000	360,000	0	0
~~Development of Clinical Tracking System & Licensing~~	1,241,500	0	0	0
~~Annual Maintenance (Orion)~~	240,000	0	0	0
Expanded Clinical Tracking System (DocSite)	0	387,000	387,000	447,000
Blueprint Annual Conference (UVM)	0	0	0	12,000
SUB-TOTAL-Other Program Support	**2,372,333**	**1,533,636**	**1,222,000**	**1,012,375**
TOTAL-PROGRAM SUPPORT	**3,712,237**	**3,552,819**	**3,885,219**	**3,885,219**
TOTAL-BLUEPRINT FOR HEALTH	4,773,102	4,820,064	5,051,400	**4,378,288**

******* VDH staff based in other divisions of the Department of Health conducting work on behalf of the Blueprint for Health***

Appendix B. Blueprint Staff

Craig Jones, MD
Blueprint Executive Director
Vermont Department of Health
108 Cherry Street – Suite 301
PO Box 70
Burlington, VT 05402
(802) 879-5988 phone
(802) 859-3007 fax
craig.jones@vdh.state.vt.us

Lisa Dulsky Watkins, MD
Blueprint Associate Director
Vermont Department of Health
108 Cherry Street – Suite 301
PO Box 70
Burlington, VT 05402
(802) 652-2095 phone
(802) 859-3007 fax
lwatkin@vdh.state.vt.us

Jenney Samuelson, MS
Blueprint Community/Self Management Director
Vermont Department of Health
108 Cherry Street – Suite 301
PO Box 70
Burlington, VT 05402
(802) 863-7204 phone
(802) 859-3007 fax
jsamuel@vdh.state.vt.us

James Morgan, MSW
Blueprint Project Administrator
Vermont Department of Health
108 Cherry Street – Suite 301
PO Box 70
Burlington, VT 05402
(802) 865-7795 phone
(802) 859-3007 fax
jmorgan@vdh.state.vt.us

Terri Price
Blueprint Administrative Support
Healthier Living Workshop Statewide Coordinator
Vermont Department of Health
108 Cherry Street – Suite 301
PO Box 70
Burlington, VT 05402
(802) 652-2096 phone
(802) 859-3007 fax
tprice@vdh.state.vt.us

Diane Hawkins
Executive Staff Assistant to Craig Jones
Office of Health Care Reform
312 Hurricane Lane
Williston, VT 05495
(802) 879-5988
diane.hawkins@vdh.state.vt.us

Appendix C. Committees

Blueprint Executive Committee

Craig Jones, MD, Executive Director, Blueprint for Health, Chair
Bea Grause, Executive Director, VT Association of Hospitals & Health Systems, Co-chair
Susan W. Besio, PhD, Director, Office of Vermont Health Access
Gerhild Bjornson, PhD, MD,. CIGNA representative for Vermont
Hunt Blair, Deputy Director, Office of Health Care Reform, State of Vermont
David Cochran, CEO and President, Vermont Information Technology Leaders
Wendy Davis, MD, Commissioner, Vermont Department of Health
Don George, VP Managed Health Systems, Blue Cross Blue Shield of Vermont
Paul Harrington, Executive Director, Vermont Medical Society
Jim Hester, Director, Health Care Reform Commission
Nicole Hill, Assistant Director, State Employee Benefits
Jim Leddy, AARP Vermont State President
William Little, Vice President, Vermont, MVP Healthcare
Charles MacLean, MD, University of Vermont College of Medicine
Mark Novotny, MD, Chief of Medical Staff, Southwestern Vermont Medical Center
Christine Oliver, Deputy Commissioner, BISHCA
Helen Riehle, Executive Director, VPQHC
Joan Senecal, Commissioner, Department of Aging and Independent Living
Don Swartz, MD, Medical Director, Vermont Department of Health
David Tucker, Department of Information and Innovation
Bill Warnock, ND, Naturopathic Physician

Blueprint Pilot Design & Evaluation Committee

Pam Biron, Blue Cross Blue Shield of Vermont
Gerhild Bjornson, PhD, MD, CIGNA representative for Vermont
Hunt Blair, Deputy Director, Office of Health Care Reform, State of Vermont
John Bond, Blue Cross Blue Shield
John Brumsted, MD, Chief Quality Officer, Fletcher Allen Health Care
Joyce Dobbertin, MD, Corner Medical
Sharon Fine, MD, Northern Counties Health Care, Danville Health Center
Scott Frey, Blue Cross Blue Shield
Joyce Gallimore, Regional Director of Quality Improvement, MVP Healthcare
Don George, CEO, Blue Cross Blue Shield
Paul Harrington, Executive Vice President, Vermont Medical Society
Ani Hawkinson, ND, Naturopathic Physician
Laura Hubbell, Blueprint Project Manager, Central Vermont Hospital
Craig Jones, MD, Executive Director, Blueprint for Health
Pat Jones, Director of Quality Assurance and Consumer Protection, BISHCA
Dian Kahn, Director of Analysis and Data Management, BISHCA
William Little, Vice President, VP Health Care
Vicki Loner, Deputy Director, Office of Vermont Health Access, State of Vermont
Charles MacLean, MD, Research Director AHEC Program, UVM College of Medicine
James Mauro, Reimbursement Specialist, Blue Cross Blue Shield
Barbara McCallister, Community Health Team Director, Central Vermont Hospital
Lou McLaren, Contract Manager, MVP Health Care
Randy Messier, Blueprint Project Manager, Central Vermont Hospital
Jim Pratt, CEO, Cabot Creamery
Laural Ruggles, Project Manager, Northeast Vermont Medical Center

Richard Salmon, MD, Medical Officer, CIGNA
Neil Sarkar, University of Vermont
Judith Shaw, Executive Director, VCHIP, University of Vermont
Bill Swartz, Vermont Policy and Special Projects Coordinator, Bi-State
Stacy, Tetreault, MVP Healthcare
Lisa Dulsky Watkins, MD, Associate Director, Blueprint for Health
Sharon Winn, Director of Quality Improvement, Blue Cross Blue Shield of Vermont
Theresa Wood, Executive Director, APS Healthcare
Mark Young, Central Vermont Hospital
Catherine Wentworth, Provider Contracting, CIGNA

Blueprint Provider Practice Advisory Group
Donna Izor, Central Vermont Medical Center, Co-chair
Charles MacLean, MD, Essex Junction, Co-chair
Sharon Fine, MD, Danville
David Gorson, MD, Bennington
Paul Harrington, Vermont Medical Society
Craig Jones, MD, Vermont Blueprint
John King, MD, Milton
Dana Kraus, MD, St. Johnsbury
Keith Michl, MD, Bennington
Rob Penney, MD, Burlington
Bob Schwartz, MD, Bennington
Norm Ward, MD, South Burlington
Lisa Dulsky Watkins, MD, Associate Director, Blueprint for Health
Rich White, MD, Windsor
Anthony Williams, MD, Montpelier

Appendix D. Blueprint Presentations

Meetings / Speaking Engagements
Craig Jones/Lisa Dulsky Watkins

OUT OF STATE MEETINGS

			Presenter
Dec. 5 - 7, 2007	Agency for Health Care Research & Quality (AHRQ) Quality Improvement Workshop	Philadelphia, PA	Craig
June 25 - 27, 2008	Academy Health & Commonwealth Fund State Quality Improvement Institute Kick-Off Meeting	Chicago, IL	Craig
April 7 - 9, 2008	IHI Triple Aim Meeting	Boston, MA	Craig
May 28 - 29, 2008	2008 Health Care Solutions Group Summit Topic: What is the Role of the State in Quality	Nashville, TN	Craig
Sept. 9, 2008	PA Chronic Care Commission (Presentation of BP Pilots with CCT)	Harrisburg, PA	Craig
Oct. 7, 2008	Brookings Institute Forum (Panelist)	Washington, DC	Craig
Oct. 14 - 15, 2008	Maine Public Health Association (BP Integrated Pilots presentation)	Augusta, ME	Lisa/ Craig
Oct. 28 - 29, 2008	Maine Primary Care Association Annual Conference (Presented the Vt. BP for Health)	Portland, ME	Craig
Nov.17 - 19, 2008	Vermont Health Care Presentation - Capitol Hill Invited by Senate Finance Committee Health Team to hear about our work with the CCT's	Washington, DC	Craig

Nov. 19 - 21, 2008	Academy Health State Coverage Initiatives. Invited to address systems redesign efforts.	Washington, DC	Craig
Dec.2-3, 2008	Employer-Driven Strategies for the Patient-Centered Medical Home, hosted by World Congress (Health and Human Capital Management Series Executive Forum	Washington, DC	Lisa
Dec. 9 - 10, 2008	NCSL Moving toward a hi performance Health System: State Roles (Presented VT Blueprint)	Emory University Atlanta, GA	Craig
Jan. 29 - 30, 2009	NGA Meeting (National Governor's Assocation) Invited to speak at NGA on medical homes.	New Orleans	Craig
Feb. 1 - 3, 2009	2009 National Health Policy Conference (Invited Speaker - VT Blueprint for Health)	Washington, DC	Craig
Feb.11, 2009	NASHP/Commonweath Fund State Quality Meeting State Partnerships to Improve Quality: Understanding Critical Success Factors "The Vermont Blueprint and Payment Reform"	Boston, MA	Lisa
March 11 - 12, 2009	Washington Meetings with Legislators	Washington, DC	Craig
April 28, 2009	Patient Centered Primary Care Collaborative (PCPCC) Stakeholders' Working Meeting "Blueprint Integrated Pilot Programs"	Washington, DC	Lisa
May 19-20, 2009	Washington meetings with Legislators	Washington, DC	Craig
May 27 - 28, 2009	SQII Meeting	Denver, CO	Craig
June 18, 2009	The Dartmouth Institute		

	Prevention Research Center Planning Meeting "Vermont Blueprint for Health - Population Health"	Hanover, NH	Lisa
Aug. 6-9, 2009	American Academy of Pediatrics AAP District I & V Meeting Blueprint for Health Model Presentation	Cambridge, MA	Craig
July 15 - 16, 2009	Vanderbilt University Grand Rounds Speaker	Nashville, TN	Craig
August 5, 2009	Umass / Medicaid Meeting Guest Speaker/Panelist	Shrewsbury, MA	Craig
August 10, 2009	White House Medical Home Forum Invited Guest Panelist	Washington, DC	Craig
September 9, 2009	Iowa Healthcare Association Patient Centered medical Home Collaborative "Vermont Blueprint for Health"	Des Moines, Iowa	Lisa
Sept. 14 - 15, 2009	AHRQ Annual Conference - Building the Health IT Infrastructure: How do we get there?	Bethesda, MD	Craig
September 17, 2009	Center for Improving Value in Health Care Annual Board Retreat "Payment Reform in Vermont"	(Remote Presentation) Denver, CO	Lisa
October 6, 2009	PCPCC Center for Multi-Stakeholder Demonstrations "Vermont Blueprint Integrated Pilots"	Washington, DC	Lisa
October 14, 2009	Academy Health All-Payer Claims Database Conference Invited Panelist	Alexandria, VA	Craig
Oct. 29 - 30, 2009	IHI Triple Aim Seminar	Boston, MA	Craig

	Prevention & Health Promotion & BP Model in VT BPIP Model as it Relates to Triple Aim		
October, 2009	DMAA: The Care Continuum Alliance 2009 Forum "Vermont Health Care Reform - Collaborating for Medical Home Success" First Prize for Forum Poster Presentations (With Julie Trottier of APS Healthcare)	San Diego, CA	Lisa
October 30, 2009	VHA Annual Meeting "Vermont Blueprint and Engaging Medicare"	Portland, ME	Lisa
November 13, 2009	New England Society for Health Care Strategy Presentation on Statewide Efforts to Improve the Health of the Vermont Population	Waltham, MA	Craig
December 1, 2009	Remote National Presentation "Will Medicare Join State Multi-Payer Medical Initiatives?" A conversation with states regarding Medicare's proposed Advanced Primary Care demonstration hosted by NASHP	Remote Presentation	Lisa
December 7 - 9, 2009	21st Annual National Forum IHI Poster Presentation	Orlando, FL	Lisa
December 10, 2009	Colorado Health Foundation - Payment Reform Retreat Payment Reform - Lessions from Vermont	Remote Presentation	Craig
December 17, 2009	Remote National Presentation - Hosted by NASHP "Blueprint Integrated Pilot Program - Building an Integrated System of Health"	Remote Presentation	Lisa

IN STATE MEETINGS

Jan. 8, 2009	Stowe Rotary Club Blueprint for Health / Health Care Reform Presentation	Stowe, VT	Craig
Feb. 12, 2009	VAHHS - Stock Farm Group BP Presentation	Montpelier, VT	Craig
May 6, 2009	VT Chapters of the American Academy of Pediatrics and American Academy of Family Physicians, Joint Meeting "Blueprint Integrated Pilot Programs"	Burlington, VT	Lisa
May 13, 2009	Bi-State Annual Primary Care Conference Craig Jones was presented an award	Fairlee, VT	Craig
May 13, 2009	VT Chapter of American Heart Association Cardiovascular Disease and Stroke Task Force "Vermont Blueprint for Health - Hypertension"	Williston, VT	Lisa
July 13, 2009	University of Vermont Guest Panelist - Collaborative Management	Burlington, VT	Craig
July 30, 2009	UVM College of Nursing "Vermont Blueprint for Health - Health Reform in Action"	Burlington, VT	Lisa
September 11, 2009	Vermont Association of Hospitals and Health Systems Annual Meeting Organization of Nurse Leaders "Vermont Blueprint for Health"	South Burlington, VT	Lisa
Sept. 28, 2009	Little Rivers Health Center Annual Meeting Blueprint for Health Presentation	Bradford, VT	Craig
October 1, 2009	Vermont Association of Home Health Annual Meeting "Community Health Teams"	Montpelier, VT	Lisa

October, 2009	Fox 44 News Interview	Burlington, Vt	Lisa
November 9, 2009	UVM College of Medicine "The Patient Centered Medical Home"	Burlington, VT	Lisa
November 16, 2009	Primary Care Behavioral Health Conference BP Presentation	Burlington, VT	Craig
November 20, 2009	Vermont Public Health Grand Rounds BP Presentation	Burlington, VT	Craig
December, 2009	AARP News - E Street Television Interview	Burlington, VT	Lisa
December 7, 2009	Vermont Council for Quality - Annual Fall Conference BP Presentation	Burlington, VT	Craig

Appendix E. 2009 CHAMPPS Report to the Legislature

VERMONT2009 CHAMPPS

Coordinated Healthy Activity Motivation and Prevention Programs

Report to the Legislature on **Act 203**
Section 14 – Report Relating to 18 V.S.A. § 104b
January 15, 2010

VERMONT
DEPARTMENT OF HEALTH
Agency of Human Services

108 Cherry Street, PO Box 70
Burlington, VT 05402
healthvermont.gov

VERMONT
DEPARTMENT OF HEALTH
Agency of Human Services

Report to the Legislature
January 15, 2010

I. REPORT CONTEXT

In accordance with ***Act 215*** (2006) and ***Act 203*** (2008), by January first of each year, the Commissioner of the Vermont Department of Health (VDH) shall report on the status of the CHAMPPS Program by including a section on prevention grants in the annual report of the Blueprint for Health**.** Because the January 2010 Blueprint Annual Report will not be published until the end of January, the specific CHAMPPS report will be filed separately. It will also be incorporated into the Blueprint Annual Report as required by law when that report is submitted.

Act 215 created the CHAMPPS Program, and an advisory committee, to provide communities with technical assistance and sustainable funding to carry out prevention and wellness initiatives. In addition to the funding for wellness initiatives such as obesity prevention and lead poisoning prevention, the initial round of grantees included coalitions working on substance abuse prevention, using federal Strategic Prevention Framework (SPF) funding to support these efforts. Although this report focuses on the processes, challenges and successes of the CHAMPPS general wellness grants, it is important to recognize that VDH's ADAP (Alcohol and Drug Abuse Programs) Division continues to use SPF funds to support community-based efforts for preventing substance abuse. VDH will continue to support these substance abuse prevention programs until the SPF funding ends in 2011.

II. INTRODUCTION

The CHAMPPS Program serves as the foundation for community wellness initiatives within the Department of Health (VDH) by awarding comprehensive, substantial multi-year grants to communities for health and wellness projects. In FY10, $527,200 was awarded to 12 communities, with individual amounts ranging from $35,000 to $67,000 to carry out assessment, capacity building, and implementation activities. Pending the FY11 budget allocation, the Department plans to issue a Request for Proposals (RFP) for further CHAMPPS funding in July, 2010. Additionally, in FY 2010, a total of $437,943 in SPF grants were awarded to 4 communities for substance abuse prevention work.

Because many community-based prevention initiatives targeted to specific diseases or behaviors employ similar prevention strategies, VDH has developed

internal operational processes to coordinate funding processes and ensure that all locally-funded initiatives are as coordinated and integrated as possible.

In its first year of implementation, the CHAMPPS initiative funded five capacity-building grants and four implementation grants. In its second full year, FY08 funds were awarded as non-competitive continuation grants to the nine initial community

grantees. For FY09, six new communities were funded with capacity-building grants. In FY10, a total of 12 communities are receiving funding. A list of the CHAMPPS and SPF grantees is set out in Appendix B.

III. SUCCESSES, FUNDING PROCESS AND CHALLENGES

Successes: Through the CHAMPPS process, VDH developed the Vermont Prevention Model, which has been embraced throughout the Department and beyond as the model for implementing general wellness and substance abuse prevention initiatives. Increased collaboration between programs and Divisions within the Department has been facilitated by CHAMPPS. Communities have been provided with resources to assess their prevention needs as well as develop and implement plans to improve the health of their residents. Community coalitions have been strengthened by the technical assistance that has been provided by VDH, and they are learning how to be more effective and strategic in their use of their financial and member resources. In turn, VDH is gaining a better understanding of community needs and strengths.

Funding Process: An internal VDH CHAMPPS working group meets regularly to advance the coordination and integration of risk factor and disease-specific prevention program activities within the Department. The group developed the RFP for FY10 funds, and presented it to the CHAMPPS Advisory Committee for review and revision. The FY10 RFP focused on environmental and policy change around physical activity, nutrition, substance abuse, tobacco use and access to preventive services. It was also developed to position Vermont for the receipt of available ARRA (American Recovery and Reinvestment Act) prevention and wellness funds.

The RFP was sent out to VDH District Offices, coalitions funded through tobacco and substance abuse, AHS Field Offices, not-for-profit organizations, and others who may have had in an interest. Eighteen applications were submitted.

A panel of 11 individuals, representing state government, the University of Vermont, the CHAMPPS Advisory Committee, and a not-for-profit organization reviewed and scored the applications, with each application being

reviewed by at least four reviewers. The review panel met together to discuss, score and rank each application. Final decisions were based on scores, geographic distribution, other sources of funding, input from VDH District Directors, and past performance.

Challenges: The CHAMPPS Program faces the challenge of promoting integration of health and wellness initiatives at the local level in spite of having separately funded and staffed "disease-specific" programs within VDH. The reasons for the separate programs typically relate to a variety of federal grant requirements that require individual program identities and organizational structures. On the national level, there are changes being made to better integrate these efforts and remove requirements that pose barriers for states' efforts to better integrate prevention efforts. It is essential that VDH integrate chronic disease prevention efforts and assist communities with integrating prevention efforts so that prevention work can be as efficient and effective as possible. In addition, at the community level, it is important that the prevention and wellness activities be coordinated with Blueprint for Health efforts such as the Blueprint's Community Health Teams. This move toward greater integration at the community level requires that VDH staff provide coalition leaders with the skills and resources necessary to conduct community assessments and lead strategic change efforts. While significant progress has been made over the last few years, there is still a substantial need for VDH to provide training and tools to coalitions.

Another challenge for the CHAMPPS program is to continue to fulfill the intent of the legislation, i.e. comprehensive, sustainable multi-year grants in an era of level or decreasing appropriations. Federal funding from ARRA (The American Recovery and Reinvestment Act) will assist Vermont in sustaining the momentum that has been gained through the CHAMPPS program.

IV: CONCLUSION

With current funding, VDH has been able to fund 12 communities to work on improving the health of their residents through increasing physical activity, improving nutrition, and improving access to preventive services. In addition, 4 communities have received SPF funding to advance substance abuse efforts. The work of the CHAMPPS communities aligns well with the federal Healthy Communities initiative, an ARRA initiative which is providing funding to states and communities to address these issues.

It is widely acknowledged that policy, system and environmental change is the most effective means to promote population-wide behavior change. The CHAMPPS program has an important role in supporting communities in

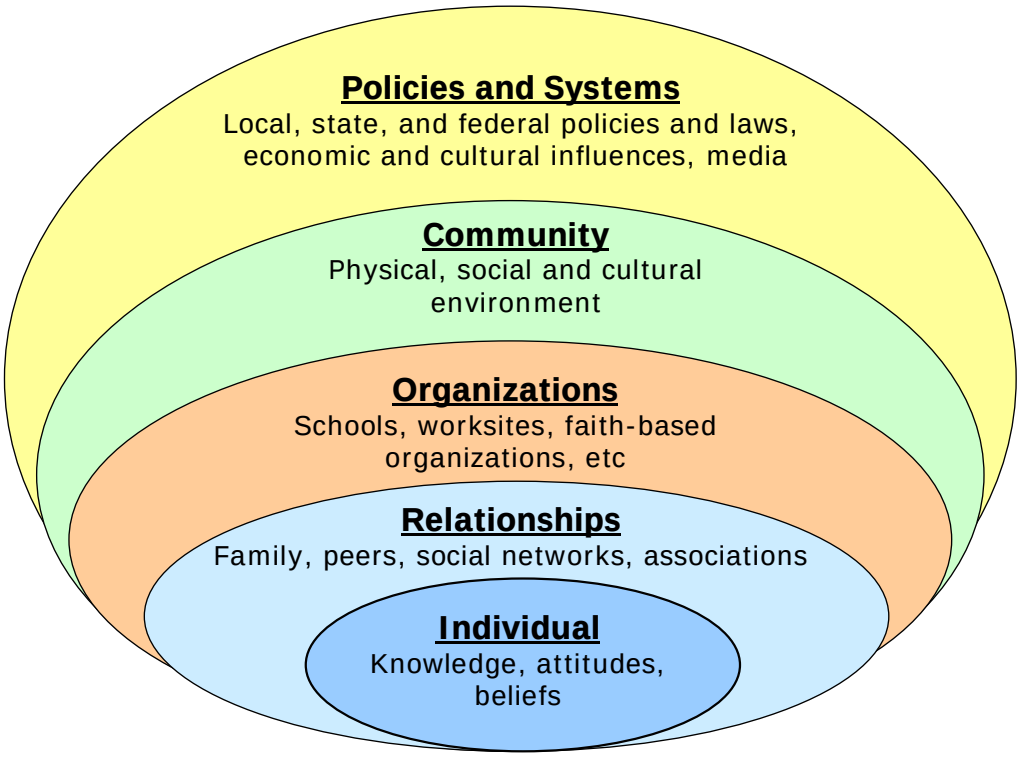
their efforts to design and implement strategic local prevention and wellness interventions that will integrate efforts to address multiple health risks. In addition, improved work toward integrating these efforts with substance abuse prevention work and linking these initiatives with the work of Vermont's Blueprint for Health will move Vermont closer to achieving greater success in keeping Vermonters healthy.

V. APPENDICES

Appendix A: Vermont Prevention Model
Appendix B: CHAMPPS grantees

Appendix A

Vermont Prevention Model



The Vermont Prevention Model

The prevention model illustrates that there are many factors in play that influence individual and population health.

Health promotion efforts are most likely to be effective if they are:

- consistent with the needs and resources of the community
- developed with an understanding of the factors contributing to the problem
- designed to specifically address those factors
- inclusive of strategies addressing multiple levels of the model simultaneously
- sustainable over time
- age, gender and culturally appropriate
- evidence based or based on best and promising practices

Levels of influence

Individual
Factors that influence behavior such as knowledge, attitudes and beliefs
Strategies addressing this level of influence are designed to affect an individual's behavior.

Examples of individual level strategies include:

- one-on-one counseling using skills such as motivational interviewing and behavior modification techniques
- health education curricula
- media literacy education
- counseling on the health risks of tobacco use
- educational campaigns that state drinking and driving is "uncool"

Relationships
Influence of personal relationships and interactions
Strategies addressing this level of influence promote social support through interactions with others including family members, peers, and friends.

Examples of relationship level strategies include:

- youth empowerment and peer education groups (e.g. Our Voices Exposed Youth led movement against tobacco)
- parent education and family strengthening programs
- self management workshops (e.g. Healthier Living workshops)
- group walking programs
- mentoring programs

Organizations
Norms, standards and policies in institutions or establishments where people interact such as schools, worksites, faith based organizations, social clubs and organizations for youth and adults

Strategies addressing this level of influence are designed to affect multiple people through an organizational setting.

Examples of organizational-level strategies include:
- policies prohibiting tobacco use in schools and worksites
- after school programs offering physical activity programs
- worksites offering tobacco cessation programs
- worksite policies allowing flex time for physical activity or other wellness activities
- health insurance premium reductions for those with fewer risk factors (e.g., non-smokers)

Community
The physical, social, and cultural environments where people live, work, and play
Strategies addressing this level of influence are designed to affect behavioral norms through interventions aimed at the physical environment, community groups, social service networks and the activities of community coalitions and partnerships.

Examples of community-level strategies include:
- New Directions coalitions implementing evidence based alcohol and drug abuse prevention strategies
- A community tobacco coalition throwing a smoke free barbeque event
- Converting unused railways into recreation paths
- Developing bike paths

Policies and Systems
Local, state and federal policies; laws; economic influences; media messages and national trends that regulate or influence behavior
Strategies at this level are designed to have wide-reaching impact through actions affecting entire populations.

Examples of policy and systems-level strategies include:
- media campaigns and marketing to promote public awareness and advocacy for change.
- public advocacy to ban the use of items that target the branding of alcohol companies to youth (e.g. free t-shirts)
- legislation to prohibit smoking in public places
- taxes on "junk food"

Appendix B

CHAMPPS Grantees

State Fiscal Year 2010

Capacity Building Grants:

- **Green Mountain United Way** - Washington County. This organization was funded in FY'09 for capacity building. Due to a number of reasons, their community assessment was not completed. They plan to complete their assessment by January 1, 2010, disseminate the results to the community through March of 2010, and then identify and prioritize strategies for accessing healthy food and physical activity for families with young children. They will then work with high priority areas of Washington County to establish local plans for implementing the strategies. $40,000

- **Franklin Grand Isle United Way** - Enosburg. Funded in FY'09 for capacity building, this organization worked with a their partners and selected the Village and Town of Enosburg to focus their efforts. For FY 10, the Fit and Healthy Enosburg Committee will complete their planning process and move into implementation. They will build their coalition in Enosburg ensuring school, community, and parents are represented, as they will be focusing efforts on school and community based strategies. One project underway is a Brownfield redevelopment in Enosburg that this committee will ensure includes accessible opportunities for physical activity for all residents. In addition, the committee will collaborate with Fit & Healthy Swanton, a coalition several years into this type of work, for mentoring and to leverage resources as applicable. $35,000

- **Health Connections of the Upper Valley** - Royalton, Sharon. In FY'09 this organization narrowed their scope to the towns of Royalton and Sharon. The FY '10 application represents a partnership between the Fit and Healthy Coalition focused on improving physical activity and healthy eating, and the Tobacco Free Community Coalition. These groups will work together to assess, develop and implement (toward the end of the grant year) policy and environmental strategies to support families in making healthy choices regarding diet, exercise and tobacco use. $35,000

Implementation Grants:

- **Northeast Kingdom Community Action (NEKCA)** Newport. Will bring partners together to develop comprehensive list of opportunities for healthy eating and physical activity in Newport. Through targeted outreach and communications, they will make families with young children aware of opportunities for healthy eating and physical activity and they will work with local agencies to reduce barriers to accessing healthy food and activity opportunities. $40,000

- **Essex CHIPS** - Essex Town, Westford. Will work toward increasing awareness of physical activity opportunities and knowledge of healthy eating among families through the use of peer support for parents, community wide media, i.e. newsletters, community meetings, and school-based interventions. $40,000.

- **Windsor Area Community Partnership -** Windsor, Hartland, Weathersfield, W. Windsor. Will increase attendance in physical activity and nutrition programs sponsored by the town by coordinating and disseminating information about these opportunities to the target population. Will also work with the towns to have them include ways to increase the availability and accessibility of opportunities for physical activity and healthy eating through comprehensive plans, zoning ordinances, land use polices and will partner with them to seek resources to improve infrastructure to create recreation paths and offer farmers markets. $40,000

- **Ottauquechee Community Partnership** - Woodstock, Reading, Bridgewater. Will implement a comprehensive healthy food strategy through the schools in the proposed areas. This will include creating a school food policy promoting the use of healthy, fresh local food at snack time, in the cafeteria and with competitive school foods; developing farm to school teams; creating school gardens; and incorporating healthy food themes into curriculum, classroom activities and displays, and parent communications. For physical activity, they will expand on an existing, year-long community walking campaign for families with young children. $35,000

- **Fit and Healthy Lamoille Valley** – Morristown. Will increase community partners on coalition by connecting with at least four key stakeholders (including municipal groups and town planners) and engage them in the process of assessment and implementation of environmental and policy change supporting access to healthy food and physical activity opportunities. Will conduct a walkability study and review of Morristown's zoning regulations and general plan to develop policy recommendations to give to town planners. In addition, will create a comprehensive, coordinated list of existing resources and opportunities for healthy eating and physical activity for families with young children and will continue work with early childcare centers on including healthy eating and physical activity policies in their centers. $35,000

- **Fit and Healthy Swanton** - Swanton. This coalition will implement a number of strategies to ensure use by families and children of the newly developed town recreation path. In addition, will implement strategies to increase families offing fruits/veggies as snacks through school and community projects and events. Finally, Fit and Healthy Swanton will mentor Fit and Healthy Enosburg as they begin their efforts. $38,435

- **Winooski Coalition for a Safe and Peaceful Community** – Winooski. Winooski is completing their third year of CHAMPPS funding . They have a coalition of partners addressing physical activity and healthy eating across the lifespan. Last year, they conducted focus groups to assess environmental barriers for residents being physically active and accessing healthy food. This year they will complete this assessment and develop recommendations and strategies based on the results. $60,000

- **Rutland Area Physical Activity Coalition (RAPAC)** – Rutland. RAPAC is completing their third year of CHAMPPS funding. For this year RAPAC will offer community wide, physical activity events, educate adults and children about the benefits of, and opportunities for, physical activity in the county, and work with stakeholders to encourage the development and use of policies to create an environment supportive of physically active lifestyles in Rutland County. $67,028

- **Parks Place Resource Center –** Bellows Falls, VT. Will serve Rockingham, Westminster, Brattleboro and Springfield. Parks Place is completing their third year of CHAMPPS funding to reduce the incidence of lead poisoning in children through increased testing; training of landlords and contractors in essential maintenance practices and lead-safe renovation practices; education and outreach to medical providers, social service providers, local officials and legislators, and the community at large; case consultation. $42,000

Strategic Prevention Framework Grants:

Grantees funded with SAMHSA Strategic Prevention Framework funds will receive funding through June 30, 2011, contingent upon adequate performance of grant work specifications.

- **The Collaborative** – South Londonderry, VT. Serving the Northshire and Mountain Communities (Londonderry, Weston, Langrove, Peru, Dorset, Danby, Pawlet, Rupert, Sunderland, Stratton, Winhall, Manchester, Mt. Tabor) Funded exclusively with SAMHSA SPF funds to reduce youth substance use. $ 120,000.

- **Franklin County Caring Communities and Grand Isle County Clean Team**- Isle La Motte. Addressing underage and high risk drinking through collaboration with law enforcement, development of community public policy, media campaign, social marketing, school curriculum and underage drinking. $134,943.

- **Hartford Prevention Coalition**- White River Junction. Communities Mobilizing for Change on Alcohol including policy change for diversion, social host liability and soci8al access. Also, medial campaign and drug free work place program. $ 120,000.

- **Prevention Partnership of Braintree**, Brookfield and Randolph-Randolph. Addressing Underage Drinking and marijuana use through mobilizing communities for change, media campaign and drug free work place program. $ 63,000.

State Fiscal Year 2009

Capacity Building Grants:

Initiatives All Funded with CHAMPPS State Funds

- **Essex CHIPS** – Essex Town, Essex Junction and Westford. To broaden efforts beyond tobacco and substance abuse to include physical activity and nutrition, while making use of existing community assessments. $49,272

- **Fit and Healthy Kids Coalition of Windham County** – Windham County. This coalition's mission has been to engage the community in raising fit and healthy children. They completed an assessment on physical activity and nutrition and developed a strategic plan to address identified issues. $38,685

- **Town of Milton Recreation Department** – Milton. The Town of Milton applied for CHAMPPS funding in 2007, but was not successful. An ad hoc group worked to implement nutrition and physical activity programs. They planed to create a Milton Health Advisory Group, composed of opinion leaders and community members, and hire a consultant to do the needs assessment using a VDH endorsed assessment tool. $21,145.

- **Green Mountain United Way** – Washington County. This organization's mission is to mobilize the caring power of the community. They conducted a community assessment in 2004 and planned to work with the organizations and information collected during that assessment to develop a health collaborative within each supervisory union that would link with the Central Vermont Coalition Also planned to hold a community forum to discuss assessment findings and identify root causes of barriers and gaps. $50,000

- **Health Connections of the Upper Valley, Inc.** Royalton, Sharon, Strafford. This coalition worked closely with the primary care providers at the South Royalton Health Center. They conducted a broad-based community assessment of the Orange-Windsor Supervisory Union and planned to establish a physical activity and nutrition-specific coalition consisting of community members interested in this issue. Also planned to conduct an assessment using VDH endorsed tools, and develop a work plan based on assessment results. $50,000

- **Franklin/Grand Isle Community Partnership** – Franklin/Grand Isle Counties. This partnership included coalitions with a background in addressing tobacco and substance abuse. They had an overarching goal to have 50% of partnership organizations implement at least one prevention initiative. They planed to assess their partnership to identify underrepresented segments of the population, conduct a Community Capacity Assessment, and develop a five year work plan. VDH staff planned to work closely with this organization to craft a work plan consistent with the intent of CHAMPPS. $50,000.

Implementation Grants : (Formerly Funded with CDC Obesity Prevention Funds):

- **Fit and Healthy Swanton** – Swanton, VT. Swanton was the first pilot community for the Fit and Healthy community grants process in 2007. They identified the need for a community walking path, which was completed in October, In addition, Swanton collaborated with local restaurants, the grocery store, and elementary school, implementing an "Eat More Colors" campaign at the school with monthly taste testing and information sent home to parents. For following year, they planned to continue community engagement and involvement around the walking path, offering activities for parents and children to be active together and promoted healthy eating in the schools, local restaurants and grocery stores. $80,000

- **Fit and Healthy Morrisville** – Morrisville, VT. After several months of community assessment, information gathering and discussion, the Fit and Healthy Lamoille Valley Advisory Committee held a community forum in April. As a result, the advisory committee approached schools and child care center officials to discuss possibilities of collaboration. In the subsequent year they planned to work in early childcare settings throughout the community to implement policy and environmental changes

with the goal of increasing physical activity and good nutrition for children and families, while continuing to build partnerships and capacity in the broader community. $38,000.

Strategic Prevention Framework Grants:

Grantees funded with SAMHSA Strategic Prevention Framework funds will receive funding through June 30, 2011, contingent upon adequate performance of grant work specifications.

- **The Collaborative** – South Londonderry, VT. Serving the Northshire and Mountain Communities (Londonderry, Weston, Langrove, Peru, Dorset, Danby, Pawlet, Rupert, Sunderland, Stratton, Winhall, Manchester, Mt. Tabor) Funded exclusively with SAMHSA SPF funds to reduce youth substance use. $ 96,978.

- **Franklin County Caring Communities and Grand Isle County Clean Team**- Isle La Motte. Addressing underage and high risk drinking through collaboration with law enforcement, development of community public policy, media campaign, social marketing, school curriculum and underage drinking. $73,000.

- **Hartford Prevention Coalition**- White River Junction. Communities Mobilizing for Change on Alcohol including policy change for diversion, social host liability and soci8al access. Also, medial campaign and drug free work place program. $ 63,000.

- **Prevention Partnership of Braintree**, Brookfield and Randolph-Randolph. Addressing Underage Drinking and marijuana use through mobilizing communities for change, media campaign and drug free work place program. $ 63,000.

State Fiscal Years 2007 and 2008

Capacity Building Grants:

Initiatives Funded with CHAMPPS State Funds: Grantees funded through state CHAMPPS funds will receive funding annually, based upon adequate performance of grant work specifications and continued state funding.

- **Chelsea Area Resource Exchange (C.A.R.E) –** Tunbridge, VT Serving Chelsea, Tunbridge, Vershire and Washington. Development of new coalition - membership, charter, plans- for community health assessment. $ 60,000

- **Northeast Kingdom Community Action –** Newport, VT- to serve Orleans and northern Essex counties in the Northeast Kingdom. Planned to complete systematic review of existing community data and generate a Community Report Card; build a community health coalition; generate a strategic regional plan for community health; and generate an early childhood regional plan (linked to community health plan). $ 60,000

Initiatives Funded with federal SPF funds: Grantees funded with SAMHSA Strategic Prevention Framework funds to receive funding through June 30, 2011, contingent upon adequate performance of grant work specifications.

- **Grand Isle County Clean Team & Franklin County Caring Communities –** Isle La Motte- Serving all of Franklin and Grand Isle counties. Planned to conduct needs assessment and form community partnerships to build, strengthen and enhance efforts to reduce underage drinking. $ 68,000

- **Prevention Partnerships of Braintree, Brookfield and Randolph –** Randolph, VT- to serve the towns of Braintree, Brookfield and Randolph in Central Vermont. Planned to build coalition capacity and conduct needs assessment to better address issues of underage drinking. $ 68,000

Initiatives Supported with a Combination of CHAMPPS and SPF funds:

- **Ottauquechee Community Partnership –** North Pomfret, VT. Serving six towns from the Windsor Central Supervisory Union (Banard, Bridgewater, Killington, Pomfret, Reading, and Woodstock) and five towns of the Hartford School District (Hartford, West Hartford, Quechee, White River Junction and Wilder) Received $68,000 from SAMHSA SPF funds and $30,000 general health and wellness funds Planned to form new prevention coalition in Hartford, expand OCP's initiatives beyond alcohol, tobacco and other drug abuse issues and conduct community assessment and joint strategic planning. $ 98,000

Implementation Grants:

Initiatives Funded with CHAMPPS State Funds: Grantees funded through state CHAMPPS funds received funding annually, based upon adequate performance of grant work specifications and continued state funding.

- **Parks Place Resource Center –** Bellows Falls, VT. Served Rockingham, Westminster, Brattleboro and Springfield. Planned to reduce the incidence of lead poisoning in children through increased testing; training of landlords and contractors in essential maintenance practices and lead-safe renovation practices; education and outreach to medical providers, social service providers, local officials, legislators, and the community at large; case consultation. $ 70,000

- **Rutland Area Physical Activity Coalition –** All of Rutland, VT. Outreach/education regarding benefits of and opportunities for physical activity and healthy diet; encouraged creation of built environments to support; ongoing physical activity events throughout Rutland County. $111,714

- **Winooski Community Center –** Winooski, VT. Nutrition and physical activity interventions across the lifespan coordinated through the Winooski Community Center; included Winooski Health Program (through FAHC CHI), senior fitness program, Get Moving Winooski!, Winooski Girl Scouts, Camp Dream, Fit WIC, Food To Grow On nutritional support to child care providers. $100,000

Appendix F. 2009 Shared Decision Making Report (Act 49, Section 4)

VERMONT2009

Shared Decision Making

Report to the Legislature on **Act 49, Section 4**
January 15, 2010

VERMONT
DEPARTMENT OF HEALTH
Agency of Human Services
Vermont Blueprint for Health
108 Cherry Street
PO Box 70
Burlington, VT 05402
(802) 652-2095

Introduction

In 2009, the Vermont State Legislature passed Act 49, an act relating to containing health care costs. Act 49, Section 4 reads as follows:

"(a) No later than January 15, 2010, the secretary of administration or designee shall present a plan to the house committees on health care and on human services and the senate committee on health and welfare for a shared decision-making demonstration project to be integrated with the Blueprint for Health. The purpose of shared decision-making shall be to improve communication between patients and health care professionals about equally or more effective treatment options where the determining factor in choosing a treatment is the patient's preference. The secretary shall consider existing resources and systems in Vermont as well as other shared decision-making models. The plan shall analyze potential barriers to health care professionals participating in shared decision-making, including existing law on informed consent, and recommend solutions or incentives to encourage participation by health care professionals in the demonstration project.

(b) "Shared decision-making" means a process in which the health care professional and patient or patient's representative discuss the patient's health condition or disease, the treatment options available for that condition or disease, the benefits and harms of each treatment option, information on the limits of scientific knowledge on patient outcomes from the treatment options, and the patient's values and preferences for treatment with the use of a patient decision aid.

In accord with Act 49, Section 4, the Vermont Blueprint for Health will commence a one year long shared decision-making pilot in the Barre Hospital Service Area Integrated Pilot on July 1, 2010. The affected population will include 20,000 potential patients in the following primary care practices: The

Health Center at Plainfield, Central Vermont Primary Care, Associates in Family Health, Waterbury Medical Associates, and Dr. Anthony Williams.

The pilot will be focusing on the identified cost and morbidity drivers for the following preference- or behavior-sensitive conditions: congestive heart failure hospital re-admissions, cardiovascular procedures performed, and asthma-related emergency department visits. Recognizing the significant cost associated with musculoskeletal surgical and imaging procedures, these will be addressed, but in an exploratory manner, as the Blueprint does not yet have working relationships with specialists in the field of orthopedics.

The study population will be exposed to a "patient decision aid", defined as an interactive, written, audio-visual or online tool that provides a balanced presentation of the condition and treatment options, benefits and harms, including a discussion of the limitations of scientific knowledge about outcomes (if appropriate).

At least one of the following nationally certified interventions will be applied: 4PatientCare Unified Communication Solutions, Ottawa Personal Decision Guide, patient decision aids from InformedMedicalDecisions.org, Health Dialogue, and the Cochrane Collaboration.

Evaluation of the pilot will be accomplished in alignment with the overall Blueprint evaluation, including pre and post comparisons of hospital service area-specific incidence and prevalence of the indicators above, patient satisfaction and cost analyses, including application of the Blueprint financial impact model to determine the potential "return on investment".

References

1. Vermont Blueprint for Health 2008 Annual Report to the Legislature

http://healthvermont.gov/admin/legislature/documents/BlueprintAnnualReport0109.pdf

2. Washington State Chapter 259, Laws of 2007, SB 5930 Sections 9, 10, 13
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3. Washington State Health Care Health Care Authority Demonstration Summary

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4. The Dartmouth Institute for Informed Choice
http://www.dartmouth.edu/~cecs/siipc/

5. Health Dialog
http://www.healthdialog.com/Main/Personalhealthcoaching/Shared-Decision-Making

6. The Cochrane Collection
http://www.cochrane.org/reviews/en/protocol_7E06852C82E26AA200E107D9E7B2BC72.html

Appendix G: Health Care Cost Correlation and Hospital Charge Driver Analysis report

Health Care Cost Correlation and Hospital Charge Driver Analysis

Vermont Blueprint for Health

Vermont Department of Health
Center for Health Statistics

February 2010

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Section VII

Demographics and Risk Factors by Hospital Service Area

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Section VIII

All Data by Organized by Condition

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Section VIII (continued)

All Data by Organized by Condition (continued)

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Section VIII (continued)

All Data by Organized by Condition (continued)

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Section VIII

The Rest of Section 8 is Still in Draft Format

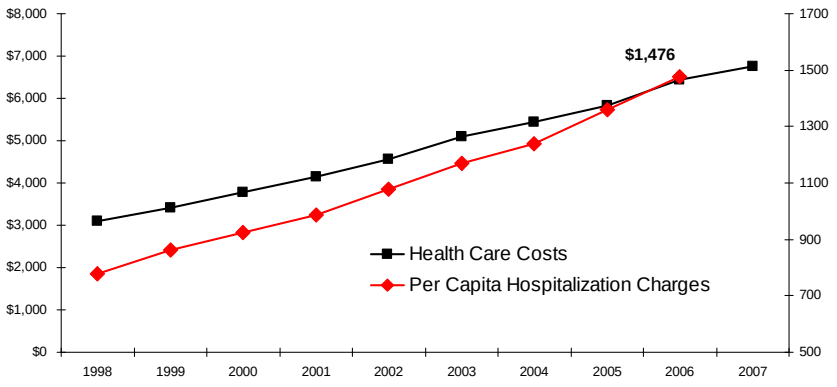
More Data by Condition Sections

Coming Soon

Associations with Change in Vermont Health Care Costs Per Capita

1998 - 2007

Vermont Per Capita Health Care Costs and Hospitalization Charges and Visits



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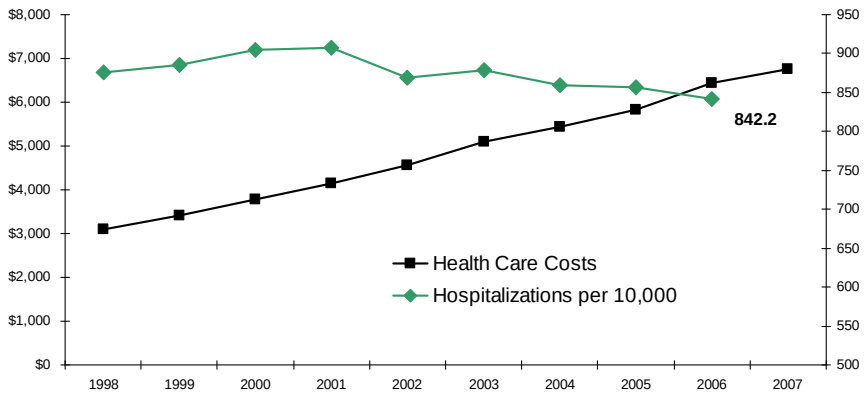
Significance < 0.001



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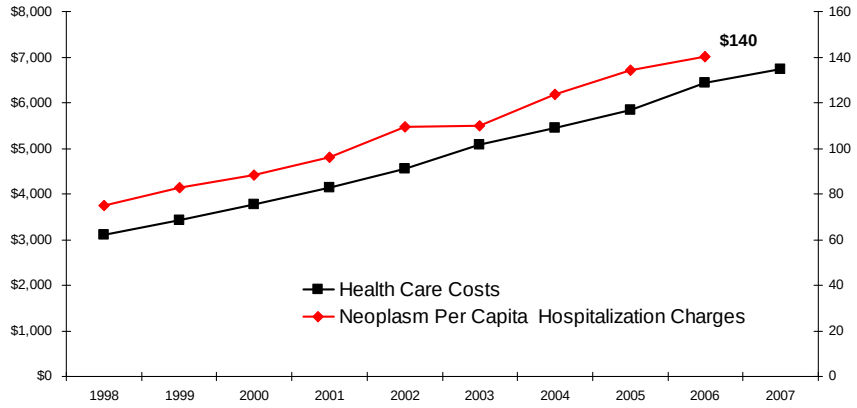
Per Capita Health Care Charges and Hospitalizations



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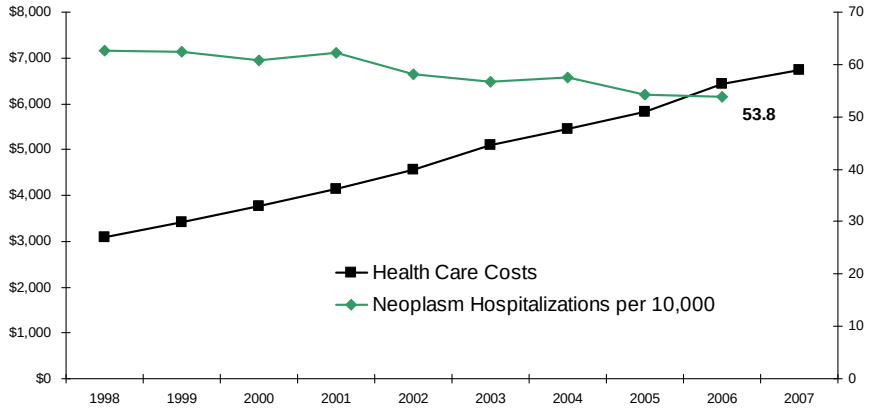

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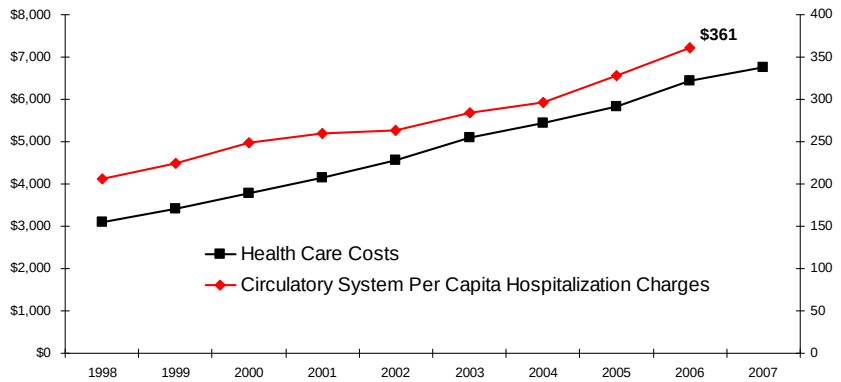

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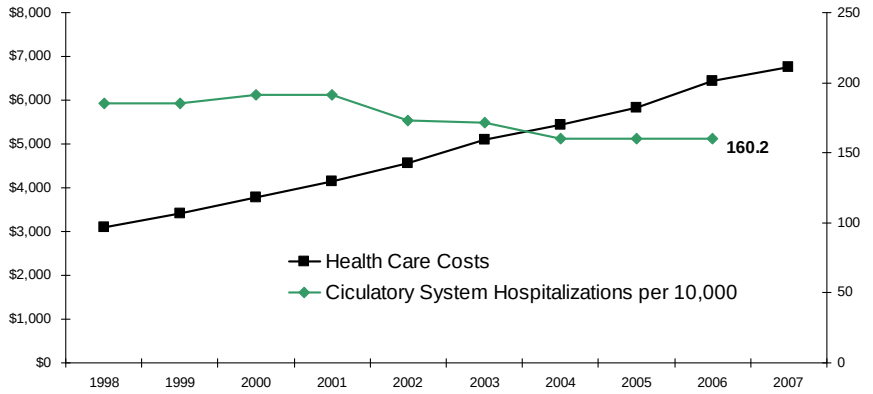

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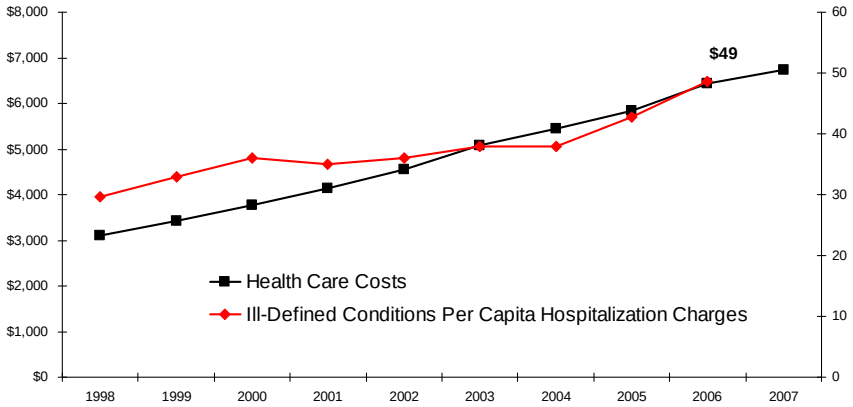
Per Capita Health Care Charges and Hospitalizations



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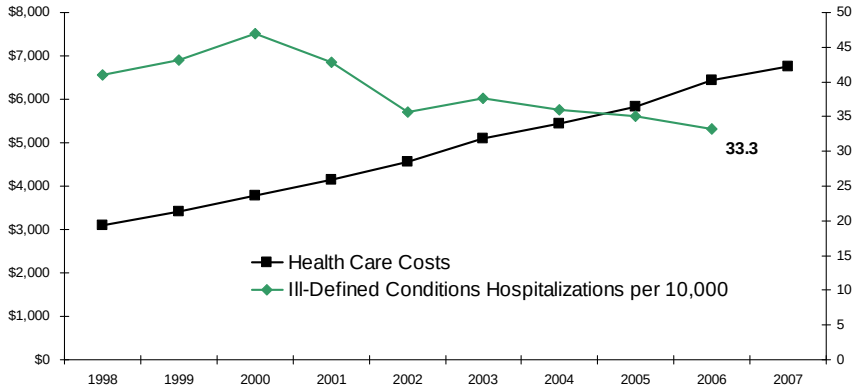

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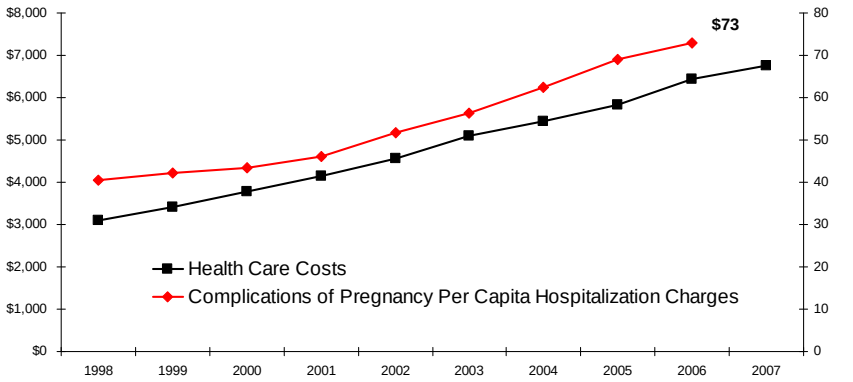

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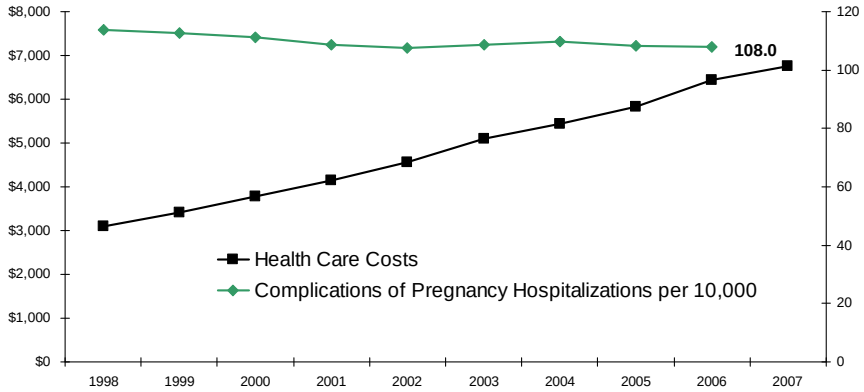

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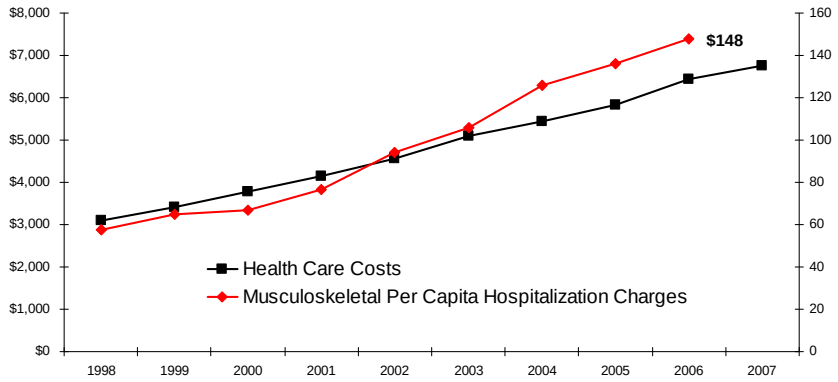
Per Capita Health Care Charges and Hospitalizations



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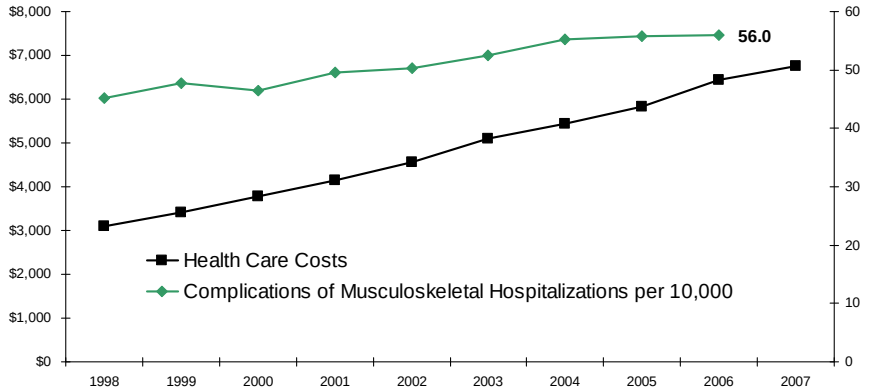

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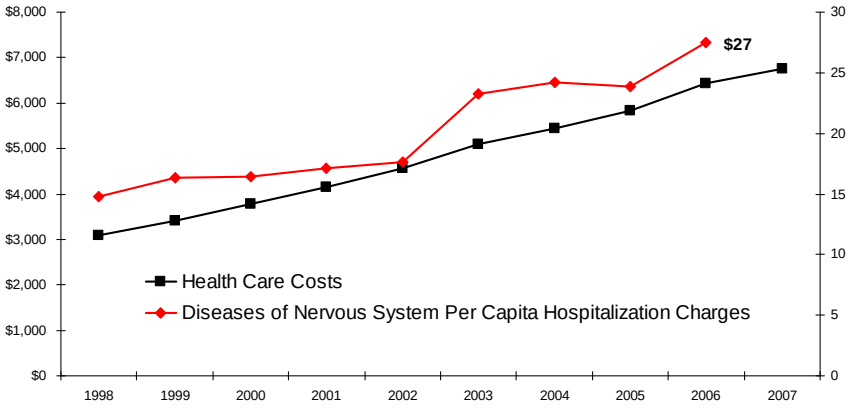

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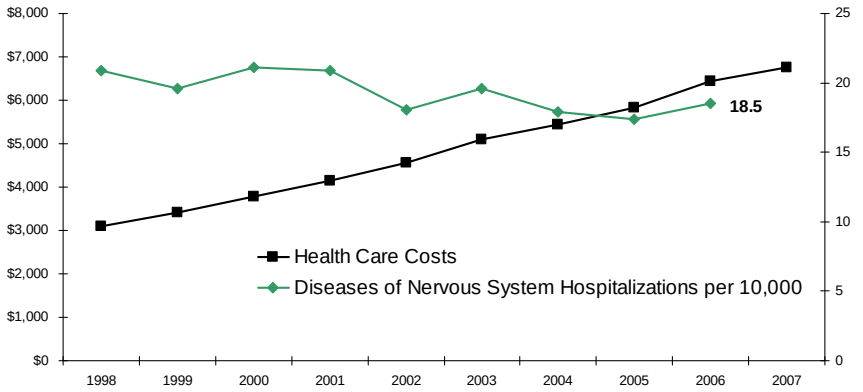

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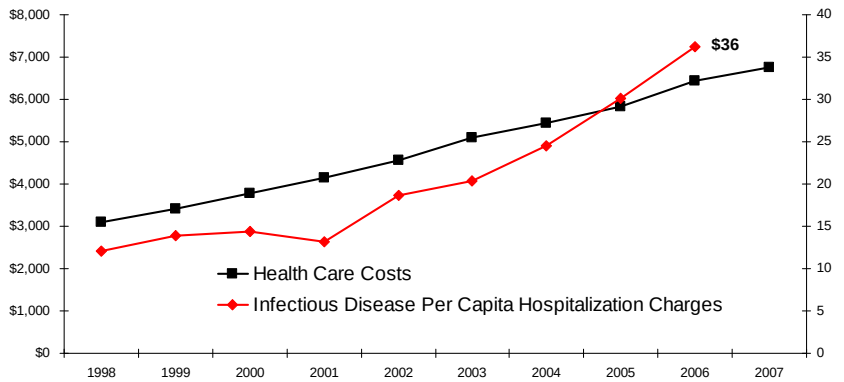
Per Capita Health Care Charges and Hospitalizations



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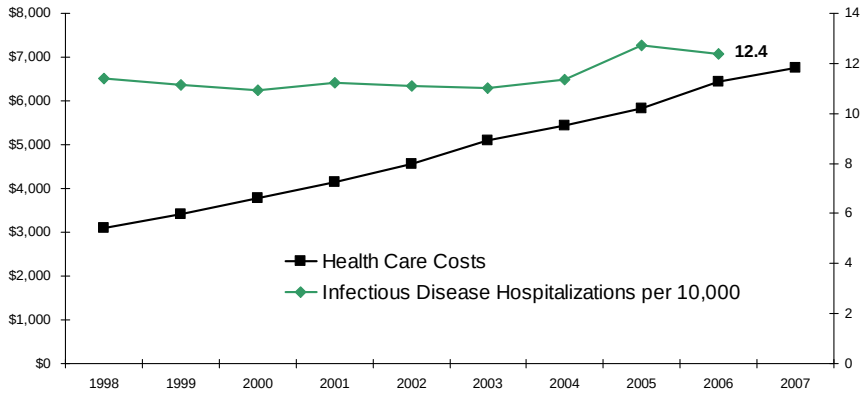

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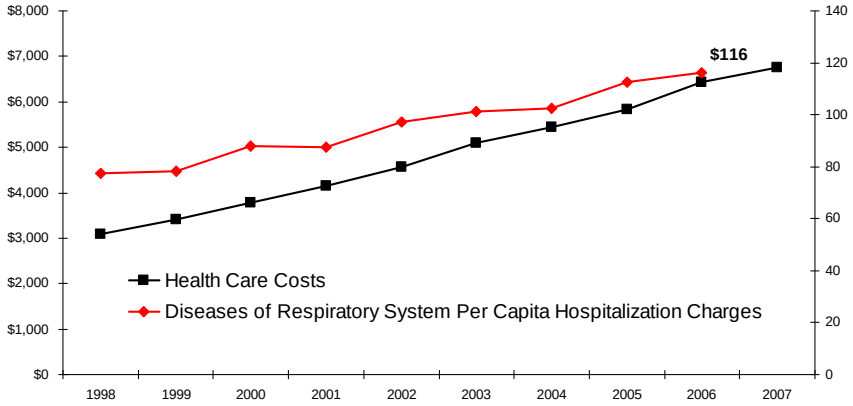

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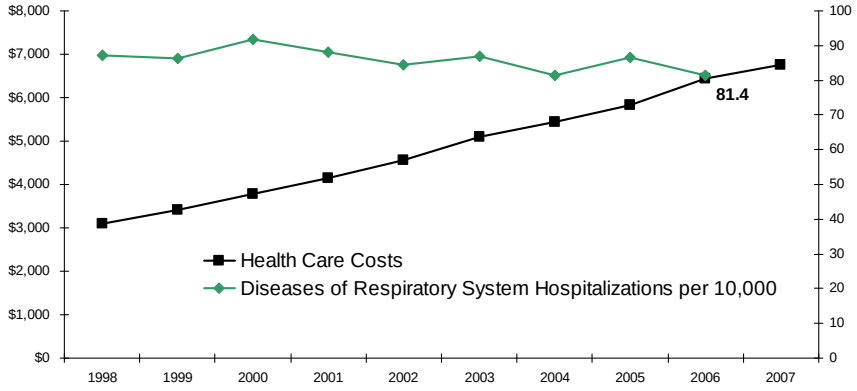

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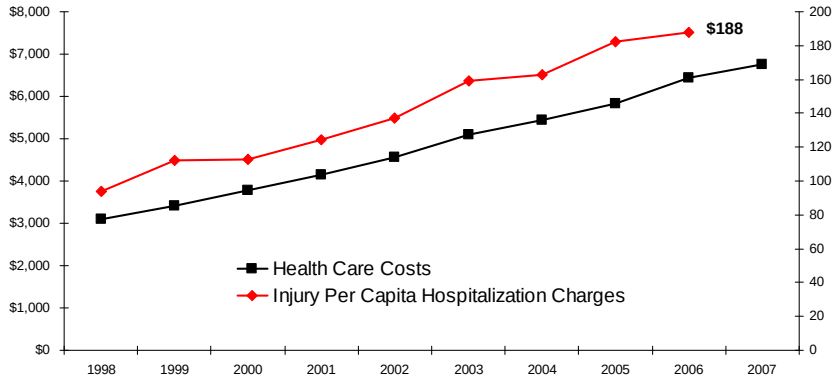
Per Capita Health Care Charges and Hospitalizations



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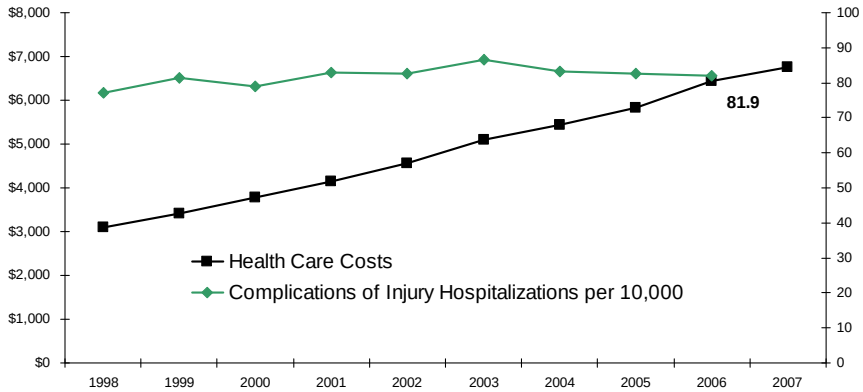

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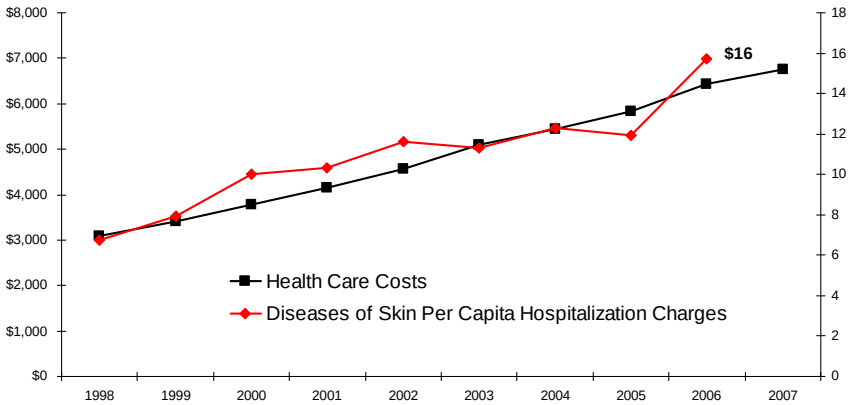

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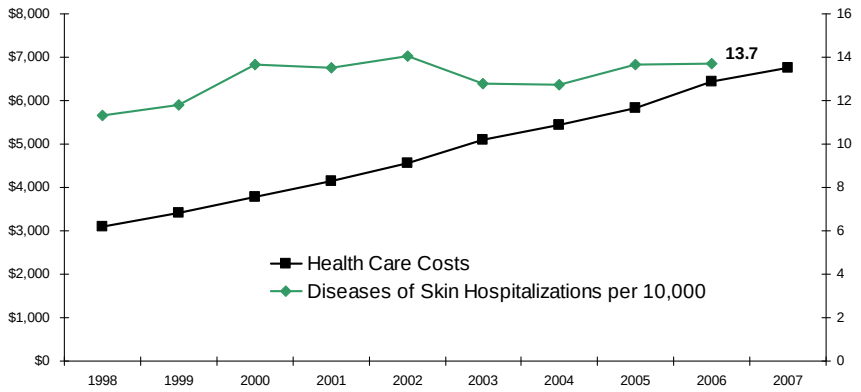

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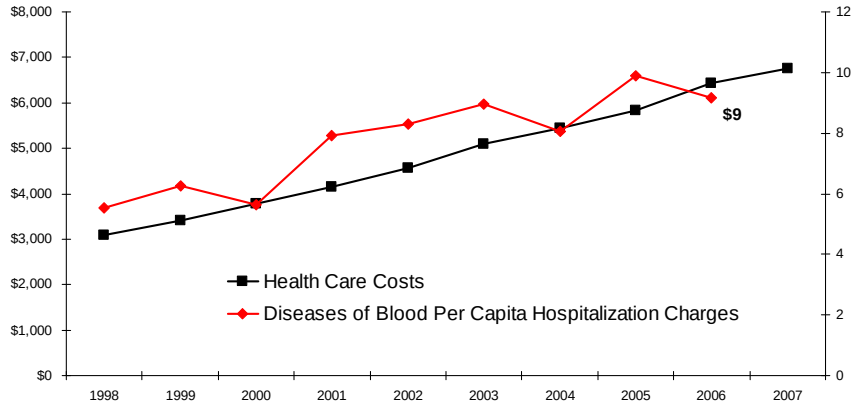
Per Capita Health Care Charges and Hospitalizations



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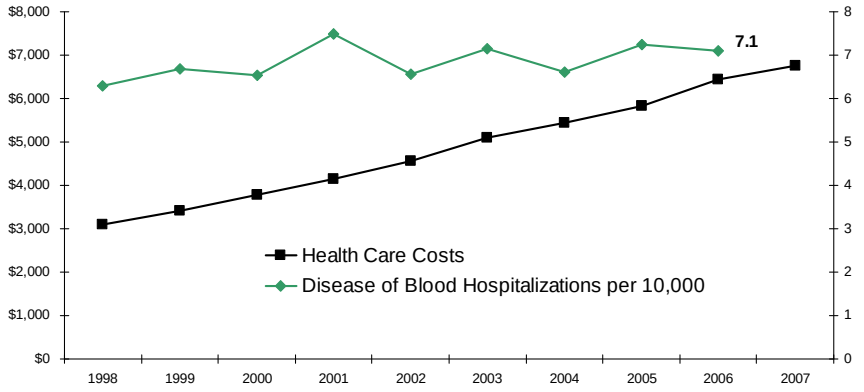

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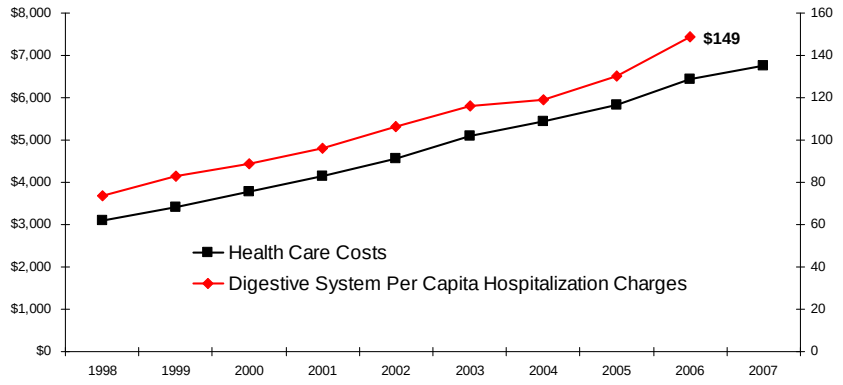

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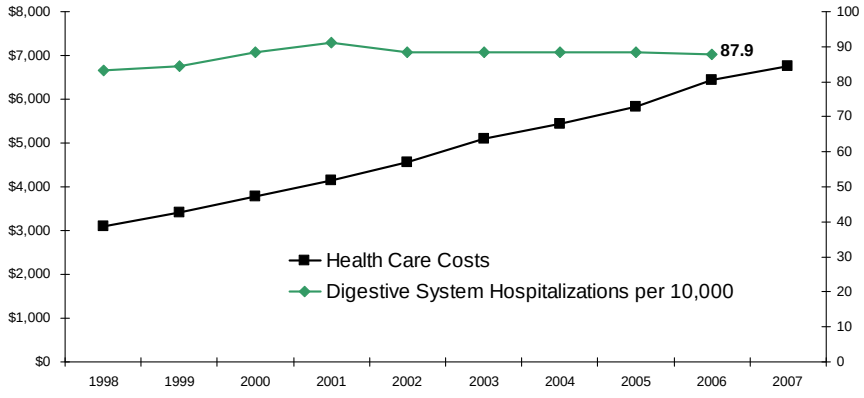

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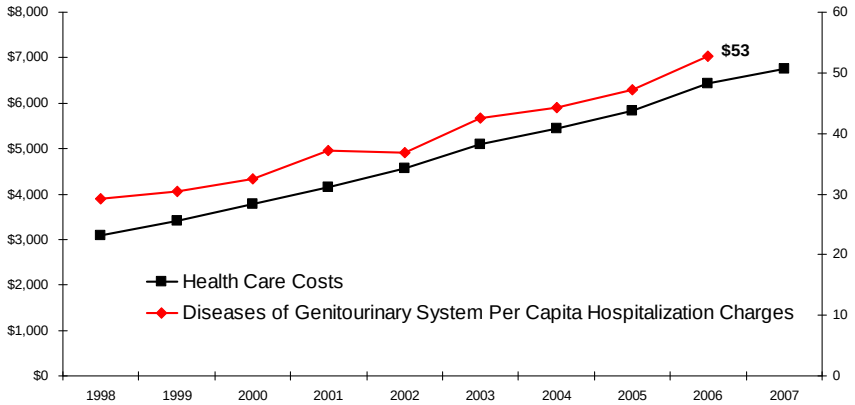
Per Capita Health Care Charges and Hospitalizations



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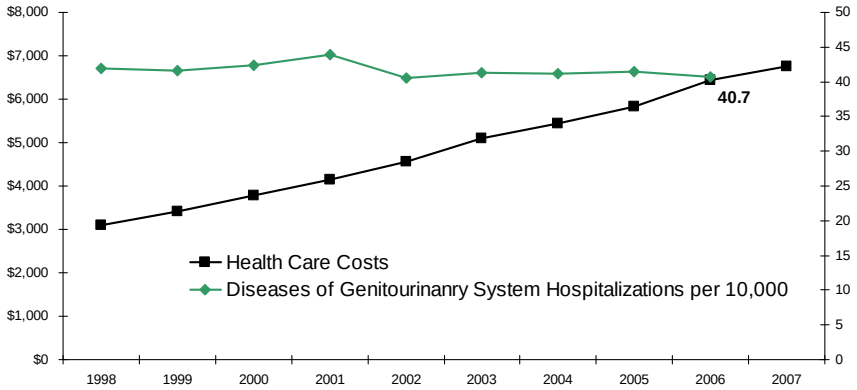

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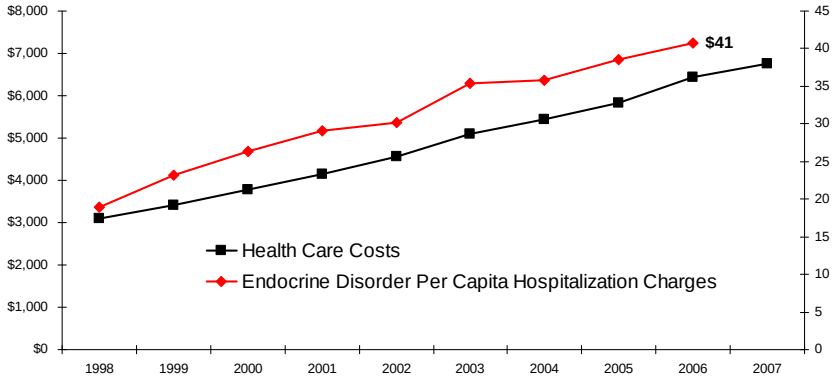

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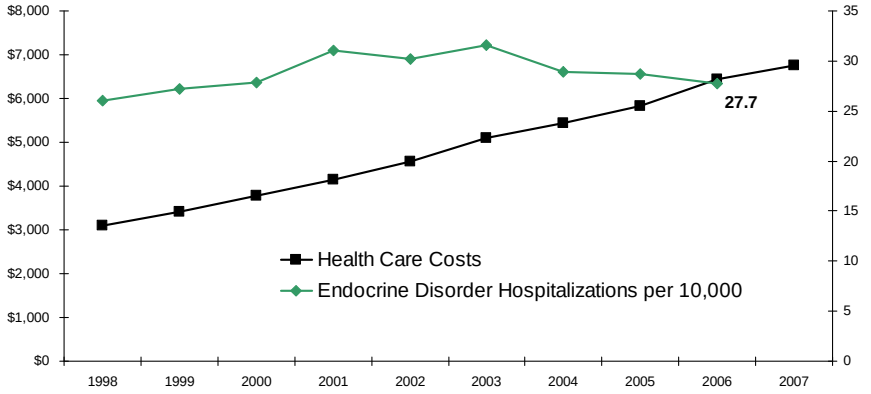

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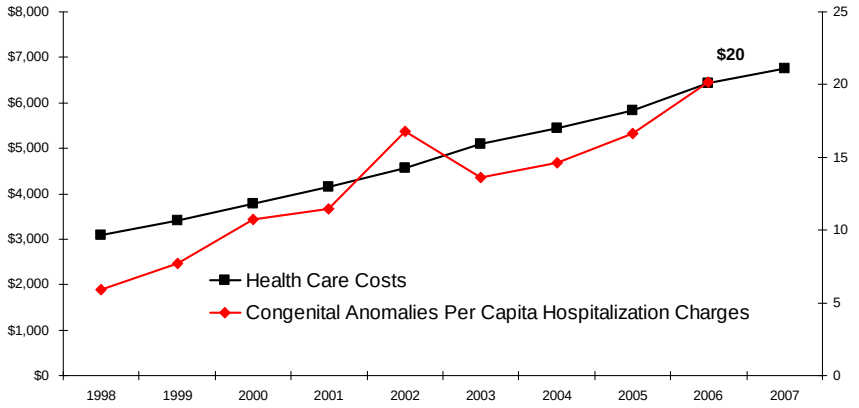
Per Capita Health Care Charges and Hospitalizations



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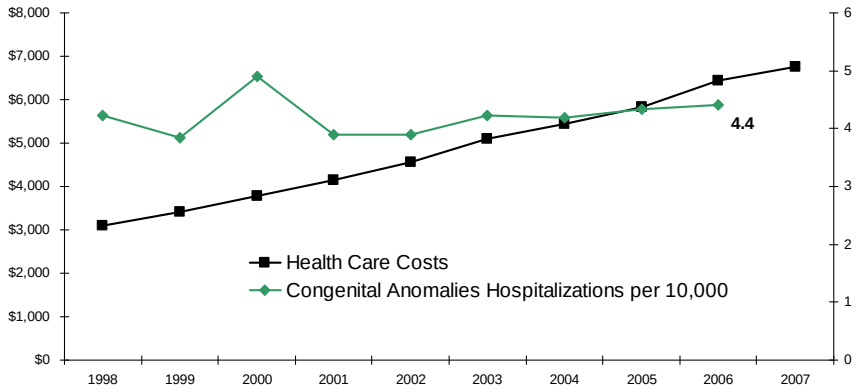

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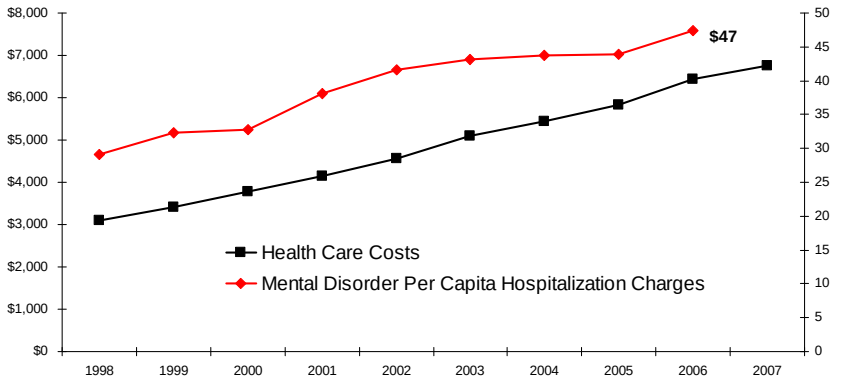

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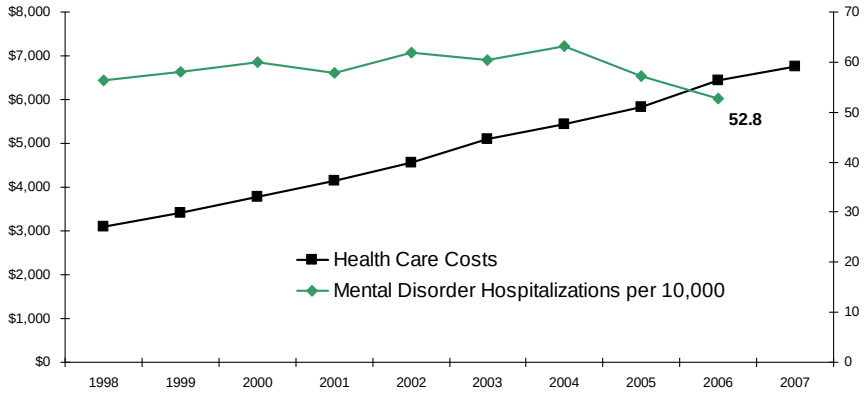


$R^2 = 0.03$; Sig = 0.68

Tab 1
Additional Data

Summary of Associations with VT Health Care Costs (1998 – 2007)

Per Capita Health Care Costs by: Per Capita Hospitalization Charges for:	R^2	Significance
All	0.99	<0.001
Digestive System	0.99	<0.001
Neoplasm	0.98	<0.001
Complications of Musculoskeletal	0.98	<0.001
Complications of Injury	0.98	<0.001
Endocrine Disorder	0.97	<0.001
Circulatory System	0.97	<0.001
Diseases of the Respiratory System	0.97	<0.001
Complications of Pregnancy	0.97	<0.001
Mental Disorder	0.93	<0.001
Disease of the Nervous System	0.93	<0.001
Infectious Disease	0.91	<0.001
Diseases of the Skin	0.88	<0.001
Ill-Defined Conditions	0.88	<0.001
Congenital Anomalies	0.86	<0.001
Disease of the Blood	0.79	0.001

Per Capita Health Care Costs by: Hospitalization Rate Per 10,000 for:	R^2	Significance
Neoplasm	0.92	<0.001
Ill-Defined Conditions	0.68	0.006
Complications of Pregnancy	0.6	0.01
Complications of Musculoskeletal	0.94	0.01
All	0.54	0.02
Disease of the Nervous System	0.56	0.02
Infectious Disease	0.47	0.04
Diseases of the Respiratory System	0.42	0.06
Complications of Injury	0.33	0.1
Diseases of the Skin	0.32	0.11
Disease of the Blood	0.27	0.15
Digestive System	0.24	0.18
Diseases of the Genitourinary System	0.22	0.2
Endocrine Disorder	0.1	0.42
Congenital Anomalies	0.03	0.67
Mental Disorder	0.03	0.68

Summary of Associations with VT Health Care Costs (1998 – 2007)

Per Capita Health Care Costs by Chronic Disease Prevalence	R^2	Significance
Diabetes	0.81	<0.001
Obesity	0.89	<0.001
Osteoporosis	0.88	<0.001
Arthritis	0.72	0.004
Asthma	0.65	0.009
Cancer	0.61	0.22
COPD	0.32	0.24
CVD	0.06	0.5

Per Capita HCC by Demographics		
Median Income	0.94	<0.001
High School or Less	0.9	<0.001
Racial and Ethnic Minority	0.88	<0.001
Age 65+	0.64	0.005
Female	0.55	0.01
Unemployment	0.39	0.06
< 250% FPL	0.05	0.56

Per Capita Health Care Costs by Risk Factor Prevalance	R^2	Significance
Current Smoking	0.91	<0.001
Hypertension	0.98	<0.001
Second Hand Smoke	0.98	<0.001
No Leisure Time Physical Activity	0.72	0.002
Meet Physical Activity Guidelines	0.83	0.005
Poor Mental Health	0.39	0.05
Eat Recommended Fruit and Veggies	0.32	0.09
No Regular PCP	0.45	0.1
Binge Drinking	0.12	0.31
No Health Insurance	0.02	0.69
Poor General Health	0.09	0.73
65+ Not Vaccinated for Pneu	0.76	0.024
PCP FTEs	0.52	0.03

Summary of Associations with VT Health Care Costs (1998 – 2007)

Per Capita Health Care Cost by Per Capita Hospitalization Charges for Primary DX

Cancer	0.98	<0.001
Cardiovascular	0.97	<0.001
Heart Failure	0.97	<0.001
Osteoarthritis	0.97	<0.001
Diabetes	0.88	<0.001
COPD	0.73	0.003
Asthma	0.71	0.005
Hypertension	0.58	0.02
Obesity	0.56	0.02

Per Capita Health Care Cost by Hospitalization Rates Per 10,000 for Primary DX

Osteoarthritis	0.97	<0.001
Cancer	0.87	0.001
Cardiovascular	0.78	0.001
Heart Failure	0.78	0.001
Obesity	0.26	0.16
Diabetes	0.32	0.19
COPD	0.13	0.34
Hypertension	0.01	0.74
Asthma	0.01	0.86

Per Capita Health Care Cost by Per Capita Hospitalization Charges for Any Mention DX

Diabetes	0.98	<0.001
Asthma	0.99	<0.001
Hypertension	0.99	<0.001
Obesity	0.98	<0.001
Cardiovascular	0.99	<0.001
Heart Failure	0.99	<0.001
Cancer	0.98	<0.001
Osteoarthritis	0.98	<0.001
COPD	0.97	<0.001

Per Capita Health Care Cost by Hospitalization Rates Per 10,000 for Any Mention DX

Obesity	0.99	<0.001
Asthma	0.96	<0.001
Osteoarthritis	0.91	<0.001
Hypertension	0.89	<0.001
Diabetes	0.7	0.005
Cancer	0.63	0.01
Cardiovascular	0.62	0.01
Heart Failure	0.62	0.01
COPD	0.12	0.36

Factors Contributing to In-Patient Hospital Charges in Vermont (Regression Results)

1997 - 2006

Methodology for Regression

- Assess contributors to 'high' hospital charges
  - High defined as $10,000 or more
  - Approximately one-third of hospitalizations can be categorized by 'high'
- Data analysis take account for variations in age, gender, patient severity (Charlson Index) and other variables
- Following table displays variables that have strongest association with a high charge
  - For example, hospitalizations where 5 or more days are spent in the hospital are 53 times more likely to have a "high" hospital charge

Results of Multiple Variable Regression on Factors Contributing to High In-Patient Hospital Charges

	Odds Ratio
Days in Hospital, 5+	52.6
Surgical Procedures	
Musculoskeletal	24.4
Cardiovascular	16.7
Endocrine system	12.7
5 or More Procedures	11.7

- Items with apparent charge predictive impact:
  - Days in the Hospital
  - Musculoskeletal, Cardiovascular, and Endocrine surgical procedures
  - Number of procedures
- Items with little predictive value:
  - Charlson Index (severity)
  - Type and/or Number of Diagnosis
  - Payment Method
  - Hospital
  - Gender
  - With caveats: Age

Specific Procedures Driving Charges

Operations on:	Odds Ratio	Number of Procedures 1997 - 2006
Musculoskeletal System (Arthroplasty Knee, hip replacement, treatment of fracture/dislocation of hip/femur, spinal fusion, fracture/dislocation of lower extremity, amputation of lower extremity, other procedures on muscles or tendons)	24.4	21,292
Cardiovascular System (PTCA (angioplasty), cardiac catheterization, coronary ateriography, Other vascular catheterization, CABG, procedures on vessels, endarterectomy, heart valve procedures)	16.7	22,466
Endocrine System (Thyroidectomy, partial or complete; Other therapeutic endocrine procedure)	12.7	394

Tab 2
Additional Data

Complete Regression Analysis Results
Predictors of Hospital Charges (1997 - 2006 Combined)

DX as Multiple Response
Charlson Index Included
"High" Charge Defined as $10,000 or more

Sorted by Variables Tested and Significance within Variable

		Significance	Odds Ratio
Number of procedures	5+	<0.001	11.7
Number of procedures	2-4	<0.001	2.4
Number of procedures	1	0.79	1.0
Number of procedures	0		1
Number of Diagnoses	15+	<0.001	2.0
Number of Diagnoses	10-14	<0.001	1.4
Number of Diagnoses	5-9	<0.001	1.2
Number of Diagnoses	2-4	0.01	1.1
Number of Diagnoses	1		1
Year	2006	<0.001	11.2
Year	2005	<0.001	8.8
Year	2004	<0.001	6.3
Year	2003	<0.001	4.5
Year	2002	<0.001	3.2
Year	2001	<0.001	2.3
Year	2000	<0.001	1.9
Year	1999	<0.001	1.6
Year	1998	<0.001	1.2
Year	1997		1
Diagnoses - Any Mention	NEOPLASM	<0.001	1.4
Diagnoses - Any Mention	TRAUMA	<0.001	1.4
Diagnoses - Any Mention	RESPIRATORY	<0.001	1.3
Diagnoses - Any Mention	LIVER & PANCREAS	<0.001	1.3
Diagnoses - Any Mention	MALE REPRODUCTIVE*	<0.001	1.3
Diagnoses - Any Mention	BRAIN AND C.N.S.	<0.001	1.2
Diagnoses - Any Mention	HEART & CIRCULATORY	<0.001	1.2
Diagnoses - Any Mention	FEMALE REPRODUCTIVE*	<0.001	1.1
Diagnoses - Any Mention	SPLEEN & BLOOD	<0.001	1.1
Diagnoses - Any Mention	DIGESTIVE	<0.001	0.9
Diagnoses - Any Mention	MENTAL ILLNESS	<0.001	0.8
Diagnoses - Any Mention	SKIN AND BREAST	<0.001	0.7
Diagnoses - Any Mention	SUBSTANCE ABUSE	<0.001	0.6
Diagnoses - Any Mention	EYE	<0.001	0.5
Diagnoses - Any Mention	NEONATAL	<0.001	0.4
Diagnoses - Any Mention	PREGNANCY & CHILDBIRTH*	<0.001	0.3
Diagnoses - Any Mention	MUSCULOSKELETAL	0.01	1.0
Diagnoses - Any Mention	ENDOCRINE	0.01	1.0
Diagnoses - Any Mention	ALL OTHER	0.14	1.0
Diagnoses - Any Mention	LYMPHATIC	0.35	1.0
Diagnoses - Any Mention	EAR, NOSE & THROAT	0.54	1.0
Diagnoses - Any Mention	KIDNEY & URINARY	0.67	1.0
Diagnoses - Any Mention	INFECTION	0.73	1.0
Diagnoses - Any Mention	INJURY AND POISONING	0.92	1.0

Procedures	Operations on the musculoskeletal system	<0.001	24.4
Procedures	Operations on the cardiovascular system	<0.001	16.7
Procedures	Operations on the endocrine system	<0.001	12.7
Procedures	Operations on the nervous system	<0.001	6.9
Procedures	Operations on the hemic & lymphatic system	<0.001	6.5
Procedures	Operations on the digestive system	<0.001	5.6
Procedures	Operations on the eye	<0.001	5.0
Procedures	Operations on the ear	<0.001	4.2
Procedures	Operations on the urinary system	<0.001	3.9
Procedures	Miscellaneous Diagnostic & therapeutic proc	<0.001	3.9
Procedures	Operations on the respiratory system	<0.001	3.7
Procedures	Operations on the female genital organs	<0.001	3.3
Procedures	Operations on the nose, mouth & pharynx	<0.001	2.7
Procedures	Operations on the male genital organs	<0.001	2.1
Procedures	Operations on the integumentary system	<0.001	1.9
Procedures	No Procedures	<0.001	1.2
Procedures	Obstetrical procedures		1
Hospital	NY-Albany	<0.001	6.3
Hospital	NH-DMHC	<0.001	3.2
Hospital	NCTY	<0.001	2.9
Hospital	GIFFORD	<0.001	2.8
Hospital	NE VT	<0.001	2.4
Hospital	FAHC	<0.001	2.1
Hospital	RUTLAND	<0.001	1.9
Hospital	MT. ASC	<0.001	1.9
Hospital	PORTER	<0.001	1.6
Hospital	CTRL VT	<0.001	1.5
Hospital	SW	<0.001	1.1
Hospital	BRAT	<0.001	0.7
Hospital	V.A.	<0.001	0.5
Hospital	GRACE	<0.001	0.0
Hospital	COPLEY	0.001	1.3
Hospital	SPRINGF	0.01	1.1
Hospital	NW		1
Payment Method	MEDICARE	<0.001	0.9
Payment Method	SELF PAY	<0.001	0.8
Payment Method	WORKERS COMP	<0.001	0.7
Payment Method	BLUE CROSS	0.05	1.0
Payment Method	OTHER GOVT	0.09	0.7
Payment Method	NO CHARGE	0.11	0.9
Payment Method	OTHER SOURCE	0.31	1.7
Payment Method	OTHER INSUR	0.38	1.0
Payment Method	MEDICAID	0.75	0.0
Payment Method	CHAMPUS	0.77	1.0
Payment Method	MISSING	0.85	0.8
Payment Method	HMO		1

Gender	Females		1
Gender	Males	<0.001	1.1
Age	<15		1
Age	15-44	<0.001	1.5
Age	45-64	<0.001	1.8
Age	65+	<0.001	1.5
Days in Hospital	5+	<0.001	52.6
Days in Hospital	2-4	<0.001	2.9
Days in Hospital	1		1
Discharge Status	DIED	<0.001	1.9
Discharge Status	OTHER FACILITY	<0.001	1.5
Discharge Status	HOME-OWN OR FAMILY	<0.001	0.6
Discharge Status	AGAINST ADVICE	<0.001	0.6
Discharge Status	I.C.F.	0.315	1.1
Discharge Status	HOME HEALTH SERVICE	0.607	1
Discharge Status	S.N.F.	0.651	1
Discharge Status	ANOTHER SHORT TERM		1
Charlson's Index	0		1
Charlson's Index	1	0.16	1
Charlson's Index	2	<0.001	1.1
Charlson's Index	3+	0.81	1

Complete Regression Analysis Results
Predictors of Hospital Charges (1997 - 2006 Combined)

DX as Multiple Response
Charlson Index Included
"High" Charge Defined as $10,000 or more

SORTED by Significance and Odds Ratio

		Significance	Odds Ratio
Days in Hospital	5+	<0.001	52.6
Procedures	Operations on the musculoskeletal system	<0.001	24.4
Procedures	Operations on the cardiovascular system	<0.001	16.7
Procedures	Operations on the endocrine system	<0.001	12.7
Number of procedures	5+	<0.001	11.7
Year	2006	<0.001	11.2
Year	2005	<0.001	8.8
Procedures	Operations on the nervous system	<0.001	6.9
Procedures	Operations on the hemic & lymphatic system	<0.001	6.5
Year	2004	<0.001	6.3
Hospital	NY-Albany	<0.001	6.3
Procedures	Operations on the digestive system	<0.001	5.6
Procedures	Operations on the eye	<0.001	5
Year	2003	<0.001	4.5
Procedures	Operations on the ear	<0.001	4.2
Procedures	Operations on the urinary system	<0.001	3.9
Procedures	Miscellaneous Diagnostic & therapeutic proc	<0.001	3.9
Procedures	Operations on the respiratory system	<0.001	3.7
Procedures	Operations on the female genital organs	<0.001	3.3
Year	2002	<0.001	3.2
Hospital	NH-DMHC	<0.001	3.2
Hospital	NCTY	<0.001	2.9
Days in Hospital	2-4	<0.001	2.9
Hospital	GIFFORD	<0.001	2.8
Procedures	Operations on the nose, mouth & pharynx	<0.001	2.7
Number of procedures	2-4	<0.001	2.4
Hospital	NE VT	<0.001	2.4
Year	2001	<0.001	2.3
Procedures	Operations on the male genital organs	<0.001	2.1
Hospital	FAHC	<0.001	2.1
Number of Diagnoses	10+	<0.001	2
Year	2000	<0.001	1.9
Procedures	Operations on the integumentary system	<0.001	1.9
Hospital	RUTLAND	<0.001	1.9
Hospital	MT. ASC	<0.001	1.9
Discharge Status	DIED	<0.001	1.9
Age	45-64	<0.001	1.8
Year	1999	<0.001	1.6
Hospital	PORTER	<0.001	1.6
Hospital	CTRL VT	<0.001	1.5
Age	15-44	<0.001	1.5

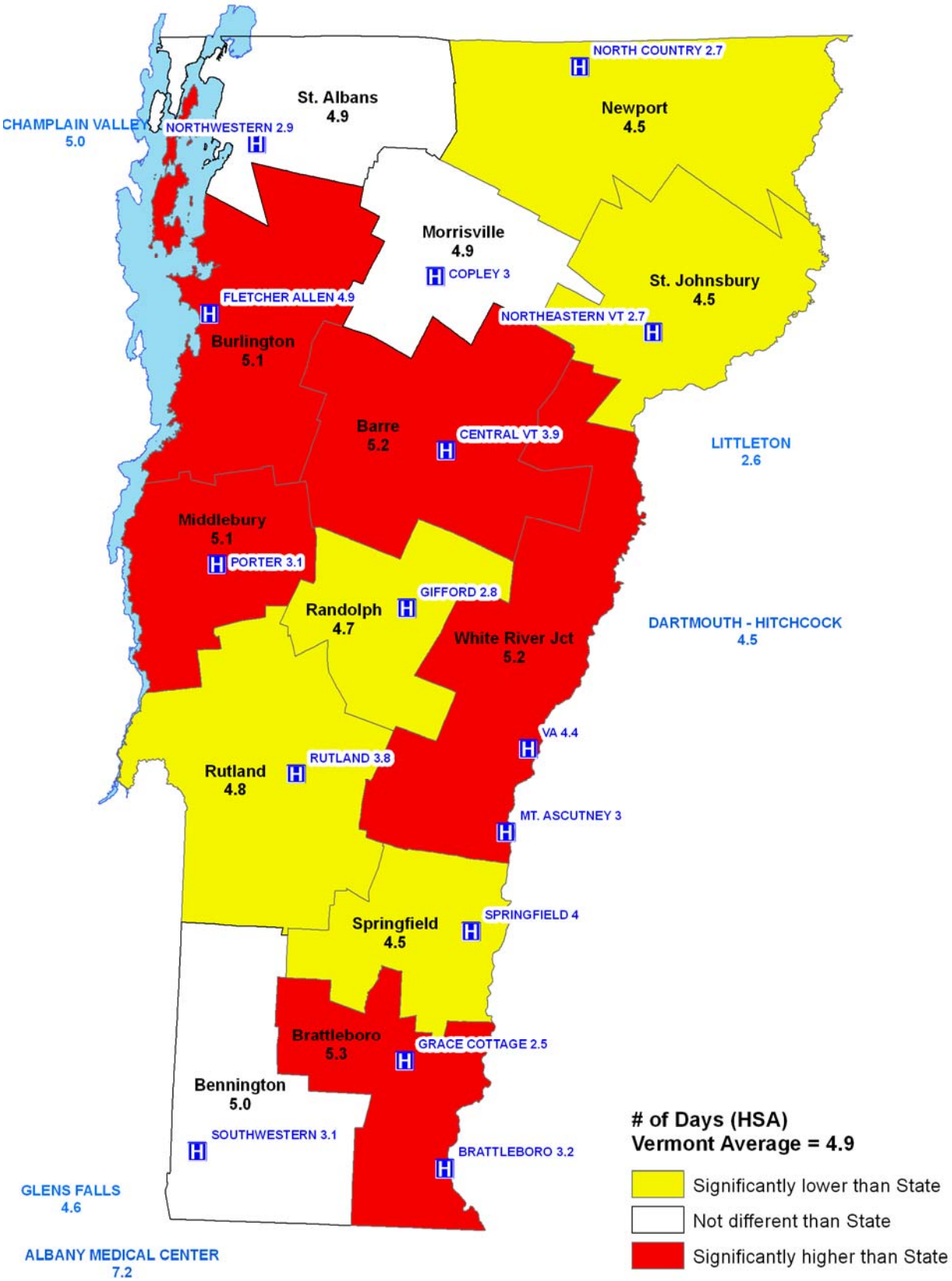
Age	65+	<0.001	1.5
Discharge Status	OTHER FACILITY	<0.001	1.5
Number of Diagnoses	5-9	<0.001	1.4
Diagnoses - Any Mention	NEOPLASM	<0.001	1.4
Diagnoses - Any Mention	TRAUMA	<0.001	1.4
Diagnoses - Any Mention	RESPIRATORY	<0.001	1.3
Diagnoses - Any Mention	LIVER & PANCREAS	<0.001	1.3
Diagnoses - Any Mention	MALE REPRODUCTIVE*	<0.001	1.3
Number of Diagnoses	2-4	<0.001	1.2
Year	1998	<0.001	1.2
Diagnoses - Any Mention	BRAIN AND C.N.S.	<0.001	1.2
Diagnoses - Any Mention	HEART & CIRCULATORY	<0.001	1.2
Procedures	No Procedures	<0.001	1.2
Diagnoses - Any Mention	FEMALE REPRODUCTIVE*	<0.001	1.1
Diagnoses - Any Mention	SPLEEN & BLOOD	<0.001	1.1
Hospital	SW	<0.001	1.1
Gender	Males	<0.001	1.1
Charlson's Index	2	<0.001	1.1
Diagnoses - Any Mention	DIGESTIVE	<0.001	0.9
Payment Method	MEDICARE	<0.001	0.9
Diagnoses - Any Mention	MENTAL ILLNESS	<0.001	0.8
Payment Method	SELF PAY	<0.001	0.8
Diagnoses - Any Mention	SKIN AND BREAST	<0.001	0.7
Hospital	BRAT	<0.001	0.7
Payment Method	WORKERS COMP	<0.001	0.7
Diagnoses - Any Mention	SUBSTANCE ABUSE	<0.001	0.6
Discharge Status	HOME-OWN OR FAMILY	<0.001	0.6
Discharge Status	AGAINST ADVICE	<0.001	0.6
Diagnoses - Any Mention	EYE	<0.001	0.5
Hospital	V.A.	<0.001	0.5
Diagnoses - Any Mention	NEONATAL	<0.001	0.4
Diagnoses - Any Mention	PREGNANCY & CHILDBIRTH*	<0.001	0.3
Hospital	GRACE	<0.001	0
Hospital	COPLEY	0.001	1.3
Number of Diagnoses	1	0.01	1.1
Hospital	SPRINGF	0.01	1.1
Diagnoses - Any Mention	MUSCULOSKELETAL	0.01	1
Diagnoses - Any Mention	ENDOCRINE	0.01	1
Payment Method	BLUE CROSS	0.05	1
Payment Method	OTHER GOVT	0.086	0.7
Payment Method	NO CHARGE	0.11	0.9
Diagnoses - Any Mention	ALL OTHER	0.14	1
Charlson's Index	1	0.16	1
Payment Method	OTHER SOURCE	0.305	1.7
Discharge Status	I.C.F.	0.315	1.1
Diagnoses - Any Mention	LYMPHATIC	0.35	1
Payment Method	OTHER INSUR	0.38	1
Diagnoses - Any Mention	EAR, NOSE & THROAT	0.54	1
Discharge Status	HOME HEALTH SERVICE	0.607	1
Discharge Status	S.N.F.	0.651	1

Diagnoses - Any Mention	KIDNEY & URINARY	0.67	1
Diagnoses - Any Mention	INFECTION	0.73	1
Payment Method	MEDICAID	0.75	0
Payment Method	CHAMPUS	0.77	1
Number of procedures	1	0.79	1
Charlson's Index	3+	0.81	1
Payment Method	MISSING	0.853	0.8
Diagnoses - Any Mention	INJURY AND POISONING	0.92	1
Number of procedures	0		1
Number of Diagnoses	0		1
Year	1997		1
Procedures	Obstetrical procedures		1
Hospital	NW		1
Payment Method	HMO		1
Gender	Females		1
Age	<15		1
Days in Hospital	1		1
Discharge Status	ANOTHER SHORT TERM		1
Charlson's Index	0		1

Analysis of Factors Contributing to High In-Patient Hospital Charges

1997 - 2006

Average Number of Days in Hospital Per Hospitalization By Hospital Service Area and Hospital



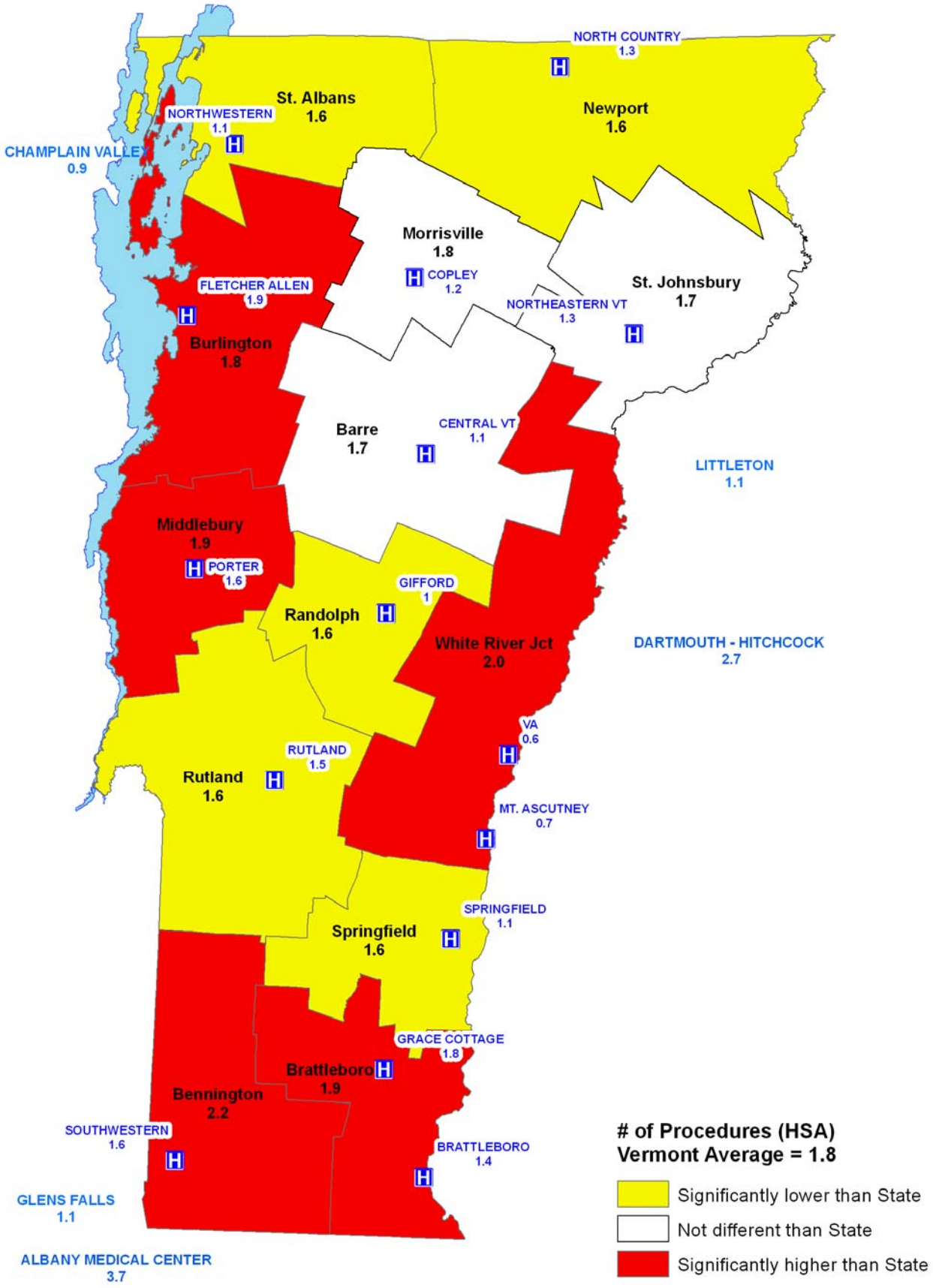
Note: Data Age and Severity Adjusted, 1997-2006 Combined

Number of Days in Hospital

# of Days Spent in Hospital	**Number of Hospitalizations**	**Percent of All Hospitalizations**
1	124020	20.5
2	144767	24.0
3	96724	16.0
4	62972	10.4
5	40802	6.8
6	29027	4.8
7	22381	3.7
8	16000	2.6
9	11508	1.9
10	8782	1.5
11	7031	1.2
12	5478	.9
13	4694	.8
14	4407	.7
15	3230	.5
16	2495	.4
17	2057	.3
18	1755	.3
19	1500	.2
20	1424	.2
21-30	7170	1.2
31-50	3661	.6
50+	1965	.3
Median # of Days	3	
Average # of Days	4.6	
Highest # of Days	255	

Note: Data 1997-2006 Combined

Average Number of Procedures Performed Per Hospitalization By Hospital Service Area and Hospital



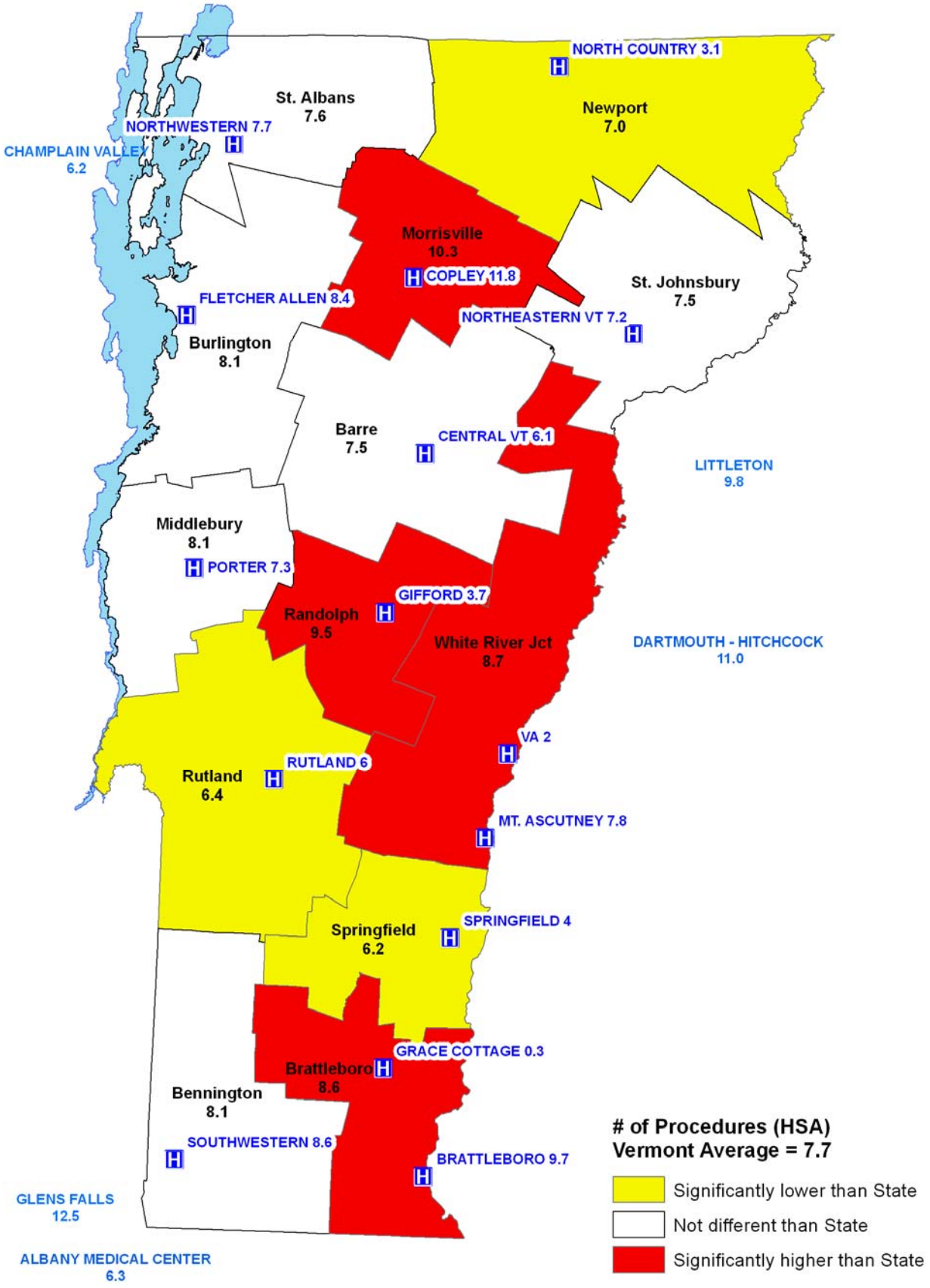
Note: Data Age and Severity Adjusted, 1997-2006 Combined

Number of Procedures Performed

# of Procedures Performed	**Number of Hospitalizations**	**Percent of All Hospitalizations**
.00	222459	36.8
1.00	157688	26.1
2.00	92661	15.3
3.00	55295	9.2
4.00	29442	4.9
5.00	17238	2.9
6.00	18040	3.0
7.00	3765	.6
8.00	2232	.4
9.00	1479	.2
10.00	1125	.2
11.00	815	.1
12.00	375	.1
13.00	298	.0
14.00	213	.0
15.00	297	.0
16.00	183	.0
17.00	59	.0
18.00	41	.0
19.00	26	.0
20.00	119	.0
Total	603850	100.0
Median # of Procedures Per Hospitalization		1
Average # of Procedures Per Hospitalization		1.5

Note: Data 1997-2006 Combined

Rate of Musculoskeletal Procedures Performed Per 100 Hospitalizations, By Hospital Service Area and Hospital



Note: Data Age and Severity Adjusted, 1997-2006 Combined

Musculoskeletal Procedures, 2001-2007*

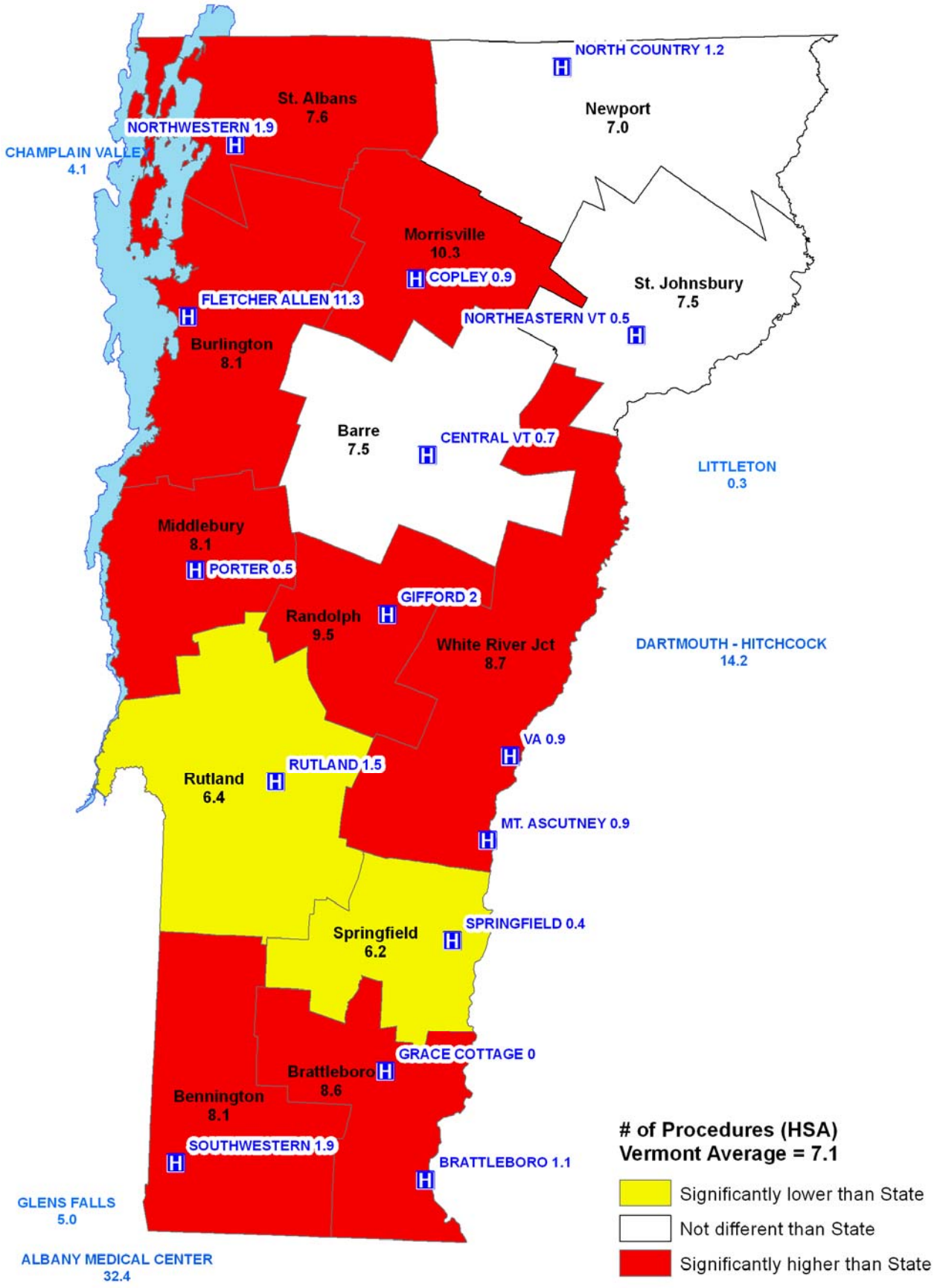
Type of Musculoskeletal Procedure	Number Performed Between 2001 -2007	Percent of Musculoskeletal Procedures
Arthroplasty knee	6526	22.7
Hip replacement, total & partial	5724	19.9
Treatment, fracture or disloc of hip & femur	3618	12.6
Spinal fusion	2352	8.2
Treatment, fracture or disloc of lower extremity	2145	7.5
Amputation of lower extremity	1259	4.4
Other therapeutic procedures on muscles & tendons	1163	4.0
Other OR therapeutic procedures on joints	1043	3.6
Other fracture & dislocation procedure	821	2.9
Arthroplasty other than hip or knee	680	2.4
Other OR therapeutic procedures on musc system	648	2.3
Partial excision bone	485	1.7
Treatment, fracture or disloc of radius & ulna	442	1.5
Arthrocentesis	423	1.5
Other OR therapeutic procedures on bone	419	1.5
Other diagnostic procedures on musculoskeletal system	358	1.2
Treatment, facial fracture or dislocation	182	.6
Other non-OR therapeutic procedures on musc system	163	.6
Injections & aspirations of muscles, tendons, etc.	113	.4
Division of joint capsule, ligament or cartilage	83	.3
Excision of semilunar cartilage of knee	45	.2
Arthroscopy	41	.1
Bunionectomy or repair of toe deformities	25	.1

** Details regarding type of specific Musculoskeletal procedure are only available for the years 2001 – 2007.*

Hospitalizations with MUSCULOSKELETAL as the Primary Procedure, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	1,994	5.1	62	$13,891	1.6	3.6	$2,724
Central Vermont	2,564	4.7	67	$17,946	2.0	5.7	$3,818
Copley Hospital	1,450	5.1	62	$23,074	2.7	4.6	$4,524
Fletcher Allen Health Care	13,982	5.8	56	$21,447	2.5	5.0	$3,698
Gifford Memorial Hospital	446	4.6	69	$21,256	1.9	5.5	$4,621
Grace Cottage	4	2.5	54	$2,795	2.0	4.3	$1,118
MT. Ascutney	393	4.5	71	$22,802	1.7	6.1	$5,067
North Country Hospital	701	4.4	69	$16,920	1.9	9.5	$3,845
Northeastern Vermont Regional Hospital	1,308	4.8	65	$19,818	1.9	5.8	$4,129
Northwestern Medical Center	1,915	4.2	66	$14,848	1.7	5.2	$3,535
Porter Hospital	1,064	5.4	67	$24,169	2.6	4.8	$4,476
Rutland Regional Medical Center	4,461	5.5	65	$22,048	2.3	5.5	$4,009
Southwestern Medical Center	2,675	4.3	65	$17,065	2.2	5.2	$3,969
Springfield Hospital	1,126	4.3	68	$21,926	1.4	6.3	$5,099
Veteran's Administration Center	530	10.0	68	n/a	1.6	4.7	n/a
NH-Dartmouth Hitchcock Hospital	7,260	5.3	57	$23,392	2.3	6.5	$4,414
NY-Albany Medical Center	152	15.9	49	$67,431	5.2	7.2	$4,241
Vermont Total	**42,025**	**5.3**	**61**	**$20,792**	**2.3**	**5.4**	**$3,923**

Hospitalizations with MUSCULOSKELETAL as the Primary Procedure, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	4,420	5.2	61	$21,488	2.3	5.6	$4,132
Bennington	3,766	4.7	62	$19,764	2.2	5.1	$4,205
Brattleboro	2,549	5.2	60	$17,207	1.9	4.2	$3,309
Burlington	10,215	5.5	58	$20,294	2.3	4.9	$3,690
Middlebury	2,024	5.6	59	$23,668	2.6	4.9	$4,226
Morrisville	2,003	5.5	58	$22,869	2.6	4.9	$4,158
Newport	2,047	5.2	61	$21,801	2.3	6.9	$4,193
Randolph	1,074	4.9	59	$22,828	2.2	5.6	$4,659
Rutland	5,473	6.1	62	$24,391	2.4	5.7	$3,999
Springfield	2,495	4.9	62	$22,927	1.9	6.0	$4,679
St. Albans	3,050	4.8	60	$18,549	2.2	5.2	$3,864
St. Johnsbury	2,157	5.4	61	$22,878	2.1	5.9	$4,237
White River Jct.	3,833	4.8	60	$20,869	2.0	5.9	$4,348
Vermont Total	**45,106**	**5.3**	**60**	**$21,284**	**2.2**	**5.4**	**$4,016**

Rate of Cardiovascular Procedures Performed Per 100 Hospitalizations By Hospital Service Area and Hospital



Note: Data Age and Severity Adjusted, 1997-2006 Combined

Cardiovascular Procedures, 2001-2007*

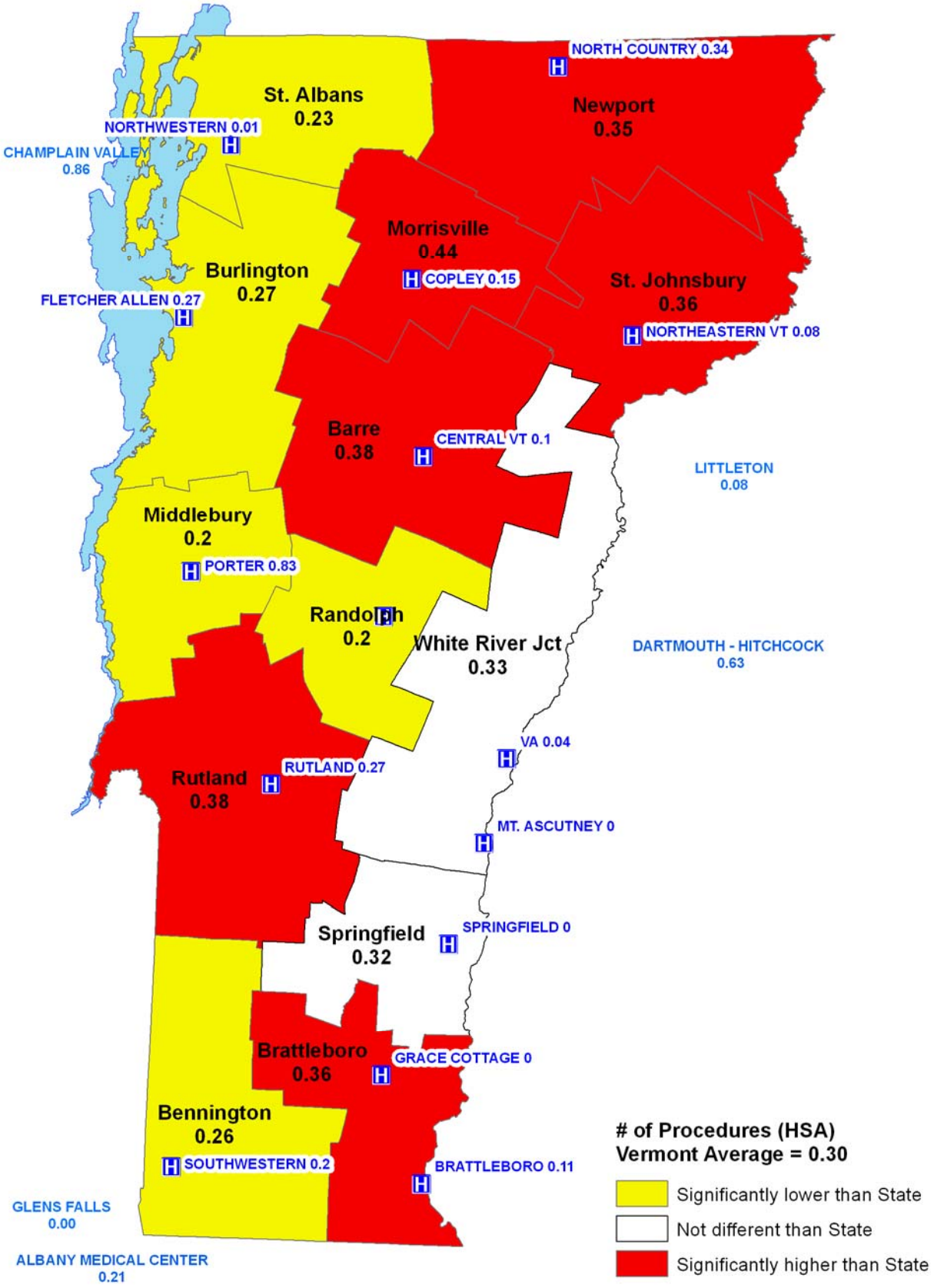
Type of Cardiovascular Procedure	Number Performed Between 2001 -2007	Percent of Cardiovascular Procedures
Percutaneous transluminal coronary angioplasty (PTCA)	8578	26.7
Diagnostic cardiac catheterization, coronary arteriography	4825	15.0
Other vascular catheterization, not heart	2894	9.0
Coronary artery bypass graft (CABG)	2849	8.9
Insert, revis, replacet, rem pacemaker or cardioverter/defib	2772	8.6
Other OR procedures on vessels other than head & neck	1833	5.7
Hemodialysis	1783	5.5
Heart valve procedures	1234	3.8
Endarterectomy, vessel of head & neck	1152	3.6
Peripheral vascular bypass	978	3.0
Other OR heart procedures	931	2.9
Aortic resection, replacement or anastomosis	725	2.3
Other non-OR therapeutic cardiovascular procedures	538	1.7
Other diagnostic cardiovascular procedures	305	.9
Embolectomy & endarterectomy of lower limbs	258	.8
Other OR procedures on vessels of head & neck	244	.8
Creat, revis, rem of arteriov fistula or cannula for dialys	136	.4
Other vascular bypass & shunt, not heart	108	.3
Varicose vein stripping, lower limb	15	.0
Extracorporeal circ auxiliary to open heart procedures	13	.0

** Details regarding type of specific Cardiovascular procedure are only available for the years 2001 – 2007.*

Hospitalizations with CARDIOVASCULAR SYSTEM as the Primary Procedure, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	235	7.1	71	$17,388	2.8	5.5	$2,449
Central Vermont	377	4.8	71	$18,180	2.4	6.7	$3,788
Copley Hospital	51	6.2	59	$13,791	2.6	6.5	$2,224
Fletcher Allen Health Care	26,703	5.6	63	$23,922	4.0	7.6	$4,272
Gifford Memorial Hospital	295	3.6	69	$7,419	1.8	6.3	$2,061
Grace Cottage	0	--	--	--	--	--	--
MT. Ascutney	30	5.9	68	$16,459	1.5	8.5	$2,790
North Country Hospital	287	3.3	67	$14,396	1.6	8.5	$4,362
Northeastern Vermont Regional Hospital	151	5.8	67	$23,225	2.5	8.2	$4,004
Northwestern Medical Center	250	6.3	63	$11,602	1.6	6.2	$1,842
Porter Hospital	78	8.2	65	$18,292	3.1	6.9	$2,231
Rutland Regional Medical Center	1,520	5.8	70	$20,350	2.5	7.1	$3,509
Southwestern Medical Center	1,030	5.4	68	$16,693	3.2	6.2	$3,091
Springfield Hospital	189	6.7	69	$18,146	1.7	7.9	$2,708
Veteran's Administration Center	302	8.6	68	n/a	2.5	4.5	n/a
NH-Dartmouth Hitchcock Hospital	16,444	5.2	65	$27,448	3.9	8.2	$5,278
NY-Albany Medical Center	1,463	6.9	62	$43,478	6.4	7.9	$6,301
Vermont Total	**49,405**	**5.5**	**64**	**$24,978**	**3.9**	**7.7**	**$4,541**

Hospitalizations with CARDIOVASCULAR SYSTEM as the Primary Procedure, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	4,975	5.4	64	$26,835	3.9	7.7	$4,969
Bennington	3,801	6.0	64	$31,604	4.7	7.2	$5,267
Brattleboro	2,048	6.1	63	$29,553	3.8	7.7	$4,845
Burlington	13,464	5.8	63	$24,310	3.9	7.5	$4,191
Middlebury	2,485	5.5	63	$24,266	4.0	7.4	$4,412
Morrisville	2,152	5.0	64	$24,033	3.9	7.5	$4,807
Newport	2,368	5.3	64	$25,972	3.8	8.2	$4,900
Randolph	1,451	4.9	66	$24,008	3.6	7.7	$4,900
Rutland	5,980	5.8	64	$25,629	3.7	7.6	$4,419
Springfield	2,832	5.5	65	$27,219	3.8	8.1	$4,949
St. Albans	4,156	5.7	62	$24,536	3.8	7.5	$4,305
St. Johnsbury	2,164	5.4	64	$28,755	3.8	8.2	$5,325
White River Jct.	4,299	5.6	64	$27,203	3.7	8.2	$4,858
Vermont Total	**52,175**	**5.6**	**64**	**$ 26,091**	**3.9**	**7.7**	**$4,659**

Rate of Endocrine Procedures Performed Per 100 Hospitalizations By Hospital Service Area and Hospital



Note: Data Age and Severity Adjusted, 1997-2006 Combined

Endocrine Procedures, 2001-2007*

Type of Endocrine Procedure	**Number Performed Between 2001 -2007**	**Percent of Endocrine Procedures**
Thyroidectomy, partial or complete	229	49.0
Diagnostic endocrine procedures	21	4.5
Other therapeutic endocrine procedures	217	46.5

** Details regarding type of specific Endocrine procedure are only available for the years 2001 – 2007.*

Hospitalizations with ENDOCRINE SYSTEM as the Primary Procedure, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	17	3.7	53	$9,620	1.2	2.8	$2,600
Central Vermont	16	1.4	44	$7,922	1.3	2.4	$5,659
Copley Hospital	8	1.8	55	$9,953	1.8	3.5	$5,529
Fletcher Allen Health Care	297	4.1	50	$14,629	2.0	4.1	$3,568
Gifford Memorial Hospital	3	1.3	54	$15,123	1.3	3.3	$11,633
Grace Cottage	0	--	--	--	--	--	--
MT. Ascutney	0	--	--	--	--	--	--
North Country Hospital	14	1.4	53	$14,471	1.3	5.6	$10,336
Northeastern Vermont Regional Hospital	6	2.0	50	$15,444	1.3	3.0	$7,722
Northwestern Medical Center	3	4.3	65	$12,486	2.0	4.3	$2,904
Porter Hospital	26	1.5	58	$13,413	1.9	1.9	$8,942
Rutland Regional Medical Center	46	3.2	49	$14,019	2.6	3.7	$4,381
Southwestern Medical Center	41	3.0	55	$9,441	1.8	3.5	$3,147
Springfield Hospital	1	2.0	71	$9,342	1.0	2.0	$4,671
Veteran's Administration Center	9	4.4	61	n/a	1.0	3.3	n/a
NH-Dartmouth Hitchcock Hospital	333	2.5	50	$11,640	1.6	5.4	$4,656
NY-Albany Medical Center	7	3.6	59	$15,075	3.0	5.6	$4,188
Vermont Total	**827**	**3.1**	**51**	**$12,654**	**1.8**	**4.5**	**$4,082**

Hospitalizations with ENDOCRINE SYSTEM as the Primary Procedure, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	113	2.5	49	$11,618	1.6	4.2	$4,647
Bennington	83	3.5	54	$11,763	1.9	4.1	$3,361
Brattleboro	66	3.7	50	$16,080	2.0	4.6	$4,346
Burlington	186	3.9	49	$15,849	1.9	3.9	$4,064
Middlebury	42	2.4	59	$12,068	2.0	2.8	$5,028
Morrisville	35	3.1	50	$11,985	1.9	4.2	$3,866
Newport	55	3.0	50	$16,413	2.0	5.3	$5,471
Randolph	16	2.4	47	$13,187	1.8	4.4	$5,495
Rutland	113	2.4	49	$13,422	1.9	4.4	$5,593
Springfield	50	2.3	53	$10,595	1.7	5.1	$4,607
St. Albans	49	5.6	50	$16,185	1.8	4.1	$2,890
St. Johnsbury	44	3.6	50	$16,704	1.6	5.3	$4,640
White River Jct.	82	2.2	49	$10,905	1.6	5.2	$4,957
Vermont Total	**934**	**3.2**	**50**	**$13,712**	**1.8**	**4.4**	**$4,285**

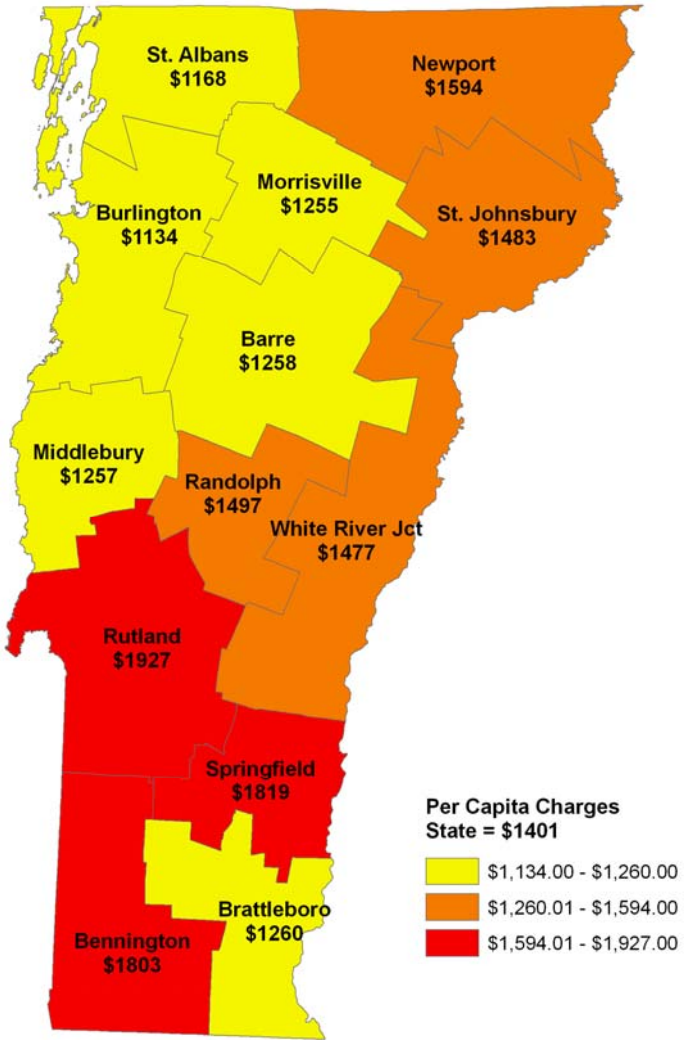
Overview of Hospitalizations 1997 - 2006

Average Number of Diagnoses and Procedures per Hospitalization by Year

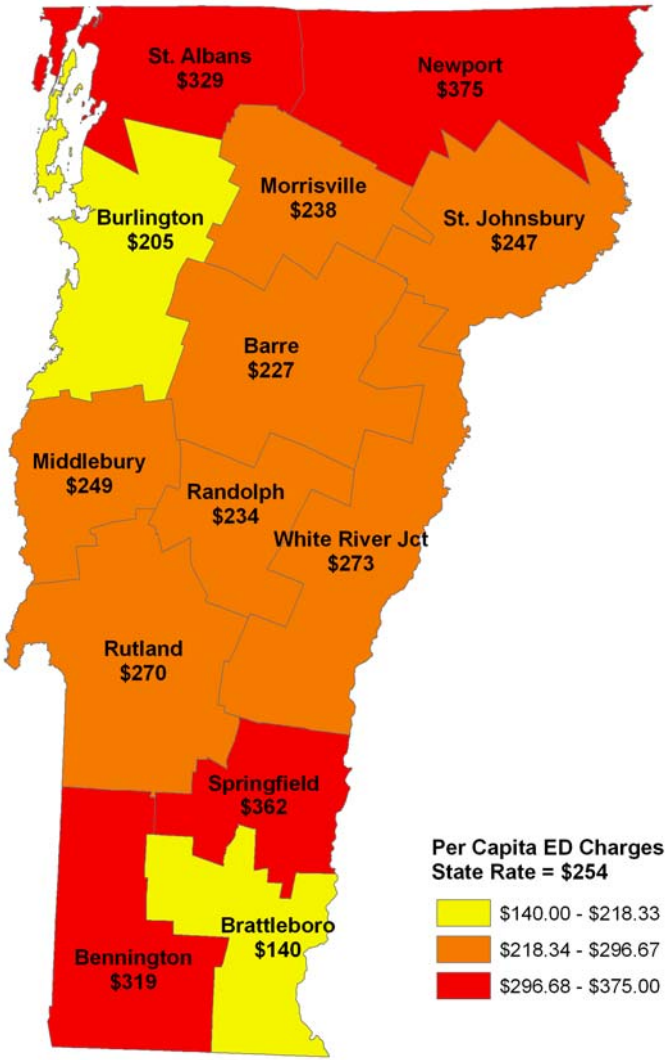
	# of Diagnoses	# of Procedures
Year		
1997*	4.9	1.5
1998	4.8	1.4
1999	4.9	1.4
2000	5.2	1.4
2001	5.4	1.5
2002	5.6	1.6
2003	6.0	1.6
2004	6.1	1.6
2005	6.4	1.6
2006	6.7	1.7

* 10 Diagnoses and Procedure Fields only

All Charges – Per Capita, by Hospital Service Area

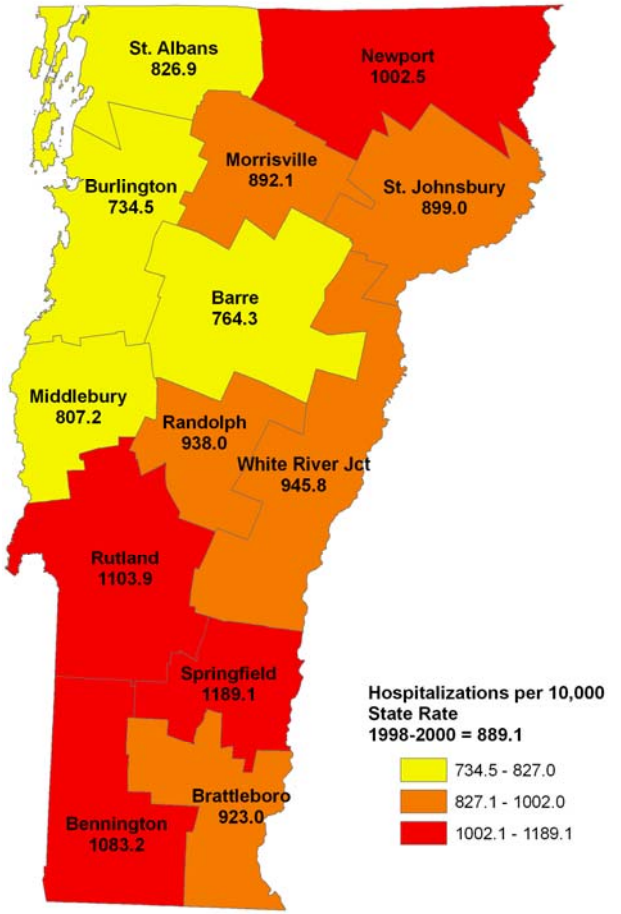


Hospitalization Charges, 2004-2006

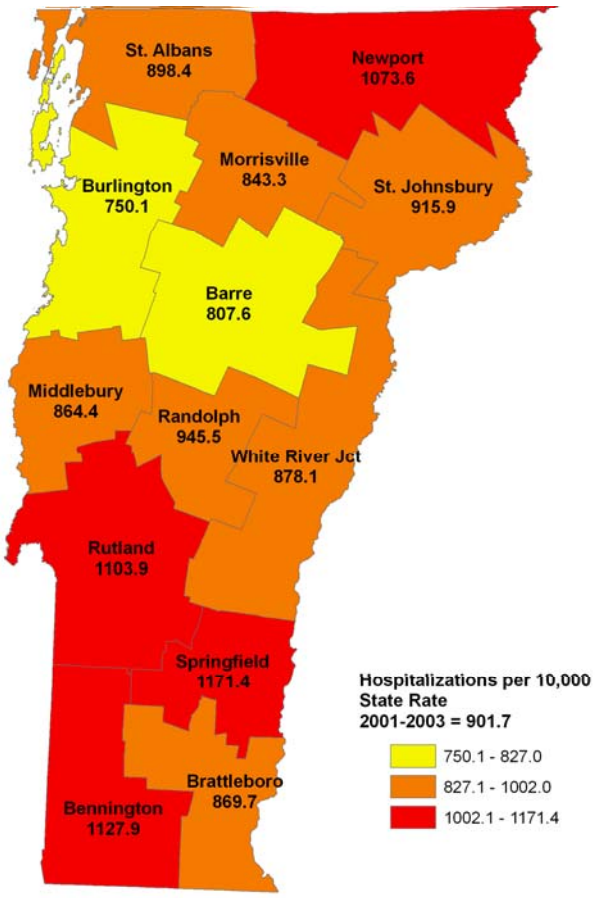


ED Visit Charges, 2004-2006

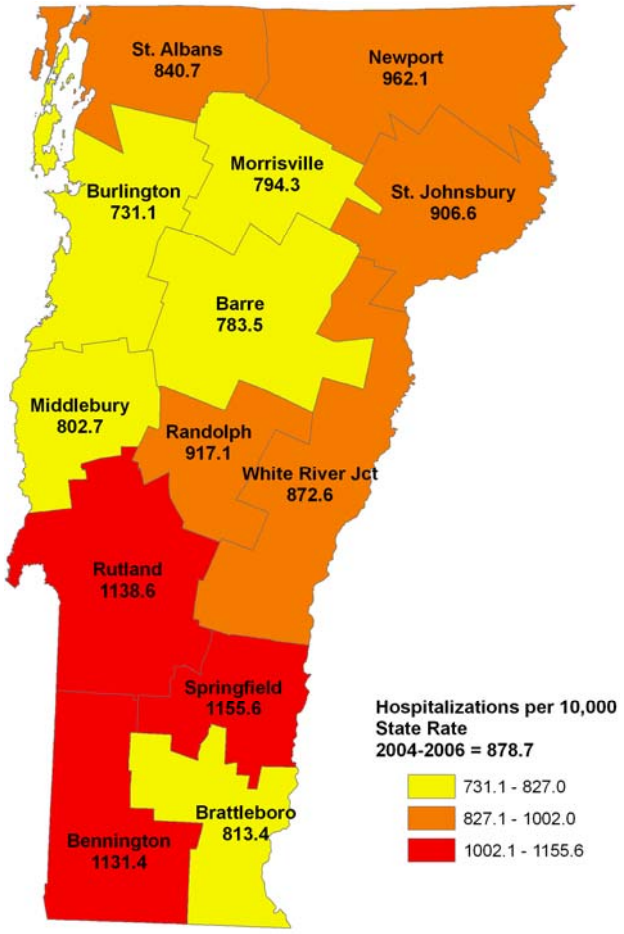
Total Hospitalization Rates by Hospital Service Area



1998-2000

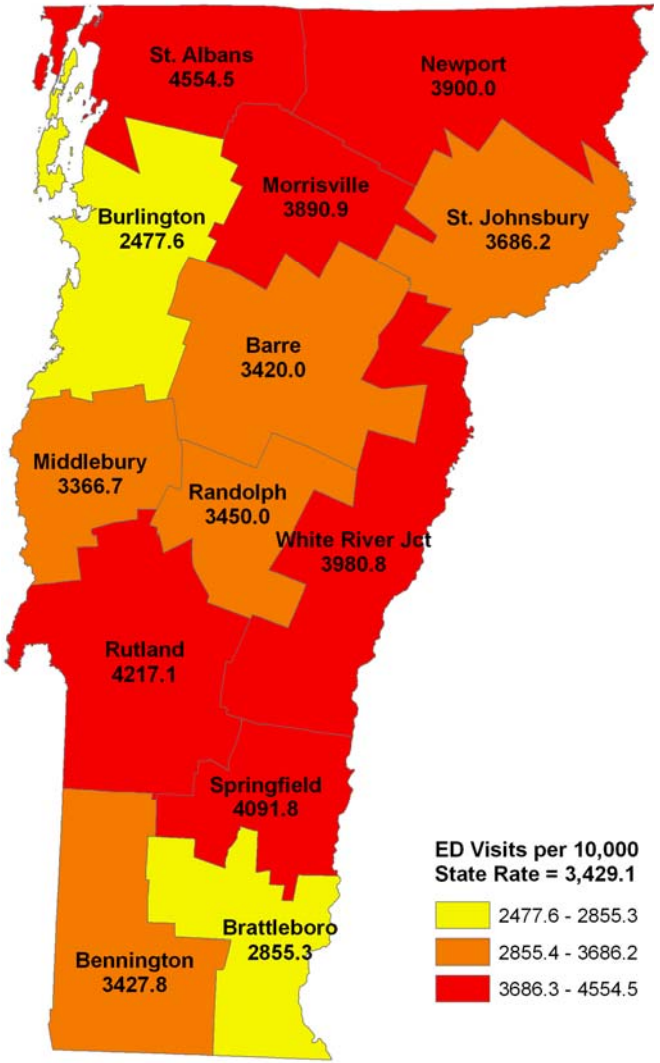


2001-2003



2004-2006

Overall ED Visit Rates by Hospital Service Area, 2004-2006



All Hospitalizations, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Average Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	20,421	4.1	49	$7,047	1.3	3.9	$1,719
Central Vermont	37,802	4.2	49	$8,100	1.2	5.4	$1,929
Copley Hospital	15,768	3.4	47	$7,391	1.1	4.3	$2,174
Fletcher Allen Health Care	185,342	5.3	46	$13,203	1.8	5.5	$2,491
Gifford Memorial Hospital	12,621	3.0	44	$6,752	0.8	4.7	$2,251
Grace Cottage	2,031	2.9	67	$3,288	2.2	6.3	$1,134
MT. Ascutney	3,584	4.0	70	$8,983	0.6	6.4	$2,246
North Country Hospital	18,763	3.0	51	$7,766	1.0	8.2	$2,589
Northeastern Vermont Regional Hospital	17,341	3.1	45	$7,520	1.2	5.2	$2,426
Northwestern Medical Center	26,704	3.3	47	$6,088	0.9	4.3	$1,845
Porter Hospital	15,478	3.6	49	$8,492	1.5	4.7	$2,359
Rutland Regional Medical Center	65,021	4.6	53	$9,653	1.1	5.9	$2,099
Southwestern Medical Center	35,599	3.8	55	$8,325	1.6	5.0	$2,191
Springfield Hospital	24,005	4.2	50	$7,519	1.1	6.0	$1,790
Veteran's Administration Center	14,081	6.0	65	n/a	0.5	4.9	n/a
NH-Dartmouth Hitchcock Hospital	71,211	5.0	51	$18,719	2.2	7.0	$3,744
NY-Albany Medical Center	3,016	7.9	49	$37,138	4.7	6.9	$4,701
Vermont Total	**568,788**	**4.6**	**50**	**$11,164**	**1.5**	**5.6**	**$2,452**

All Hospitalizations, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	58,076	4.6	48	$11715	1.6	5.6	$2,547
Bennington	49,397	4.4	53	$11,622	1.9	5.2	$2,641
Brattleboro	31,170	4.8	51	$10,689	1.6	4.9	$2,227
Burlington	138,232	4.8	45	$11,546	1.6	5.2	$2,405
Middlebury	25,608	4.8	49	$12,156	1.8	5.2	$2,532
Morrisville	24,169	4.4	48	$11,182	1.6	5.0	$2,541
Newport	30,458	4.0	50	$11,420	1.4	7.3	$2,855
Randolph	14,840	4.4	52	$11,893	1.4	5.8	$2,703
Rutland	77,830	4.9	53	$12,042	1.4	6.0	$2,458
Springfield	36,620	4.4	53	$11,631	1.3	6.2	$2,643
St. Albans	41,709	4.5	48	$10,652	1.4	5.0	$2,367
St. Johnsbury	27,402	4.1	48	$11,678	1.5	5.7	$2,848
White River Jct.	48,339	4.3	50	$11,951	1.4	6.1	$2,779
Vermont Total	**603,850**	**4.6**	**49**	**$11,583**	**1.5**	**5.6**	**$2,530**

Severity Score (Charleson Index) 1997-2006, By Hospital	Severity Score 0	Severity Score 1	Severity Score 2	Severity Score 3+	Average Severity Score
Brattleboro Memorial Hospital	62%	18%	10%	10%	0.8
Central Vermont	55%	20%	12%	13%	1.0
Copley Hospital	62%	17%	11%	10%	0.8
Fletcher Allen Health Care	58%	16%	12%	14%	1.1
Gifford Memorial Hospital	65%	15%	10%	10%	0.8
Grace Cottage	32%	25%	20%	23%	1.7
MT. Ascutney	36%	29%	18%	17%	1.4
North Country Hospital	45%	21%	15%	19%	1.3
Northeastern Vermont Regional Hospital	58%	18%	11%	13%	1.0
Northwestern Medical Center	60%	17%	12%	12%	0.9
Porter Hospital	57%	17%	14%	12%	1.0
Rutland Regional Medical Center	52%	21%	13%	14%	1.1
Southwestern Medical Center	49%	23%	14%	14%	1.2
Springfield Hospital	55%	20%	12%	13%	1.0
Veteran's Administration Center	39%	24%	19%	18%	1.5
NH-Dartmouth Hitchcock Hospital	42%	19%	17%	22%	1.6
NY-Albany Medical Center	43%	23%	16%	18%	1.3
Vermont Total	**54%**	**19%**	**13%**	**14%**	**1.1**

Severity Score (Charleson Index) 1997-2006 By Hospital Service Area	Severity Score 0	Severity Score 1	Severity Score 2	Severity Score 3+	Average Severity Score
Barre	54%	19%	13%	14%	1.1
Bennington	50%	22%	14%	14%	1.0
Brattleboro	56%	18%	13%	13%	1.0
Burlington	61%	16%	11%	12%	1.2
Middlebury	55%	18%	14%	14%	1.3
Morrisville	57%	18%	12%	13%	1.2
Newport	47%	20%	15%	18%	1.1
Randolph	52%	19%	15%	15%	1.1
Rutland	50%	21%	14%	15%	1.2
St. Albans	55%	18%	13%	14%	1.3
St. Johnsbury	52%	19%	13%	16%	1.2
Springfield	48%	20%	14%	17%	1.2
White River Jct.	52%	19%	13%	16%	1.1
Vermont Total	**54%**	**19%**	**13%**	**14%**	**1.1**

Defining the Charlson Index

- The Charlson co-morbidity index predicts the 1 year mortality for a patient who may have a range of co-morbid conditions such as heart disease, AIDS or cancer (a total of 22 conditions). These are defined using ICD-9-CM codes

- Each condition is assigned a score depending on the risk of dying associated with this condition. Then the scores are summed up and given a total score which predicts mortality. The higher the score, the more severe the burden of co-morbidity.

- The original citation is as follows: Charlson ME, Pompei P, Ales KL, MacKenzie CR (1987). A new method of classifying prognostic co-morbidity in longitudinal studies: development and validation. J Chron Dis, 40(5): 373-383.

Procedure Data
1997 - 2006

Average Number of Procedures per Hospitalization by Year and Hospital

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Brattleboro Memorial Hospital	1.3	0.8	0.9	0.9	1.4	1.4	1.7	1.5	1.3	1.5
Central Vermont	1.0	1.0	1.1	1.0	1.0	1.3	1.5	1.3	1.3	1.4
Copley Hospital	1.6	1.0	1.1	1.0	1.0	1.1	1.1	1.1	1.1	1.2
Fletcher Allen Health Care	1.6	1.6	1.6	1.7	1.9	1.9	1.9	2.0	2.1	2.2
Gifford Memorial Hospital	0.7	0.8	0.8	0.9	1.0	1.1	0.7	0.8	0.8	0.7
Grace Cottage	1.6	1.9	2.2	2.1	2.1	2.3	2.7	2.2	2.6	2.9
MT. Ascutney	0.6	0.5	0.5	0.5	0.5	0.4	0.7	0.9	0.9	0.7
North Country Hospital	0.9	0.9	0.9	0.9	0.8	1.0	1.0	1.1	1.0	1.1
Northeastern Vermont Regional Hospital	1.9	2.0	2.1	1.3	0.8	0.8	0.8	0.8	0.7	0.7
Northwestern Medical Center	0.8	0.8	0.8	0.8	0.8	1.0	1.1	0.9	1.0	0.9
Porter Hospital	2.2	1.8	1.8	1.6	1.9	2.0	1.1	1.0	0.9	0.8
Rutland Regional Medical Center	1.7	1.4	0.9	0.9	1.0	1.0	1.0	0.9	1.0	1.0
Southwestern Medical Center	1.5	1.5	1.5	1.5	1.6	1.6	1.7	1.7	1.8	1.7
Springfield Hospital	1.0	1.0	1.2	1.1	1.1	1.4	1.1	1.0	0.9	1.0
Veteran's Administration Center	0.4	0.7	0.8	0.8	0.9	0.3	0.3	0.3	0.3	0.4
NH-Dartmouth Hitchcock Hospital	1.9	1.9	2.0	2.1	2.3	2.4	2.4	2.4	2.5	2.6
NY-Albany Medical Center	4.6	4.8	4.6	4.4	4.6	4.9	4.7	4.7	4.8	4.5
Vermont Total	**1.5**	**1.4**	**1.4**	**1.4**	**1.5**	**1.6**	**1.6**	**1.6**	**1.6**	**1.7**

Average Number of Procedures per Hospitalization by Year and HSA

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Barre	1.3	1.3	1.4	1.4	1.4	1.6	1.8	1.7	1.7	1.9
Bennington	1.7	1.6	1.7	1.7	1.7	1.8	1.9	1.9	2.0	2.0
Brattleboro	1.5	1.2	1.3	1.4	1.7	1.7	1.9	1.8	1.7	1.8
Burlington	1.4	1.4	1.4	1.4	1.8	1.6	1.6	1.7	1.8	1.8
Middlebury	2.0	1.8	1.8	1.7	1.9	2.0	1.6	1.6	1.5	1.6
Morrisville	1.7	1.4	1.5	1.4	1.5	1.6	1.6	1.6	1.6	1.8
Newport	1.2	1.3	1.3	1.3	1.2	1.4	1.4	1.4	1.4	1.6
Randolph	1.2	1.3	1.2	1.3	1.5	1.5	1.3	1.2	1.3	1.5
Rutland	1.8	1.6	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.4
St. Albans	1.2	1.2	1.3	1.2	1.4	1.5	1.5	1.5	1.5	1.6
St. Johnsbury	1.9	2.0	2.0	1.6	1.3	1.3	1.3	1.3	1.3	1.5
Springfield	1.2	1.2	1.2	1.2	1.2	1.5	1.4	1.4	1.4	1.5
White River Jct.	1.3	1.3	1.4	1.5	1.6	1.5	1.5	1.6	1.7	1.7
Vermont Total	**1.5**	**1.4**	**1.4**	**1.4**	**1.5**	**1.6**	**1.6**	**1.6**	**1.6**	**1.7**

Average Number of Procedures per Hospitalization by Year and Insurer

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
BLUE CROSS	1.6	1.5	1.5	1.6	1.7	1.7	1.7	1.7	1.8	1.8
HMO	N/A	1.6	1.6	1.5	1.7	1.8	1.8	1.8	1.9	1.9
MEDICARE	1.5	1.4	1.4	1.4	1.6	1.6	1.6	1.6	1.6	1.7
MEDICAID	1.2	1.3	1.3	1.2	1.3	1.4	1.3	1.4	1.4	1.4
SELF PAY	1.4	1.0	0.9	0.9	1.1	1.2	1.2	1.1	1.2	1.4
WORKERS COMP	1.9	1.9	2.0	2.0	2.0	2.1	2.1	2.3	2.3	2.5
OTHER INSUR	1.5	1.5	1.5	1.5	1.7	1.7	1.7	1.7	1.8	1.9
OTHER GOVT	1.5	0.8	0.8	0.9	1.0	0.5	0.7	0.7	0.7	1.4
Vermont Total	**1.5**	**1.4**	**1.4**	**1.4**	**1.5**	**1.6**	**1.6**	**1.6**	**1.6**	**1.7**

Average Number of Procedures per Hospitalization by Year and Age

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Younger than 15	0.7	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.8
15-44	1.6	1.7	1.7	1.6	1.7	1.8	1.8	1.8	1.8	1.9
45-64	1.7	1.6	1.7	1.7	1.8	1.8	1.9	1.9	1.9	2.1
65+	1.5	1.4	1.4	1.4	1.5	1.5	1.6	1.6	1.6	1.7
Vermont Total	**1.5**	**1.4**	**1.4**	**1.4**	**1.5**	**1.6**	**1.6**	**1.6**	**1.6**	**1.7**

Procedure-Specific Data By Hospital

Hospitalizations with NO PROCEDURES LISTED as the Primary Procedure By Hospital, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	1,872	3.4	39	$3,506	0	3.4	$1,031
Central Vermont	4,568	4.2	51	$5,521	0	5.5	$1,315
Copley Hospital	1,771	3.2	47	$4,211	0	4.3	$1,316
Fletcher Allen Health Care	12,535	4.6	43	$5,756	0	4.8	$1,251
Gifford Memorial Hospital	1,245	2.9	42	$4,265	0	4.5	$1,471
Grace Cottage	467	2.2	51	$1,757	0	4.6	$799
MT. Ascutney	647	3.7	72	$5,550	0	6.6	$1,500
North Country Hospital	2,733	2.7	56	$5,809	0	9.0	$2,151
Northeastern Vermont Regional Hospital	2,115	2.7	43	$4,915	0	5.4	$1,820
Northwestern Medical Center	116	3.3	54	$4,800	0	4.8	$1,455
Porter Hospital	2,055	3.1	47	$5,214	0	4.6	$1,682
Rutland Regional Medical Center	7,864	4.2	54	$5,961	0	6.5	$1,419
Southwestern Medical Center	5,493	2.9	51	$4,289	0	4.3	$1,479
Springfield Hospital	2,750	3.1	57	$5,692	0	6.3	$1,836
Veteran's Administration Center	1,593	5.1	65	n/a	0	5.0	n/a
NH-Dartmouth Hitchcock Hospital	4,757	3.3	46	$6,109	0	6.7	$1,851
NY-Albany Medical Center	81	3.1	28	$7,854	0	4.5	$2,534
Vermont Total	**208,280**	**3.9**	**49**	**$5,407**	**0**	**5.5**	**$1,386**

Hospitalizations with CARDIOVASCULAR SYSTEM as the Primary Procedure By Hospital, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	235	7.1	71	$17,388	2.8	5.5	$2,449
Central Vermont	377	4.8	71	$18,180	2.4	6.7	$3,788
Copley Hospital	51	6.2	59	$13,791	2.6	6.5	$2,224
Fletcher Allen Health Care	26,703	5.6	63	$23,922	4.0	7.6	$4,272
Gifford Memorial Hospital	295	3.6	69	$7,419	1.8	6.3	$2,061
Grace Cottage	0	--	--	--	--	--	--
MT. Ascutney	30	5.9	68	$16,459	1.5	8.5	$2,790
North Country Hospital	287	3.3	67	$14,396	1.6	8.5	$4,362
Northeastern Vermont Regional Hospital	151	5.8	67	$23,225	2.5	8.2	$4,004
Northwestern Medical Center	250	6.3	63	$11,602	1.6	6.2	$1,842
Porter Hospital	78	8.2	65	$18,292	3.1	6.9	$2,231
Rutland Regional Medical Center	1,520	5.8	70	$20,350	2.5	7.1	$3,509
Southwestern Medical Center	1,030	5.4	68	$16,693	3.2	6.2	$3,091
Springfield Hospital	189	6.7	69	$18,146	1.7	7.9	$2,708
Veteran's Administration Center	302	8.6	68	n/a	2.5	4.5	n/a
NH-Dartmouth Hitchcock Hospital	16,444	5.2	65	$27,448	3.9	8.2	$5,278
NY-Albany Medical Center	1,463	6.9	62	$43,478	6.4	7.9	$6,301
Vermont Total	**49,405**	**5.5**	**64**	**$24,978**	**3.9**	**7.7**	**$4,541**

Hospitalizations with DIGESTIVE SYSTEM as the Primary Procedure By Hospital, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	1,929	5.8	58	$11,635	2.1	4.0	$2,006
Central Vermont	3,148	6.0	59	$14,709	2.4	6.2	$2,452
Copley Hospital	1,190	4.9	57	$12,645	2.5	4.8	$2,581
Fletcher Allen Health Care	14,610	7.1	52	$18,000	2.7	5.9	$2,535
Gifford Memorial Hospital	693	4.8	56	$16,789	2.1	5.0	$3,498
Grace Cottage	6	3.0	73	$3,058	2.5	7.2	$1,019
MT. Ascutney	363	5.3	61	$14,391	2.0	5.8	$2,715
North Country Hospital	1,573	4.6	60	$15,198	2.3	8.6	$3,304
Northeastern Vermont Regional Hospital	1,433	4.6	57	$15,586	2.1	5.9	$3,388
Northwestern Medical Center	2,162	5.7	62	$11,710	1.9	4.8	$2,054
Porter Hospital	1,236	6.3	63	$17,935	3.5	5.1	$2,847
Rutland Regional Medical Center	5,227	6.6	62	$16,976	2.5	6.4	$2,572
Southwestern Medical Center	2,813	6.0	61	$14,551	3.2	6.1	$2,425
Springfield Hospital	1,521	5.6	62	$14,652	1.9	6.5	$2,616
Veteran's Administration Center	691	8.0	66	n/a	1.8	4.7	n/a
NH-Dartmouth Hitchcock Hospital	6,691	6.9	56	$22,563	2.5	7.6	$3,270
NY-Albany Medical Center	135	10.5	39	$36,542	4.3	7.3	$3,480
Vermont Total	**45,421**	**6.4**	**57**	**$16,975**	**2.5**	**6.1**	**$2,652**

Hospitalizations with EAR as the Primary Procedure By Hospital, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	9	2.2	34	$5,722	1.6	3.4	$2,601
Central Vermont	15	9.1	48	$10,401	1.3	5.4	$1,143
Copley Hospital	0	--	--	--	--	--	--
Fletcher Allen Health Care	120	4.7	33	$15,016	2.6	3.9	$3,195
Gifford Memorial Hospital	0	--	--	--	--	--	--
Grace Cottage	0	--	--	--	--	--	--
MT. Ascutney	0	--	--	--	--	--	--
North Country Hospital	9	2.4	34	$4,178	1.2	6.0	$1,741
Northeastern Vermont Regional Hospital	2	2.0	20	$1,816	1.0	1.5	$908
Northwestern Medical Center	6	4.5	60	$6,118	1.7	5.2	$1,360
Porter Hospital	3	2.3	23	$5,527	2.3	2.0	$2,403
Rutland Regional Medical Center	19	2.9	32	$6,646	2.4	3.9	$2,292
Southwestern Medical Center	7	6.6	46	$9,615	3.4	4.0	$1,457
Springfield Hospital	8	6.4	70	$10,864	1.5	7.4	$1,698
Veteran's Administration Center	4	4.0	70	n/a	1.8	3.3	n/a
NH-Dartmouth Hitchcock Hospital	156	2.2	34	$8,832	2.0	4.3	$4,015
NY-Albany Medical Center	5	3.0	24	$15,868	4.2	7.4	$5,289
Vermont Total	**363**	**3.6**	**40**	**$10,583**	**2.2**	**4.3**	**$2,940**

Hospitalizations with ENDOCRINE SYSTEM as the Primary Procedure By Hospital, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	17	3.7	53	$9,620	1.2	2.8	$2,600
Central Vermont	16	1.4	44	$7,922	1.3	2.4	$5,659
Copley Hospital	8	1.8	55	$9,953	1.8	3.5	$5,529
Fletcher Allen Health Care	297	4.1	50	$14,629	2.0	4.1	$3,568
Gifford Memorial Hospital	3	1.3	54	$15,123	1.3	3.3	$11,633
Grace Cottage	0	--	--	--	--	--	--
MT. Ascutney	0	--	--	--	--	--	--
North Country Hospital	14	1.4	53	$14,471	1.3	5.6	$10,336
Northeastern Vermont Regional Hospital	6	2.0	50	$15,444	1.3	3.0	$7,722
Northwestern Medical Center	3	4.3	65	$12,486	2.0	4.3	$2,904
Porter Hospital	26	1.5	58	$13,413	1.9	1.9	$8,942
Rutland Regional Medical Center	46	3.2	49	$14,019	2.6	3.7	$4,381
Southwestern Medical Center	41	3.0	55	$9,441	1.8	3.5	$3,147
Springfield Hospital	1	2.0	71	$9,342	1.0	2.0	$4,671
Veteran's Administration Center	9	4.4	61	n/a	1.0	3.3	n/a
NH-Dartmouth Hitchcock Hospital	333	2.5	50	$11,640	1.6	5.4	$4,656
NY-Albany Medical Center	7	3.6	59	$15,075	3.0	5.6	$4,188
Vermont Total	**827**	**3.1**	**51**	**$12,654**	**1.8**	**4.5**	**$4,082**

Hospitalizations with EYE as the Primary Procedure By Hospital, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	11	4.9	55	$8,680	1.7	4.6	$1,771
Central Vermont	7	5.4	59	$10,558	2.4	9.0	$1,955
Copley Hospital	4	3.8	82	$7,181	2.3	8.3	$1,890
Fletcher Allen Health Care	280	7.4	50	$21,641	2.8	5.5	$2,924
Gifford Memorial Hospital	1	1.0	9	$13,327	3.0	3.0	$13,327
Grace Cottage	0	--	--	--	--	--	--
MT. Ascutney	0	--	--	--	--	--	--
North Country Hospital	18	1.8	65	$6,254	1.8	8.4	$3,474
Northeastern Vermont Regional Hospital	4	1.8	27	$7,683	1.3	1.5	$4,268
Northwestern Medical Center	8	5.3	56	$11,455	2.6	6.1	$2,161
Porter Hospital	1	8.0	78	$14,332	2.0	7.0	$1,792
Rutland Regional Medical Center	28	4.5	60	$9,801	2.3	5.8	$2,178
Southwestern Medical Center	28	4.7	57	$9,557	2.4	5.5	$2,033
Springfield Hospital	10	4.1	73	$8,514	2.2	7.5	$2,077
Veteran's Administration Center	0	--	--	--	--	--	--
NH-Dartmouth Hitchcock Hospital	199	4.4	52	$13,771	3.3	5.8	$3,130
NY-Albany Medical Center	2	2.5	40	$8,586	2.0	5.5	$3,434
Vermont Total	**601**	**5.7**	**52**	**$16,481**	**2.8**	**5.8**	**$2,891**

Hospitalizations with FEMALE GENITAL ORGANS as the Primary Procedure By Hospital, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	581	2.4	47	$6,750	2.0	2.7	$2,813
Central Vermont	1,061	2.4	43	$6,944	2.3	4.3	$2,893
Copley Hospital	280	2.5	43	$10,710	2.6	3.7	$4,284
Fletcher Allen Health Care	5,248	3.2	49	$10,168	3.1	4.6	$3,178
Gifford Memorial Hospital	321	2.5	45	$14,522	2.1	3.7	$5,809
Grace Cottage	0	--	--	--	--	--	--
MT. Ascutney	92	2.5	52	$10,092	2.2	5.2	$4,037
North Country Hospital	540	2.4	45	$11,105	2.6	6.4	$4,627
Northeastern Vermont Regional Hospital	532	2.3	45	$11,273	2.3	4.3	$4,901
Northwestern Medical Center	701	2.4	45	$7,201	2.3	3.5	$3,000
Porter Hospital	571	2.5	45	$9,911	3.3	3.5	$3,964
Rutland Regional Medical Center	1,683	2.5	47	$9,288	2.2	3.9	$3,715
Southwestern Medical Center	800	2.5	44	$8,638	2.3	3.2	$3,455
Springfield Hospital	721	2.0	46	$8,873	2.3	5.5	$4,437
Veteran's Administration Center	7	3.0	54	n/a	1.6	3.0	n/a
NH-Dartmouth Hitchcock Hospital	1,845	3.5	52	$13,023	3.0	6.2	$3,721
NY-Albany Medical Center	47	4.2	60	$13,400	4.8	7.2	$3,190
Vermont Total	**15,030**	**2.8**	**48**	**9,949**	**2.7**	**4.5**	**$3,553**

Hospitalizations with HEMIC & LYMPHATIC SYSTEM as the Primary Procedure By Hospital, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	29	7.0	66	$15,780	3.0	4.8	$2,254
Central Vermont	86	6.6	61	$16,881	2.6	5.9	$2,558
Copley Hospital	31	5.0	52	$14,952	3.3	5.0	$2,990
Fletcher Allen Health Care	710	8.9	53	$24,859	3.0	6.5	$2,793
Gifford Memorial Hospital	4	5.5	72	$18,839	1.5	7.3	$3,425
Grace Cottage	0	--	--	--	--	--	--
MT. Ascutney	5	6.8	66	$18,601	1.8	6.4	$2,735
North Country Hospital	16	5.3	48	$16,464	2.1	8.0	$3,106
Northeastern Vermont Regional Hospital	17	5.4	47	$16,362	3.0	6.6	$3,030
Northwestern Medical Center	20	4.9	54	$11,455	2.0	5.8	$2,338
Porter Hospital	21	4.9	51	$16,357	4.2	4.6	$3,338
Rutland Regional Medical Center	205	5.7	58	$14,731	2.6	5.4	$2,584
Southwestern Medical Center	90	5.6	65	$14,100	3.2	6.0	$2,518
Springfield Hospital	48	4.8	61	$11,943	1.4	6.7	$2,488
Veteran's Administration Center	37	7.5	65	n/a	2.0	6.1	n/a
NH-Dartmouth Hitchcock Hospital	532	9.5	51	$37,518	2.6	7.3	$3,949
NY-Albany Medical Center	10	11.5	52	$49,573	5.8	7.4	$4,311
Vermont Total	**1,861**	**8.1**	**55**	**$25,167**	**2.8**	**6.5**	**$3,107**

Hospitalizations with INTEGUMENTARY SYSTEM as the Primary Procedure By Hospital, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	227	5.9	59	$9,140	1.7	4.0	$1,549
Central Vermont	540	5.7	57	$10,321	2.1	6.4	$1,811
Copley Hospital	235	5.2	61	$10,264	2.0	5.5	$1,974
Fletcher Allen Health Care	3,635	7.7	48	$16,835	2.5	5.8	$2,186
Gifford Memorial Hospital	151	4.6	71	$10,273	1.5	6.9	$2,233
Grace Cottage	2	1.5	61	$1,636	1.5	5.5	$1,091
MT. Ascutney	58	5.0	60	$11,062	2.1	6.1	$2,212
North Country Hospital	227	3.8	59	$8,997	1.5	9.9	$2,368
Northeastern Vermont Regional Hospital	223	5.3	63	$11,604	1.8	8.1	$2,189
Northwestern Medical Center	337	4.8	63	$8,548	1.8	5.4	$1,781
Porter Hospital	301	6.0	60	$12,482	2.3	5.3	$2,080
Rutland Regional Medical Center	771	6.5	57	$12,679	2.1	6.5	$1,951
Southwestern Medical Center	549	5.7	62	$11,510	2.5	6.6	$2,019
Springfield Hospital	265	5.4	62	$10,055	1.5	6.5	$1,862
Veteran's Administration Center	168	13.3	65	n/a	2.0	6.2	n/a
NH-Dartmouth Hitchcock Hospital	1,926	5.6	52	$15,561	2.3	7.0	$2,779
NY-Albany Medical Center	56	6.5	48	$21,506	2.7	7.1	$3,309
Vermont Total	**9,671**	**6.5**	**54**	**$14,018**	**2.3**	**6.3**	**$2,157**

Hospitalizations with MALE GENITAL ORGANS as the Primary Procedure By Hospital, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	1,205	2.6	11	$2,546	1.1	1.8	$979
Central Vermont	1,919	2.3	11	$2,478	1.4	2.4	$1,077
Copley Hospital	832	2.0	1	$1,534	1.0	1.7	$767
Fletcher Allen Health Care	9,222	2.7	11	$3,773	1.2	2.3	$1,397
Gifford Memorial Hospital	50	2.9	63	$23,288	1.7	4.7	$8,030
Grace Cottage	24	1.7	0	$768	1.0	1.5	$452
MT. Ascutney	60	2.4	72	$8,953	1.6	4.5	$3,730
North Country Hospital	879	2.5	8	$4,826	1.2	3.4	$1,930
Northeastern Vermont Regional Hospital	765	2.0	3	$1,939	1.1	1.6	$970
Northwestern Medical Center	2,113	2.0	2	$1,501	1.0	1.5	$751
Porter Hospital	1,100	1.9	4	$2,204	1.1	1.5	$1,160
Rutland Regional Medical Center	3,135	2.4	15	$3,369	1.2	2.0	$1,404
Southwestern Medical Center	1,349	2.2	6	$2,081	1.1	1.7	$946
Springfield Hospital	348	2.2	15	$3,643	1.2	2.9	$1,656
Veteran's Administration Center	261	3.1	67	n/a	1.4	2.8	n/a
NH-Dartmouth Hitchcock Hospital	1,876	2.9	16	$6,068	1.3	3.8	$2,092
NY-Albany Medical Center	48	5.5	6	$13,961	2.6	3.2	$2,538
Vermont Total	**25,186**	**2.5**	**10**	**$3,384**	**1.2**	**2.2**	**$1,354**

Hospitalizations with MUSCULOSKELETAL as the Primary Procedure By Hospital, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	1,994	5.1	62	$13,891	1.6	3.6	$2,724
Central Vermont	2,564	4.7	67	$17,946	2.0	5.7	$3,818
Copley Hospital	1,450	5.1	62	$23,074	2.7	4.6	$4,524
Fletcher Allen Health Care	13,982	5.8	56	$21,447	2.5	5.0	$3,698
Gifford Memorial Hospital	446	4.6	69	$21,256	1.9	5.5	$4,621
Grace Cottage	4	2.5	54	$2,795	2.0	4.3	$1,118
MT. Ascutney	393	4.5	71	$22,802	1.7	6.1	$5,067
North Country Hospital	701	4.4	69	$16,920	1.9	9.5	$3,845
Northeastern Vermont Regional Hospital	1,308	4.8	65	$19,818	1.9	5.8	$4,129
Northwestern Medical Center	1,915	4.2	66	$14,848	1.7	5.2	$3,535
Porter Hospital	1,064	5.4	67	$24,169	2.6	4.8	$4,476
Rutland Regional Medical Center	4,461	5.5	65	$22,048	2.3	5.5	$4,009
Southwestern Medical Center	2,675	4.3	65	$17,065	2.2	5.2	$3,969
Springfield Hospital	1,126	4.3	68	$21,926	1.4	6.3	$5,099
Veteran's Administration Center	530	10.0	68	n/a	1.6	4.7	n/a
NH-Dartmouth Hitchcock Hospital	7,260	5.3	57	$23,392	2.3	6.5	$4,414
NY-Albany Medical Center	152	15.9	49	$67,431	5.2	7.2	$4,241
Vermont Total	**42,025**	**5.3**	**61**	**$20,792**	**2.3**	**5.4**	**$3,923**

Hospitalizations with NERVOUS SYSTEM as the Primary Procedure By Hospital, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	216	3.5	55	$7,072	1.5	2.6	$2,021
Central Vermont	313	3.9	49	$8,044	1.9	4.9	$2,063
Copley Hospital	82	5.1	52	$8,831	2.0	4.8	$1,732
Fletcher Allen Health Care	4,429	6.5	42	$19,717	2.3	4.5	$3,033
Gifford Memorial Hospital	45	3.9	51	$7,971	1.3	5.5	$2,044
Grace Cottage	2	3.0	7	$1,712	1.0	3.0	$571
MT. Ascutney	7	6.3	56	$13,800	1.7	7.3	$2,190
North Country Hospital	233	3.9	45	$9,577	1.5	7.8	$2,456
Northeastern Vermont Regional Hospital	75	3.5	44	$7,609	1.8	5.0	$2,174
Northwestern Medical Center	181	3.5	50	$6,274	1.8	4.1	$1,793
Porter Hospital	92	2.6	34	$5,847	2.1	3.8	$2,249
Rutland Regional Medical Center	1,526	3.6	50	$10,429	1.6	3.5	$2,897
Southwestern Medical Center	561	3.7	50	$8,931	2.9	4.2	$2,414
Springfield Hospital	104	4.0	39	$7,885	1.2	5.6	$1,971
Veteran's Administration Center	63	8.5	61	n/a	1.8	4.2	n/a
NH-Dartmouth Hitchcock Hospital	3,895	5.5	48	$22,071	2.2	6.0	$4,013
NY-Albany Medical Center	132	9.8	45	$41,080	4.6	6.0	$4,192
Vermont Total	**11,956**	**5.4**	**46**	**$17,583**	**2.2**	**4.9**	**$3,256**

Hospitalizations with NOSE, MOUTH AND PHARYNX as the Primary Procedure By Hospital, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	103	3.3	42	$8,053	1.8	2.9	$2,440
Central Vermont	117	2.8	48	$7,136	2.1	4.6	$2,549
Copley Hospital	2	4.0	46	$4,350	1.5	3.5	$1,088
Fletcher Allen Health Care	1,086	4.4	35	$10,978	2.6	4.3	$2,495
Gifford Memorial Hospital	5	4.4	74	$6,962	1.0	6.2	$1,582
Grace Cottage	0	--	--	--	--	--	--
MT. Ascutney	3	2.3	70	$7,199	2.0	6.7	$3,130
North Country Hospital	38	2.6	50	$9,439	2.7	9.5	$3,630
Northeastern Vermont Regional Hospital	30	2.5	34	$5,660	1.9	4.1	$2,264
Northwestern Medical Center	43	4.6	47	$7,612	1.8	4.3	$1,655
Porter Hospital	36	2.7	34	$6,540	2.0	3.3	$2,422
Rutland Regional Medical Center	227	3.2	51	$9,138	2.6	5.1	$2,856
Southwestern Medical Center	88	3.9	56	$9,001	3.0	5.4	$2,308
Springfield Hospital	45	3.1	58	$8,321	1.6	6.6	$2,684
Veteran's Administration Center	92	1.3	57	n/a	2.1	2.6	n/a
NH-Dartmouth Hitchcock Hospital	875	3.2	41	$11,456	2.8	5.2	$3,580
NY-Albany Medical Center	15	6.9	31	$19,679	3.9	6.1	$2,852
Vermont Total	**2,805**	**3.6**	**41**	**$10,183**	**2.6**	**4.7**	**$2,829**

Hospitalizations with OBSTETRICAL as the Primary Procedure By Hospital, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	2,642	2.4	28	$4,025	1.3	3.3	$1,677
Central Vermont	4,161	2.2	27	$4,209	2.4	3.9	$1,913
Copley Hospital	2,647	2.1	27	$5,158	1.8	3.4	$2,456
Fletcher Allen Health Care	21,091	2.6	30	$5,138	2.5	4.7	$1,976
Gifford Memorial Hospital	2,730	2.1	29	$5,551	1.7	4.0	$2,643
Grace Cottage	94	1.8	29	$2,022	2.0	2.6	$1,123
MT. Ascutney	0	--	--	--	--	--	--
North Country Hospital	2,096	2.2	26	$4,293	3.1	4.6	$1,951
Northeastern Vermont Regional Hospital	2,468	2.2	26	$4,752	1.6	3.8	$2,160
Northwestern Medical Center	4,473	2.1	27	$3,560	1.9	3.0	$1,695
Porter Hospital	2,291	2.0	28	$4,644	2.2	3.1	$2,322
Rutland Regional Medical Center	5,226	2.1	28	$4,170	1.9	3.7	$1,986
Southwestern Medical Center	3,297	2.3	27	$3,458	1.9	3.7	$1,503
Springfield Hospital	1,900	2.1	27	$4,450	2.7	4.6	$2,119
Veteran's Administration Center	0	--	--	--	--	--	--
NH-Dartmouth Hitchcock Hospital	4,222	2.8	29	$5,470	3.3	6.3	$1,954
NY-Albany Medical Center	102	6.0	29	$12,024	2.2	6.2	$2,004
Vermont Total	**59,440**	**2.4**	**28**	**$4,690**	**2.3**	**4.2**	**$1,954**

Hospitalizations with RESPIRATORY SYSTEM as the Primary Procedure By Hospital, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	197	8.5	66	$13,034	2.1	5.0	$1,533
Central Vermont	803	8.9	70	$19,791	2.6	7.9	$2,224
Copley Hospital	97	5.8	59	$9,373	1.7	5.1	$1,616
Fletcher Allen Health Care	3,338	15.2	55	$44,049	3.8	7.8	$2,898
Gifford Memorial Hospital	75	6.3	68	$10,989	1.9	6.7	$1,744
Grace Cottage	0	--	--	--	--	--	--
MT. Ascutney	27	7.0	75	$13,417	1.7	7.3	$1,917
North Country Hospital	249	4.8	61	$16,180	2.0	9.3	$3,371
Northeastern Vermont Regional Hospital	142	4.9	59	$11,078	1.9	6.5	$2,261
Northwestern Medical Center	210	6.5	63	$10,452	1.6	5.7	$1,608
Porter Hospital	128	6.4	68	$12,378	2.5	6.2	$1,934
Rutland Regional Medical Center	1,173	11.1	66	$32,086	3.1	8.0	$2,891
Southwestern Medical Center	455	8.5	65	$21,214	3.9	7.0	$2,496
Springfield Hospital	173	8.4	67	$18,451	1.8	7.6	$2,197
Veteran's Administration Center	153	12.9	67	n/a	1.8	5.2	n/a
NH-Dartmouth Hitchcock Hospital	2,077	10.1	58	$37,767	2.8	7.7	$3,739
NY-Albany Medical Center	64	25.1	42	$100,839	7.3	8.8	$4,017
Vermont Total	**9,361**	**11.5**	**60**	**$33,618**	**3.1**	**7.6**	**$2,923**

Hospitalizations with URINARY SYSTEM as the Primary Procedure By Hospital, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	225	3.5	66	$7,621	1.6	4.0	$2,177
Central Vermont	365	4.9	63	$12,312	2.7	6.5	$2,513
Copley Hospital	626	4.7	73	$7,869	1.1	6.4	$1,674
Fletcher Allen Health Care	2,834	5.7	53	$17,941	2.8	5.5	$3,148
Gifford Memorial Hospital	109	3.4	64	$14,055	1.9	5.4	$4,134
Grace Cottage	42	3.1	81	$3,042	2.6	7.6	$981
MT. Ascutney	32	3.7	67	$9,876	1.9	4.6	$2,669
North Country Hospital	123	3.9	58	$18,889	2.6	8.9	$4,843
Northeastern Vermont Regional Hospital	146	4.0	54	$14,187	2.9	5.6	$3,547
Northwestern Medical Center	133	4.1	63	$9,672	2.3	4.6	$2,359
Porter Hospital	404	6.2	76	$9,921	2.0	7.5	$1,600
Rutland Regional Medical Center	783	4.3	59	$12,320	2.3	4.8	$2,865
Southwestern Medical Center	387	4.7	60	$14,023	3.9	5.4	$2,984
Springfield Hospital	430	4.5	71	$9,995	1.3	7.8	$2,221
Veteran's Administration Center	263	5.2	67	n/a	1.8	4.1	n/a
NH-Dartmouth Hitchcock Hospital	1,350	4.7	50	$19,149	2.4	6.8	$4,074
NY-Albany Medical Center	47	5.9	41	$27,928	3.7	5.5	$4,734
Vermont Total	**8,299**	**5.0**	**59**	**$14,782**	**2.4**	**5.9**	**$2,956**

Hospitalizations with MISCELLANEOUS as the Primary Procedure By Hospital, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	6,072	4.6	65	$7,486	1.6	5.2	$1,627
Central Vermont	6,273	4.7	53	$9,198	1.8	6.4	$1,957
Copley Hospital	1,619	4.0	63	$6,367	1.6	5.2	$1,592
Fletcher Allen Health Care	17,595	7.6	52	$16,404	2.0	7.1	$2,158
Gifford Memorial Hospital	943	4.0	57	$8,150	1.6	6.1	$2,038
Grace Cottage	1,597	3.1	73	$3,665	2.6	6.9	$1,182
MT. Ascutney	138	4.5	73	$9,654	1.6	7.1	$2,145
North Country Hospital	1,468	3.5	58	$10,194	1.5	10.2	$2,913
Northeastern Vermont Regional Hospital	3,749	3.2	53	$5,623	2.0	5.9	$1,757
Northwestern Medical Center	1,511	4.2	66	$8,535	1.5	6.0	$2,032
Porter Hospital	3,330	4.0	68	$7,307	1.7	6.4	$1,827
Rutland Regional Medical Center	7,760	6.0	67	$12,376	2.0	7.1	$2,063
Southwestern Medical Center	11,388	4.1	67	$8,707	2.0	5.8	$2,124
Springfield Hospital	6,295	6.7	39	$6,239	2.0	5.5	$931
Veteran's Administration Center	1,593	8.0	67	n/a	1.6	5.4	n/a
NH-Dartmouth Hitchcock Hospital	5,952	7.4	46	$24,869	2.0	7.6	$3,361
NY-Albany Medical Center	415	9.5	34	$30,668	2.8	6.2	$3,228
Vermont Total	**77,698**	**5.6**	**57**	**$11,431**	**1.9**	**6.5**	**$2,041**

Procedure-Specific Data By HSA

Hospitalizations with NO PROCEDURES LISTED as the Primary Procedure By Hospital Service Area, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	20,798	4.1	47	$5,492	0	5.3	$1,340
Bennington	13,702	3.5	50	$4,898	0	4.6	$1,399
Brattleboro	7,502	4.2	44	$5,109	0	4.3	$1,216
Burlington	49,313	4.3	44	$5,453	0	4.7	$1,268
Middlebury	8,045	4.3	44	$5,737	0	4.8	$1,334
Morrisville	8,583	3.8	47	$4,902	0	4.6	$1,290
Newport	13,602	3.3	53	$5,960	0	7.9	$1,806
Randolph	6,515	3.7	52	$5,464	0	5.4	$1,477
Rutland	32,442	4.2	53	$6,083	0	6.3	$1,448
Springfield	15,576	3.5	55	$5,904	0	6.2	$1,687
St. Albans	16,715	3.9	51	$5,348	0	4.9	$1,371
St. Johnsbury	9,379	3.4	47	$5,477	0	5.6	$1,611
White River Jct.	20,287	3.6	52	$5,452	0	6.0	$1,514
Vermont Total	**222,459**	**3.9**	**49**	**$5,548**	**0**	**5.5**	**$1,423**

Hospitalizations with CARDIOVASCULAR SYSTEM as the Primary Procedure By Hospital Service Area, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	4,975	5.4	64	$26,835	3.9	7.7	$4,969
Bennington	3,801	6.0	64	$31,604	4.7	7.2	$5,267
Brattleboro	2,048	6.1	63	$29,553	3.8	7.7	$4,845
Burlington	13,464	5.8	63	$24,310	3.9	7.5	$4,191
Middlebury	2,485	5.5	63	$24,266	4.0	7.4	$4,412
Morrisville	2,152	5.0	64	$24,033	3.9	7.5	$4,807
Newport	2,368	5.3	64	$25,972	3.8	8.2	$4,900
Randolph	1,451	4.9	66	$24,008	3.6	7.7	$4,900
Rutland	5,980	5.8	64	$25,629	3.7	7.6	$4,419
Springfield	2,832	5.5	65	$27,219	3.8	8.1	$4,949
St. Albans	4,156	5.7	62	$24,536	3.8	7.5	$4,305
St. Johnsbury	2,164	5.4	64	$28,755	3.8	8.2	$5,325
White River Jct.	4,299	5.6	64	$27,203	3.7	8.2	$4,858
Vermont Total	**52,175**	**5.6**	**64**	**$26,091**	**3.9**	**7.7**	**$4,659**

Hospitalizations with DIGESTIVE SYSTEM as the Primary Procedure By Hospital Service Area, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	4,532	6.6	56	$17,344	2.5	6.3	$2,628
Bennington	3,810	6.3	59	$17,325	3.1	6.1	$2,750
Brattleboro	2,564	6.5	57	$16,196	2.3	4.9	$2,492
Burlington	11,117	6.4	53	$16,648	2.5	5.6	$2,601
Middlebury	1,872	7.0	58	$19,062	3.2	5.7	$2,723
Morrisville	1,899	6.2	55	$16,601	2.7	5.5	$2,678
Newport	2,334	5.3	58	$17,077	2.3	8.0	$3,222
Randolph	1,111	6.3	58	$19,099	2.4	6.1	$3,032
Rutland	6,290	6.8	60	$18,400	2.6	6.5	$2,706
Springfield	2,920	6.2	60	$18,014	2.2	6.6	$2,905
St. Albans	3,225	7.0	57	$15,923	2.3	5.5	$2,275
St. Johnsbury	2,250	5.7	57	$19,079	2.3	6.4	$3,347
White River Jct.	3,933	5.8	57	$17,196	2.2	6.6	$2,965
Vermont Total	**47,857**	**6.4**	**57**	**$17,338**	**2.5**	**6.1**	**$2,709**

Hospitalizations with EAR as the Primary Procedure By Hospital Service Area, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	49	3.3	44	$8,701	1.7	4.5	$2,637
Bennington	21	3.8	38	$16,609	3.1	5.3	$4,371
Brattleboro	28	1.6	24	$5,891	1.9	3.2	$3,682
Burlington	75	6.2	31	$14,779	2.5	4.3	$2,384
Middlebury	6	1.3	22	$12,766	2.3	2.7	$9,820
Morrisville	8	3.8	35	$16,011	2.6	4.6	$4,213
Newport	15	3.0	43	$8,351	1.5	5.5	$2,784
Randolph	11	3.6	40	$8,133	2.0	5.2	$2,259
Rutland	46	2.7	36	$8,699	2.4	3.9	$3,222
Springfield	35	4.1	46	$9,345	1.9	5.2	$2,279
St. Albans	21	3.5	42	$16,081	2.6	4.0	$4,595
St. Johnsbury	20	2.2	20	$12,300	2.2	3.5	$5,591
White River Jct.	42	2.6	36	$11,073	1.9	4.5	$4,259
Vermont Total	**377**	**3.6**	**36**	**$11,257**	**2.2**	**4.4**	**$3,127**

Hospitalizations with ENDOCRINE SYSTEM as the Primary Procedure By Hospital Service Area, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	113	2.5	49	$11,618	1.6	4.2	$4,647
Bennington	83	3.5	54	$11,763	1.9	4.1	$3,361
Brattleboro	66	3.7	50	$16,080	2.0	4.6	$4,346
Burlington	186	3.9	49	$15,849	1.9	3.9	$4,064
Middlebury	42	2.4	59	$12,068	2.0	2.8	$5,028
Morrisville	35	3.1	50	$11,985	1.9	4.2	$3,866
Newport	55	3.0	50	$16,413	2.0	5.3	$5,471
Randolph	16	2.4	47	$13,187	1.8	4.4	$5,495
Rutland	113	2.4	49	$13,422	1.9	4.4	$5,593
Springfield	50	2.3	53	$10,595	1.7	5.1	$4,607
St. Albans	49	5.6	50	$16,185	1.8	4.1	$2,890
St. Johnsbury	44	3.6	50	$16,704	1.6	5.3	$4,640
White River Jct.	82	2.2	49	$10,905	1.6	5.2	$4,957
Vermont Total	**934**	**3.2**	**50**	**$13,712**	**1.8**	**4.4**	**$4,285**

Hospitalizations with EYE as the Primary Procedure By Hospital Service Area, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	56	7.1	49	$19,943	3.3	5.1	$2,809
Bennington	45	6.8	54	$16,804	2.6	5.4	$2,471
Brattleboro	49	3.0	54	$9,111	2.9	4.8	$3,037
Burlington	117	7.3	52	$21,175	2.6	6.1	$2,901
Middlebury	32	5.6	48	$15,970	2.8	6.2	$2,852
Morrisville	35	2.7	54	$10,268	2.8	5.4	$3,803
Newport	47	5.3	54	$16,394	2.8	6.8	$3,093
Randolph	21	1.6	58	$6,622	3.1	5.1	$4,139
Rutland	73	4.6	54	$14,278	2.6	5.2	$3,104
Springfield	47	6.0	59	$17,499	3.0	6.6	$2,917
St. Albans	35	13.5	46	$41,372	3.1	5.4	$3,065
St. Johnsbury	32	2.3	51	$9,411	2.3	5.1	$4,092
White River Jct.	81	3.6	51	$11,707	2.9	5.4	$3,252
Vermont Total	**670**	**5.5**	**52**	**$16,626**	**2.8**	**5.6**	**$3,023**

Hospitalizations with FEMALE GENITAL ORGANS as the Primary Procedure By Hospital Service Area, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	1,604	2.9	47	$9,243	2.7	4.7	$3,187
Bennington	1,200	3.1	46	$10,210	2.6	3.9	$3,294
Brattleboro	756	2.6	48	$8,626	2.2	3.6	$3,318
Burlington	3,788	2.9	48	$9,620	2.9	4.5	$3,317
Middlebury	763	2.8	47	$10,249	3.2	4.1	$3,660
Morrisville	632	2.8	46	$10,160	2.9	4.4	$3,629
Newport	780	2.6	47	$11,491	2.8	6.0	$4,420
Randolph	395	2.6	48	$12,822	2.4	4.5	$4,932
Rutland	2,055	2.7	47	$10,204	2.5	4.2	$3,779
Springfield	999	2.4	48	$9,790	2.4	5.3	$4,079
St. Albans	1,003	2.8	46	$8,546	2.6	3.9	$3,052
St. Johnsbury	714	2.6	48	$11,350	2.5	4.5	$4,365
White River Jct.	1,249	2.8	48	$11,020	2.8	5.5	$3,936
Vermont Total	**15,938**	**2.8**	**47**	**$10,007**	**2.7**	**4.5**	**$3,574**

Hospitalizations with HEMIC & LYMPHATIC SYSTEM as the Primary Procedure By Hospital Service Area, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	210	9.1	55	$37,501	2.9	6.4	$4,121
Bennington	156	8.1	57	$30,710	3.2	6.2	$3,791
Brattleboro	102	11.0	52	$53,536	2.9	6.6	$4,867
Burlington	497	10.6	53	$38,858	3.1	6.6	$3,666
Middlebury	79	8.1	46	$29,339	3.1	5.4	$3,622
Morrisville	83	7.9	56	$32,541	2.9	5.4	$4,119
Newport	75	7.8	50	$31,608	2.5	7.1	$4,052
Randolph	54	8.9	56	$31,455	2.3	6.9	$3,534
Rutland	332	8.3	54	$32,478	3.0	6.2	$3,913
Springfield	120	6.8	57	$22,861	2.1	6.6	$3,362
St. Albans	118	10.2	53	$31,834	2.9	6.8	$3,121
St. Johnsbury	71	9.7	54	$40,011	2.8	7.2	$4,125
White River Jct.	184	9.0	52	$34,898	2.5	7.1	$3,878
Vermont Total	**2,081**	**9.2**	**54**	**$35,114**	**2.9**	**6.5**	**$3,817**

Hospitalizations with INTEGUMENTARY SYSTEM as the Primary Procedure By Hospital Service Area, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	1,033	6.6	53	$14,373	2.3	6.1	$2,178
Bennington	832	6.2	58	$14,854	2.6	6.4	$2,396
Brattleboro	453	5.9	54	$13,563	2.1	5.1	$2,299
Burlington	2,470	7.3	49	$16,196	2.3	5.7	$2,219
Middlebury	473	7.0	55	$15,022	2.4	5.5	$2,146
Morrisville	458	6.1	55	$17,009	2.3	5.5	$2,788
Newport	410	5.9	55	$11,716	1.9	8.2	$1,986
Randolph	272	6.3	60	$15,358	2.0	6.8	$2,438
Rutland	1,153	7.0	54	$15,782	2.3	6.5	$2,255
Springfield	634	6.0	58	$14,763	2.1	6.6	$2,461
St. Albans	693	6.1	54	$12,534	2.1	5.5	$2,055
St. Johnsbury	475	5.4	59	$14,114	2.0	7.3	$2,614
White River Jct.	1,076	5.9	55	$14,229	2.1	6.7	$2,412
Vermont Total	**10,432**	**6.5**	**54**	**$14,905**	**2.2**	**6.2**	**$2,293**

Hospitalizations with MALE GENITAL ORGANS as the Primary Procedure By Hospital Service Area, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	2,325	2.4	12	$3,134	1.4	2.5	$1,306
Bennington	1,789	2.4	8	$2,923	1.2	1.9	$1,218
Brattleboro	1,185	2.6	13	$3,249	1.2	2.1	$1,250
Burlington	7,864	2.5	9	$3,127	1.2	2.2	$1,251
Middlebury	1,305	2.3	10	$3,655	1.2	1.9	$1,589
Morrisville	1,080	2.5	9	$3,452	1.2	2.1	$1,381
Newport	1,149	2.6	12	$5,219	1.3	3.2	$2,007
Randolph	250	2.9	28	$8,105	1.4	3.8	$2,795
Rutland	3,358	2.5	14	$3,692	1.2	2.1	$1,477
Springfield	876	2.7	19	$5,950	1.4	3.0	$2,204
St. Albans	2,457	2.3	6	$2,440	1.1	1.8	$1,061
St. Johnsbury	1,047	2.2	7	$2,746	1.2	2.0	$1,248
White River Jct.	1,780	2.5	12	$3,527	1.2	3.1	$1,411
Vermont Total	**26,465**	**2.5**	**11**	**$3,410**	**1.2**	**2.3**	**$1,364**

Hospitalizations with MUSCULOSKELETAL as the Primary Procedure By Hospital Service Area, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	4,420	5.2	61	$21,488	2.3	5.6	$4,132
Bennington	3,766	4.7	62	$19,764	2.2	5.1	$4,205
Brattleboro	2,549	5.2	60	$17,207	1.9	4.2	$3,309
Burlington	10,215	5.5	58	$20,294	2.3	4.9	$3,690
Middlebury	2,024	5.6	59	$23,668	2.6	4.9	$4,226
Morrisville	2,003	5.5	58	$22,869	2.6	4.9	$4,158
Newport	2,047	5.2	61	$21,801	2.3	6.9	$4,193
Randolph	1,074	4.9	59	$22,828	2.2	5.6	$4,659
Rutland	5,473	6.1	62	$24,391	2.4	5.7	$3,999
Springfield	2,495	4.9	62	$22,927	1.9	6.0	$4,679
St. Albans	3,050	4.8	60	$18,549	2.2	5.2	$3,864
St. Johnsbury	2,157	5.4	61	$22,878	2.1	5.9	$4,237
White River Jct.	3,833	4.8	60	$20,869	2.0	5.9	$4,348
Vermont Total	**45,106**	**5.3**	**60**	**$21,284**	**2.2**	**5.4**	**$4,016**

Hospitalizations with NERVOUS SYSTEM as the Primary Procedure By Hospital Service Area, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	1,207	5.5	46	$19,200	2.2	5.3	$3,491
Bennington	1,052	4.8	50	$16,947	2.9	4.6	$3,531
Brattleboro	681	4.9	50	$17,738	2.0	4.6	$3,620
Burlington	2,764	6.1	43	$18,749	2.1	4.5	$3,074
Middlebury	520	6.0	42	$19,122	2.2	4.6	$3,187
Morrisville	429	5.8	48	$19,805	2.2	4.7	$3,415
Newport	752	5.1	47	$18,423	2.0	6.2	$3,612
Randolph	337	5.0	48	$17,137	2.1	5.2	$3,427
Rutland	2,040	4.3	47	$15,179	1.9	4.1	$3,530
Springfield	724	4.8	50	$17,666	2.0	5.5	$3,680
St. Albans	770	5.9	44	$18,787	2.4	4.5	$3,184
St. Johnsbury	591	4.9	48	$18,214	2.1	5.6	$3,717
White River Jct.	1,233	5.5	48	$19,712	2.0	5.8	$3,584
Vermont Total	**13,100**	**5.3**	**46**	**$18,035**	**2.1**	**4.9**	**$3,403**

Hospitalizations with NOSE, MOUTH AND PHARYNX as the Primary Procedure By Hospital Service Area, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	258	3.4	42	$9,816	2.3	4.5	$2,887
Bennington	189	3.7	43	$12,199	2.9	4.6	$3,297
Brattleboro	188	3.5	38	$11,169	2.4	3.9	$3,191
Burlington	704	4.0	38	$10,204	2.5	4.4	$2,551
Middlebury	79	4.6	33	$11,962	2.5	3.8	$2,600
Morrisville	84	3.8	42	$11,798	2.8	3.9	$3,105
Newport	131	3.7	44	$12,712	2.7	5.9	$3,436
Randolph	96	2.6	42	$7,949	2.6	4.3	$3,057
Rutland	344	3.5	45	$11,214	2.7	4.9	$3,204
Springfield	180	2.9	47	$9,758	2.6	5.5	$3,365
St. Albans	157	6.0	35	$13,866	2.5	4.7	$2,311
St. Johnsbury	109	4.2	38	$13,056	2.8	5.1	$3,109
White River Jct.	446	2.6	40	$8,980	2.6	4.9	$3,454
Vermont Total	**2,965**	**3.6**	**41**	**$10,693**	**2.6**	**4.7**	**$2,970**

Hospitalizations with OBSTETRICAL as the Primary Procedure By Hospital Service Area, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	6,339	2.4	28	$4,848	2.3	4.1	$2,020
Bennington	4,110	2.4	28	$3,842	2.0	3.8	$1,601
Brattleboro	2,796	2.5	28	$4,368	1.5	3.5	$1,747
Burlington	18,435	2.4	29	$4,917	2.5	4.6	$2,049
Middlebury	2,680	2.3	29	$4,951	2.2	3.8	$2,153
Morrisville	2,825	2.3	28	$5,339	2.1	3.7	$2,321
Newport	2,796	2.4	26	$4,643	2.7	4.5	$1,935
Randolph	1,359	2.3	28	$5,481	2.1	4.5	$2,383
Rutland	5,993	2.3	28	$4,560	2.0	3.9	$1,983
Springfield	2,796	2.3	27	$4,755	2.5	4.7	$2,067
St. Albans	5,003	2.2	27	$3,962	2.0	3.3	$1,801
St. Johnsbury	2,805	2.3	27	$4,929	1.8	3.9	$2,143
White River Jct.	4,544	2.4	28	$4,931	2.8	5.3	$2,055
Vermont Total	**62,481**	**2.4**	**28**	**$4,719**	**2.3**	**4.2**	**$1,966**

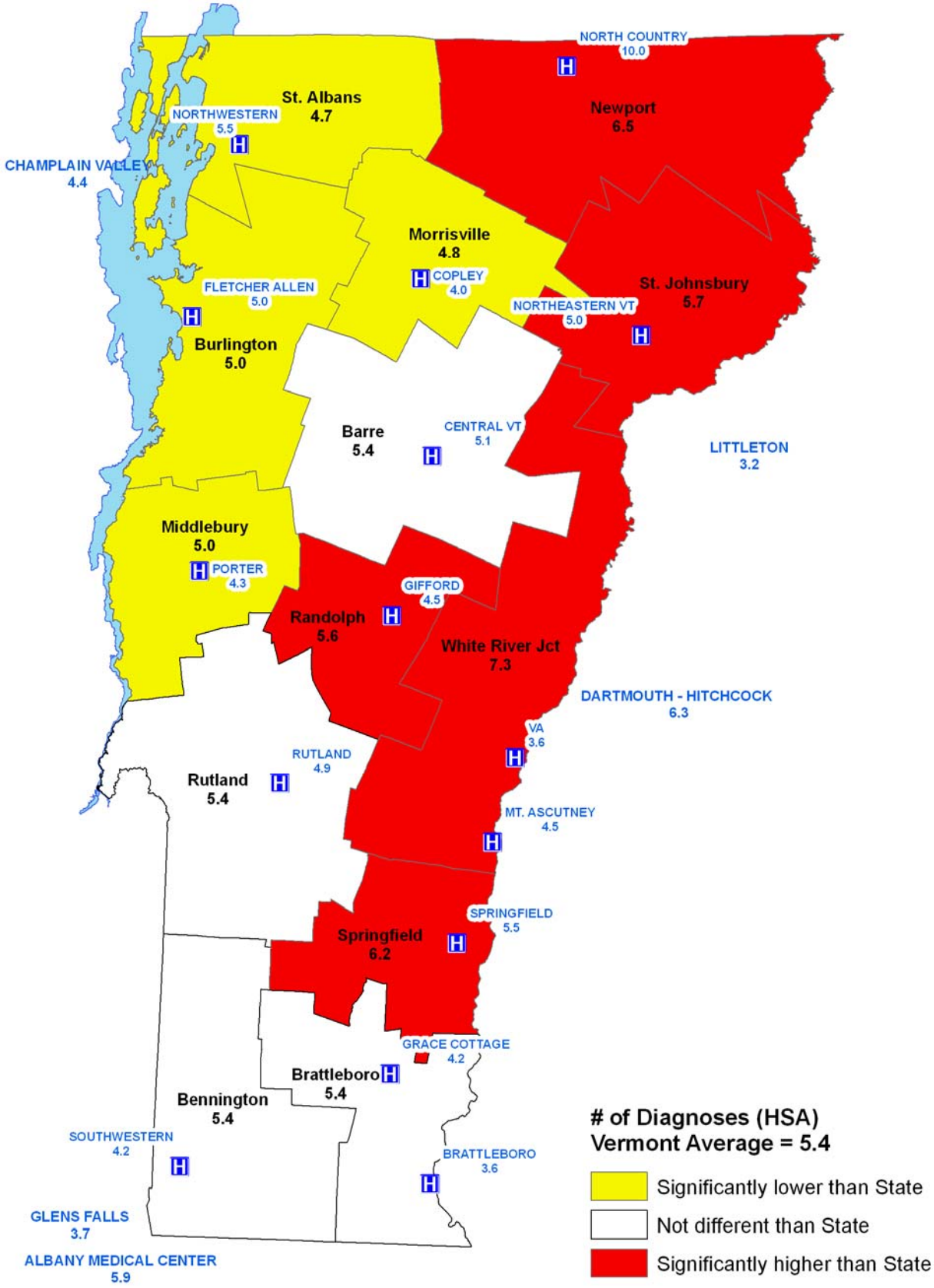
Hospitalizations with RESPIRATORY SYSTEM as the Primary Procedure By Hospital Service Area, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	1,256	11.0	64	$30,222	2.9	7.6	$2,747
Bennington	810	10.5	62	$35,007	4.3	7.1	$3,334
Brattleboro	440	10.9	61	$33,816	2.8	6.4	$3,102
Burlington	2,084	14.2	57	$40,319	3.5	7.6	$2,839
Middlebury	430	11.5	56	$35,582	3.6	7.2	$3,094
Morrisville	325	13.7	56	$39,702	3.3	7.3	$2,898
Newport	492	8.8	58	$34,146	2.7	8.5	$3,880
Randolph	230	10.3	63	$32,133	2.9	7.6	$3,120
Rutland	1,556	11.5	63	$35,366	3.2	7.9	$3,075
Springfield	546	9.2	63	$27,990	2.5	7.5	$3,042
St. Albans	622	12.0	57	$34,676	3.3	7.1	$2,890
St. Johnsbury	422	8.7	59	$29,534	2.6	7.4	$3,395
White River Jct.	804	9.0	58	$31,237	2.5	7.3	$3,471
Vermont Total	**10,017**	**11.4**	**60**	**$34,648**	**3.2**	**7.5**	**$3,039**

Hospitalizations with URINARY SYSTEM as the Primary Procedure By Hospital Service Area, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	791	5.1	57	$18,078	2.7	6.2	$3,545
Bennington	582	4.9	57	$16,112	3.5	5.5	$3,288
Brattleboro	363	4.2	62	$11,720	2.0	5.4	$2,790
Burlington	1,906	5.5	53	$16,428	2.7	5.4	$2,987
Middlebury	593	5.8	66	$13,801	2.3	6.8	$2,379
Morrisville	783	4.8	68	$10,341	1.6	6.0	$2,154
Newport	373	4.5	54	$18,334	2.5	6.6	$4,074
Randolph	208	4.3	60	$16,442	2.3	5.7	$3,824
Rutland	1,064	5.1	56	$16,166	2.4	5.2	$3,170
Springfield	713	4.5	65	$12,459	1.6	7.0	$2,769
St. Albans	455	5.1	55	$15,685	2.6	5.2	$3,075
St. Johnsbury	347	4.9	57	$17,301	2.5	6.5	$3,531
White River Jct.	604	5.0	59	$17,311	2.2	6.2	$3,462
Vermont Total	**8,782**	**5.0**	**58**	**$15,425**	**2.4**	**5.9**	**$3,085**

Hospitalizations with MISCELLANEOUS as the Primary Procedure By Hospital Service Area, 1997-2006	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	8,054	5.6	51	$12,034	1.9	6.5	$2,149
Bennington	13,408	4.5	63	$9,973	2.1	5.9	$2,216
Brattleboro	9,358	5.2	60	$8,217	1.9	5.6	$1,580
Burlington	13,155	7.0	55	$14,642	1.9	7.1	$2,092
Middlebury	4,160	5.3	62	$10,848	1.8	6.6	$2,047
Morrisville	2,636	5.2	55	$10,737	1.8	5.8	$2,065
Newport	3,006	5.4	51	$14,033	1.8	8.1	$2,599
Randolph	1,414	6.1	56	$14,059	1.9	6.7	$2,305
Rutland	9,464	6.4	62	$14,135	2.0	6.9	$2,209
Springfield	5,048	6.0	47	$11,712	2.0	6.1	$1,952
St. Albans	3,158	6.7	56	$15,382	1.9	6.6	$2,296
St. Johnsbury	4,744	4.5	54	$9,322	2.0	6.3	$2,072
White River Jct.	3,785	6.5	49	$15,772	1.9	6.8	$2,426
Vermont Total	**81,390**	**5.7**	**57**	**$12,054**	**1.9**	**6.5**	**$2,115**

Diagnosis Data
1997 - 2006

Average Number of Diagnoses Per Hospitalization By Hospital Service Area and Hospital



Note: Data Age and Severity Adjusted, 1997-2006 Combined

Average Number of Diagnosis per Hospitalization by Year and Hospital

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Brattleboro Memorial Hospital	3.7	3.3	3.7	3.7	4.0	3.4	4.3	4.6	4.4	4.3
Central Vermont	5.1	4.9	5.9	5.9	5.2	5.4	5.4	5.4	5.5	5.6
Copley Hospital	3.7	3.6	3.4	3.6	4.5	5.0	4.7	4.8	4.9	5.0
Fletcher Allen Health Care	4.7	4.7	4.6	4.6	4.9	5.3	5.9	6.1	6.6	7.1
Gifford Memorial Hospital	5.1	4.5	4.9	4.6	4.3	4.4	4.1	4.4	4.9	5.6
Grace Cottage	6.0	5.5	6.0	6.2	5.6	5.8	6.8	6.9	7.3	7.5
MT. Ascutney	4.9	5.1	5.0	5.7	7.0	6.9	7.4	7.1	7.4	8.2
North Country Hospital	6.0	6.1	6.8	9.8	9.2	9.2	8.7	8.2	8.6	9.0
Northeastern Vermont Regional Hospital	4.8	4.5	4.9	4.7	5.1	5.1	5.5	5.7	6.1	5.9
Northwestern Medical Center	3.6	3.7	3.6	3.9	4.0	4.1	4.7	5.1	5.2	5.2
Porter Hospital	4.7	4.5	4.5	4.6	4.9	5.3	4.6	4.6	4.5	4.4
Rutland Regional Medical Center	4.4	4.3	4.6	5.5	6.0	6.3	6.5	7.0	6.9	7.3
Southwestern Medical Center	4.6	4.3	4.1	4.4	4.3	4.9	5.4	5.5	6.0	6.0
Springfield Hospital	6.0	5.6	5.7	5.7	5.3	5.8	6.2	6.2	6.7	6.6
Veteran's Administration Center	3.5	4.3	4.2	4.4	5.4	5.4	5.6	5.4	5.9	6.0
NH-Dartmouth Hitchcock Hospital	6.3	6.3	6.5	6.8	7.2	7.3	7.4	7.4	7.5	7.8
NY-Albany Medical Center	5.6	5.8	5.5	6.1	6.4	7.6	7.4	7.2	7.6	8.3
Vermont Total	**4.9**	**4.8**	**4.9**	**5.2**	**5.4**	**5.6**	**6.0**	**6.1**	**6.4**	**6.7**

Average Number of Diagnosis per Hospitalization by Year and HSA

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Barre	5.1	5.0	5.7	5.7	5.3	5.6	5.7	5.7	5.9	6.2
Bennington	4.7	4.3	4.3	4.6	4.5	5.2	5.6	5.8	6.2	6.3
Brattleboro	4.4	4.2	4.5	4.6	4.8	4.4	5.2	5.5	5.4	5.4
Burlington	4.5	4.5	4.4	4.5	4.7	5.1	5.6	5.8	6.3	6.8
Middlebury	4.8	4.7	4.8	4.8	5.1	5.6	5.4	5.6	5.7	5.9
Morrisville	4.3	4.2	4.1	4.3	4.9	5.4	5.4	5.5	5.8	6.2
Newport	5.6	5.9	6.1	8.3	8.1	8.1	7.8	7.5	7.9	8.4
Randolph	5.6	5.1	5.5	5.5	5.6	5.8	5.7	5.8	6.1	6.8
Rutland	4.7	4.6	4.9	5.6	6.0	6.4	6.6	7.0	7.1	7.3
St. Albans	4.2	4.2	4.2	4.3	4.6	4.8	5.4	5.8	6.1	6.2
St. Johnsbury	5.3	5.2	5.5	5.5	5.9	5.9	6.2	6.4	6.6	6.7
Springfield	5.8	5.6	5.8	6.0	5.8	6.2	6.6	6.5	6.9	7.0
White River Jct.	5.7	5.7	5.8	6.1	6.6	6.5	6.7	6.7	7.0	7.4
Vermont Total	**4.9**	**4.8**	**4.9**	**5.2**	**5.4**	**5.6**	**6.0**	**6.1**	**6.4**	**6.7**

Average Number of Diagnosis per Hospitalization by Year and Insurer

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
BLUE CROSS	4.0	4.0	3.9	4.1	4.2	4.3	4.5	4.7	4.9	5.1
HMO	N/A	3.7	3.6	3.6	3.8	4.1	4.3	4.5	4.7	5.0
MEDICARE	6.5	6.3	6.5	7.0	7.2	7.5	8.0	8.3	8.6	8.9
MEDICAID	3.8	3.7	3.8	3.9	3.8	4.3	4.5	4.6	4.9	5.0
SELF PAY	4.1	3.3	3.3	3.2	3.6	4.2	4.3	4.4	4.6	4.9
WORKERS COMP	3.7	3.1	3.2	3.6	3.7	3.8	4.3	4.5	4.7	5.5
OTHER INSUR	3.7	3.7	3.8	4.0	4.2	4.5	4.7	4.9	5.1	5.3
OTHER GOVT	4.5	4.4	4.3	4.5	5.4	5.4	5.8	5.5	6.0	6.3
Vermont Total	**4.9**	**4.8**	**4.9**	**5.2**	**5.4**	**5.6**	**6.0**	**6.1**	**6.4**	**6.7**

Average Number of Diagnosis per Hospitalization by Year and Age

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Younger than 15	2.2	2.1	2.1	2.2	2.2	2.3	2.4	2.6	2.6	2.8
15-44	3.9	3.9	3.9	4.0	4.1	4.4	4.6	4.7	5.0	5.1
45-64	5.2	5.1	5.2	5.5	5.7	6.1	6.4	6.6	6.9	7.3
65+	6.4	6.3	6.5	7.0	7.2	7.5	8.0	8.2	8.5	8.8
Vermont Total	**4.9**	**4.8**	**4.9**	**5.2**	**5.4**	**5.6**	**6.0**	**6.1**	**6.4**	**6.7**

Specific Primary MDC Diagnosis Data by Hospital

BRAIN and CNS DX Primary MDC Code, 1997 – 2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Average Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	783	5.5	67	$7,297	2.1	2.5	$1,327
Central Vermont	1,186	4.8	68	$8,814	1.8	2.9	$1,836
Copley Hospital	629	4.4	71	$6,616	1.6	2.7	$1,504
Fletcher Allen Health Care	9,920	6.4	55	$17,664	2.2	2.7	$2,760
Gifford Memorial Hospital	365	3.8	70	$7,586	1.3	2.8	$1,996
Grace Cottage	178	3.1	77	$3,572	2.7	2.9	$1,152
MT. Ascutney	215	3.8	74	$5,536	1.1	2.9	$1,457
North Country Hospital	941	2.8	66	$8,323	1.4	3.5	$2,972
Northeastern Vermont Regional Hospital	652	3.6	67	$6,621	1.8	2.9	$1,839
Northwestern Medical Center	887	4.4	71	$6,717	1.3	2.7	$1,527
Porter Hospital	441	5.7	72	$8,998	2.0	2.7	$1,579
Rutland Regional Medical Center	3,247	5.1	67	$10,714	1.8	2.8	$2,101
Southwestern Medical Center	1,843	3.8	67	$8,366	2.7	2.6	$2,202
Springfield Hospital	776	4.0	69	$7,158	1.3	3.1	$1,790
Veteran's Administration Center	1,088	6.8	67	n/a	1.5	2.4	n/a
NH-Dartmouth Hitchcock Hospital	6,820	5.5	53	$19,126	2.1	3.0	$3,477
NY-Albany Medical Center	352	10.5	49	$44,254	2.8	2.8	$4,215
Vermont Total	**30,323**	**5.5**	**60**	**$14,250**	**2.0**	**2.8**	**$2,608**

BURNS DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	10	15.0	51	$11,801	2.0	2.4	$787
Central Vermont	7	2.4	47	$3,578	1.1	2.7	$1,491
Copley Hospital	3	6.3	52	$6,177	1.0	3.0	$981
Fletcher Allen Health Care	301	8.3	33	$20,232	2.5	2.7	$2,438
Gifford Memorial Hospital	2	2.5	53	$4,094	1.0	3.0	$1,638
Grace Cottage	0	--	--	--	--	--	--
MT. Ascutney	4	2.8	51	$2,689	1.0	2.5	$960
North Country Hospital	13	4.5	31	$6,343	1.5	2.9	$1,410
Northeastern Vermont Regional Hospital	7	4.3	45	$7,323	1.7	3.1	$1,703
Northwestern Medical Center	5	4.2	47	$5,925	1.6	2.4	$1,411
Porter Hospital	8	4.9	36	$5,955	1.9	2.3	$1,215
Rutland Regional Medical Center	37	7.2	34	$10,118	2.2	2.4	$1,405
Southwestern Medical Center	5	2.4	59	$3,509	2.0	3.2	$1,462
Springfield Hospital	9	3.1	32	$4,605	1.3	2.6	$1,486
Veteran's Administration Center	7	3.4	60	n/a	1.0	2.1	n/a
NH-Dartmouth Hitchcock Hospital	22	5.3	33	$8,538	2.1	3.2	$1,611
NY-Albany Medical Center	2	8.5	20	$7,716	3.0	2.5	$908
Vermont Total	**442**	**7.5**	**35**	**$16,125**	**2.3**	**2.7**	**$2,151**

DIGESTIVE DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	2,152	5	59	$9,075	2.2	2.2	$1,815
Central Vermont	3,576	5.1	60	$12,054	2.3	2.6	$2,363
Copley Hospital	1,656	4.1	58	$8,955	2.1	2.4	$2,184
Fletcher Allen Health Care	14,204	5.6	53	$13,620	2.3	2.5	$2,432
Gifford Memorial Hospital	1,097	4.2	61	$11,765	2	2.6	$2,801
Grace Cottage	128	2.6	74	$2,950	2.5	3	$1,134
MT. Ascutney	491	4.4	66	$10,013	1.9	2.8	$2,276
North Country Hospital	2,006	3.8	61	$11,155	2.1	3.3	$2,935
Northeastern Vermont Regional Hospital	2,017	3.6	53	$10,243	2.1	2.6	$2,845
Northwestern Medical Center	2,764	4.6	63	$9,008	2	2.3	$1,958
Porter Hospital	1,605	5	64	$13,323	2.5	2.5	$2,665
Rutland Regional Medical Center	6,040	4.9	60	$12,062	2.1	2.7	$2,462
Southwestern Medical Center	3,940	4.8	62	$10,506	2.4	2.7	$2,189
Springfield Hospital	2,134	4.3	62	$10,700	1.9	2.8	$2,488
Veteran's Administration Center	1,294	5.4	67	n/a	1.6	2.4	n/a
NH-Dartmouth Hitchcock Hospital	5,571	5.9	56	$17,566	2.4	3.1	$2,977
NY-Albany Medical Center	113	7.9	32	$27,231	2.7	2.7	$3,447
Vermont Total	**50,788**	**5.1**	**58**	**$12,350**	**2.2**	**2.6**	**$2,445**

EAR, NOSE, & THROAT DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	245	3.1	49	$5,739	2.1	2.1	$1,851
Central Vermont	276	2.4	49	$6,038	1.8	2.3	$2,516
Copley Hospital	78	3.4	65	$4,352	1.4	2.6	$1,280
Fletcher Allen Health Care	2,465	3.2	37	$10,571	2.4	2.2	$3,303
Gifford Memorial Hospital	97	3.4	66	$5,747	1.2	2.7	$1,691
Grace Cottage	23	2.6	76	$2,959	2.3	2.8	$1,138
MT. Ascutney	33	2.7	63	$3,869	1.2	2.5	$1,433
North Country Hospital	165	2.1	55	$4,982	1.3	3.3	$2,372
Northeastern Vermont Regional Hospital	209	2.2	27	$3,375	1.8	2	$1,534
Northwestern Medical Center	187	2.4	51	$4,940	1.6	2.3	$2,058
Porter Hospital	96	2.8	56	$6,380	1.7	2.2	$2,278
Rutland Regional Medical Center	676	3.4	48	$7,385	1.9	2.4	$2,172
Southwestern Medical Center	332	2.8	55	$5,594	2	2.4	$1,998
Springfield Hospital	190	2.7	58	$5,477	1.3	2.7	$2,029
Veteran's Administration Center	243	3.4	63	n/a	1.7	2.2	n/a
NH-Dartmouth Hitchcock Hospital	1,544	3.6	40	$12,495	2.5	2.6	$3,471
NY-Albany Medical Center	51	3.8	24	$13,201	2.7	2.5	$3,474
Vermont Total	**6,910**	**3.2**	**44**	**$8,956**	**2.2**	**2.4**	**$2,826**

ENDOCRINE DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	626	5	61	$7,116	1.9	2.6	$1,423
Central Vermont	948	3.8	57	$6,650	1.5	2.8	$1,750
Copley Hospital	340	4.2	62	$6,106	1.6	2.8	$1,454
Fletcher Allen Health Care	4,328	4.9	50	$11,057	2	2.9	$2,256
Gifford Memorial Hospital	347	3.6	68	$6,385	1.3	2.9	$1,774
Grace Cottage	133	2.9	73	$3,400	2.7	3.1	$1,172
MT. Ascutney	136	3.4	63	$5,364	1.2	3.1	$1,578
North Country Hospital	589	3.2	58	$7,099	1.3	3.5	$2,218
Northeastern Vermont Regional Hospital	402	3.6	54	$7,006	1.6	3.1	$1,946
Northwestern Medical Center	533	4	67	$6,025	1.2	2.7	$1,506
Porter Hospital	405	4.4	65	$8,079	1.8	2.7	$1,836
Rutland Regional Medical Center	1,754	4.6	63	$8,526	1.5	3.1	$1,854
Southwestern Medical Center	1,061	3.9	62	$6,971	1.8	2.8	$1,787
Springfield Hospital	388	3.7	59	$6,751	1.2	3.1	$1,825
Veteran's Administration Center	553	6.7	68	n/a	1.4	2.8	n/a
NH-Dartmouth Hitchcock Hospital	2,252	4.4	47	$13,162	1.9	3.2	$2,991
NY-Albany Medical Center	40	3.3	35	$11,033	2.2	2.4	$3,343
Vermont Total	**14,835**	**4.5**	**56**	**$9,104**	**1.7**	**3.0**	**$2,043**

EYE DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	13	2.8	63	$4,646	1.7	2.2	$1,659
Central Vermont	12	4.0	47	$5,892	1.8	2.6	$1,473
Copley Hospital	4	4.3	32	$5,553	1.0	2.0	$1,291
Fletcher Allen Health Care	346	2.9	46	$9,084	2.4	2.3	$3,132
Gifford Memorial Hospital	4	2.3	64	$7,851	2.0	2.3	$3,413
Grace Cottage	0	--	--	--	--	--	--
MT. Ascutney	2	11.5	66	$9,576	1.0	3.0	$833
North Country Hospital	35	2.4	49	$4,920	1.5	3.0	$2,050
Northeastern Vermont Regional Hospital	19	2.2	27	$4,745	1.5	1.9	$2,157
Northwestern Medical Center	12	4.1	55	$6,446	1.5	2.7	$1,572
Porter Hospital	12	3.0	44	$4,631	1.1	2.4	$1,544
Rutland Regional Medical Center	49	3.3	51	$6,289	1.8	2.3	$1,906
Southwestern Medical Center	48	3.7	48	$7,028	2.2	2.4	$1,899
Springfield Hospital	17	2.5	60	$4,580	1.3	2.6	$1,832
Veteran's Administration Center	53	3.3	72	n/a	1.2	2.3	n/a
NH-Dartmouth Hitchcock Hospital	246	2.3	49	$7,640	2.6	2.6	$3,322
NY-Albany Medical Center	3	4.3	27	$16,885	3.0	3.0	$3,927
Vermont Total	**875**	**2.8**	**49**	**$7,553**	**2.2**	**2.4**	**$2,661**

FEMALE REPRODUCTIVE DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	581	2.5	48	$6,809	2.5	1.9	$2,724
Central Vermont	990	2.4	46	$6,934	2.7	2.3	$2,889
Copley Hospital	298	2.4	43	$10,260	2.8	2.1	$4,275
Fletcher Allen Health Care	5,472	3	50	$9,615	2.9	2.3	$3,205
Gifford Memorial Hospital	323	2.5	46	$14,411	2.6	2.2	$5,764
Grace Cottage	9	3.9	35	$3,924	2.3	2.2	$1,006
MT. Ascutney	100	2.6	52	$10,032	2.8	2.6	$3,858
North Country Hospital	535	2.3	46	$11,127	2.8	2.9	$4,838
Northeastern Vermont Regional Hospital	573	2.4	45	$10,990	2.7	2.4	$4,579
Northwestern Medical Center	614	2.5	50	$7,363	2.7	2	$2,945
Porter Hospital	519	2.6	47	$9,919	3	2.1	$3,815
Rutland Regional Medical Center	1,807	2.4	47	$8,702	2.7	2.2	$3,626
Southwestern Medical Center	811	2.6	46	$8,792	2.7	2	$3,382
Springfield Hospital	726	2	47	$8,709	2.7	2.7	$4,354
Veteran's Administration Center	14	3.2	52	n/a	2.1	1.9	n/a
NH-Dartmouth Hitchcock Hospital	1,978	3.5	53	$12,693	3	2.8	$3,627
NY-Albany Medical Center	44	4.2	61	$13,468	3.5	3.1	$3,207
Vermont Total	**15,394**	**2.8**	**49**	**$9,688**	**2.8**	**2.3**	**$3,501**

HEART AND CIRCULATORY DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	2,707	3.8	71	$7,437	2.2	2.5	$1,957
Central Vermont	4,449	3.4	72	$8,859	1.6	2.9	$2,606
Copley Hospital	1,783	3.3	71	$5,579	1.7	2.6	$1,691
Fletcher Allen Health Care	33,508	4.9	65	$19,223	2.7	3.1	$3,923
Gifford Memorial Hospital	1,329	3.2	74	$6,411	1.3	2.9	$2,004
Grace Cottage	304	2.8	79	$3,328	2.6	3.1	$1,189
MT. Ascutney	670	3.3	75	$6,109	1.1	3	$1,851
North Country Hospital	3,372	2.5	70	$6,952	1.2	3.7	$2,781
Northeastern Vermont Regional Hospital	2,246	3.2	72	$7,910	1.9	3.1	$2,472
Northwestern Medical Center	3,682	3.2	70	$6,234	1.2	2.6	$1,948
Porter Hospital	2,100	3.4	71	$7,026	2.2	2.8	$2,067
Rutland Regional Medical Center	8,526	3.9	71	$9,778	1.6	3	$2,507
Southwestern Medical Center	6,285	3.5	71	$8,414	2.2	2.7	$2,404
Springfield Hospital	3,698	2.9	71	$6,802	1.2	3.1	$2,346
Veteran's Administration Center	2,894	4.5	68	n/a	1.4	2.5	n/a
NH-Dartmouth Hitchcock Hospital	17,534	4.8	66	$24,537	3	3.3	$5,112
NY-Albany Medical Center	1,402	7.2	63	$45,688	3.8	3.2	$6,346
Vermont Total	**96,489**	**4.3**	**68**	**$15,296**	**2.3**	**3.0**	**$3,595**

H.I.V. DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	9	3.7	43	$4,749	1.7	2.3	$1,283
Central Vermont	12	4.0	42	$8,457	2.1	2.9	$2,114
Copley Hospital	2	3.0	34	$4,206	1.0	3.0	$1,402
Fletcher Allen Health Care	147	11.2	42	$22,212	2.1	3.2	$1,983
Gifford Memorial Hospital	0	--	--	--	--	--	--
Grace Cottage	2	3.0	32	$3,140	2.0	2.5	$1,047
MT. Ascutney	0	--	--	--	--	--	--
North Country Hospital	5	4.2	57	$10,534	1.2	3.4	$2,508
Northeastern Vermont Regional Hospital	0	--	--	--	--	--	--
Northwestern Medical Center	0	--	--	--	--	--	--
Porter Hospital	0	--	--	--	--	--	--
Rutland Regional Medical Center	5	13.4	37	$34,819	2.6	3.0	$2,598
Southwestern Medical Center	22	4.8	39	$9,869	2.0	2.8	$2,056
Springfield Hospital	4	3.3	28	$3,790	1.3	2.3	$1,148
Veteran's Administration Center	16	7.4	46	n/a	1.1	2.7	n/a
NH-Dartmouth Hitchcock Hospital	103	8.6	36	$22,283	2.0	3.5	$2,591
NY-Albany Medical Center	5	13.6	55	$43,183	3.0	4.0	$3,175
Vermont Total	**334**	**9.0**	**40**	**$19,222**	**2.0**	**3.2**	**$2,127**

INFECTION DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	298	6.1	57	$8,554	1.9	2.6	$1,402
Central Vermont	586	5.2	60	$10,410	1.8	2.9	$2,002
Copley Hospital	221	5.7	68	$9,174	1.8	2.8	$1,610
Fletcher Allen Health Care	3,021	7.9	53	$20,076	2.3	3.1	$2,541
Gifford Memorial Hospital	151	4.0	65	$8,092	1.4	3.0	$2,023
Grace Cottage	33	2.9	64	$3,582	2.8	3.0	$1,235
MT. Ascutney	96	5.3	66	$9,617	1.5	3.1	$1,815
North Country Hospital	453	3.7	63	$10,056	1.5	3.8	$2,718
Northeastern Vermont Regional Hospital	424	3.8	53	$7,590	1.9	3.0	$1,997
Northwestern Medical Center	356	5.0	62	$8,456	1.6	2.6	$1,691
Porter Hospital	203	5.2	61	$10,144	1.8	2.6	$1,951
Rutland Regional Medical Center	1,109	6.2	58	$15,952	1.8	3.0	$2,573
Southwestern Medical Center	737	5.4	62	$11,823	2.3	2.9	$2,189
Springfield Hospital	487	4.8	63	$9,839	1.5	3.1	$2,050
Veteran's Administration Center	173	6.6	69	n/a	1.4	2.6	n/a
NH-Dartmouth Hitchcock Hospital	1,225	7.5	53	$23,118	2.3	3.2	$3,082
NY-Albany Medical Center	38	12.3	52	$40,526	2.9	3.2	$3,295
Vermont Total	**9,611**	**6.4**	**57**	**$15,547**	**2.0**	**3.0**	**$2,437**

INJURY, TOXIC EFFECT DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	402	2.5	45	$5,022	2.1	2.4	$2,009
Central Vermont	641	2.9	44	$6,464	1.8	2.8	$2,229
Copley Hospital	156	3.4	57	$7,178	1.9	2.4	$2,111
Fletcher Allen Health Care	2,612	4.6	44	$12,143	2.1	2.8	$2,640
Gifford Memorial Hospital	73	3.6	53	$8,743	1.7	2.7	$2,429
Grace Cottage	16	2.4	72	$2,736	2.4	2.8	$1,140
MT. Ascutney	55	2.9	52	$6,166	1.5	2.6	$2,126
North Country Hospital	344	2.5	43	$7,254	1.7	3.2	$2,902
Northeastern Vermont Regional Hospital	182	2.2	42	$5,858	1.9	2.8	$2,663
Northwestern Medical Center	252	2.8	47	$5,961	1.6	2.5	$2,129
Porter Hospital	197	3.0	55	$6,681	2.1	2.6	$2,227
Rutland Regional Medical Center	695	3.8	45	$9,261	2.0	2.6	$2,437
Southwestern Medical Center	512	3.0	48	$7,590	2.0	2.7	$2,530
Springfield Hospital	283	2.7	44	$6,573	1.6	2.7	$2,434
Veteran's Administration Center	241	4.8	65	n/a	1.4	2.5	n/a
NH-Dartmouth Hitchcock Hospital	1,163	5.1	47	$17,352	2.4	3.0	$3,402
NY-Albany Medical Center	60	4.6	38	$15,188	2.5	2.8	$3,302
Vermont Total	**7,884**	**3.9**	**46**	**$10,269**	**2.0**	**2.8**	**$2,634**

KIDNEY & URINARY DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	622	4.3	65	$6,597	2	2.4	$1,534
Central Vermont	960	4	66	$8,208	1.9	2.9	$2,052
Copley Hospital	371	3.9	65	$6,243	1.5	2.7	$1,601
Fletcher Allen Health Care	4,998	6	58	$15,172	2.2	3	$2,529
Gifford Memorial Hospital	375	3.5	65	$8,354	1.6	2.8	$2,387
Grace Cottage	92	2.8	72	$3,162	2.6	3	$1,129
MT. Ascutney	180	3.6	70	$6,126	1.3	2.9	$1,702
North Country Hospital	611	3.2	65	$8,350	1.4	3.6	$2,609
Northeastern Vermont Regional Hospital	491	3.3	55	$7,614	1.7	2.9	$2,307
Northwestern Medical Center	693	4.2	70	$6,845	1.4	2.7	$1,630
Porter Hospital	419	4.4	71	$7,997	1.7	2.8	$1,818
Rutland Regional Medical Center	1,951	4.2	63	$9,507	1.8	2.9	$2,264
Southwestern Medical Center	1,207	4.3	66	$9,595	2.3	2.8	$2,231
Springfield Hospital	576	3.6	67	$7,606	1.5	3.1	$2,113
Veteran's Administration Center	748	4.6	70	n/a	1.6	2.4	n/a
NH-Dartmouth Hitchcock Hospital	2,461	5.6	57	$18,760	2.4	3.2	$3,350
NY-Albany Medical Center	74	5.3	47	$23,411	2.8	2.7	$4,417
Vermont Total	**16,829**	**4.8**	**62**	**$11,807**	**2.0**	**2.9**	**$2,436**

LIVER & PANCREAS DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	692	4.9	56	$9,126	2.2	2.2	$1,863
Central Vermont	1,046	4.7	59	$10,638	2.2	2.7	$2,263
Copley Hospital	462	4.3	55	$9,624	1.9	2.5	$2,238
Fletcher Allen Health Care	3,976	6.2	54	$16,506	2.5	2.8	$2,662
Gifford Memorial Hospital	220	3.6	59	$11,621	1.9	2.5	$3,228
Grace Cottage	60	3.2	59	$3,673	2.6	2.9	$1,148
MT. Ascutney	141	4.1	61	$10,882	1.8	2.8	$2,654
North Country Hospital	548	3.5	59	$10,687	1.8	3.3	$3,053
Northeastern Vermont Regional Hospital	459	3.6	57	$12,056	2.2	2.6	$3,349
Northwestern Medical Center	659	4.2	58	$9,044	1.8	2.3	$2,153
Porter Hospital	317	4.7	61	$12,667	2.6	2.4	$2,695
Rutland Regional Medical Center	1,729	5.1	58	$13,015	2.1	2.7	$2,552
Southwestern Medical Center	1,009	4.6	59	$11,716	2.8	2.7	$2,547
Springfield Hospital	423	4.3	61	$10,551	1.7	2.9	$2,454
Veteran's Administration Center	394	6.4	63	n/a	1.6	2.4	n/a
NH-Dartmouth Hitchcock Hospital	1,844	6.2	57	$20,774	2.5	3.2	$3,351
NY-Albany Medical Center	19	6.4	59	$27,902	3.1	3.3	$4,360
Vermont Total	**13,998**	**5.3**	**57**	**$13,822**	**2.3**	**2.8**	**$2,626**

LYMPHATIC DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	108	6.9	69	$10,017	2.3	2.5	$1,452
Central Vermont	161	6.8	68	$16,388	2.5	2.8	$2,410
Copley Hospital	42	5.1	71	$8,408	2.2	2.8	$1,649
Fletcher Allen Health Care	2,526	6.1	41	$16,902	2.5	2.5	$2,771
Gifford Memorial Hospital	38	4.3	72	$7,884	1.7	2.9	$1,833
Grace Cottage	6	2.5	76	$3,987	2.8	2.8	$1,595
MT. Ascutney	11	4.3	70	$6,117	1.1	3.1	$1,423
North Country Hospital	32	4.3	67	$12,605	2.1	3.5	$2,931
Northeastern Vermont Regional Hospital	53	4.5	68	$8,756	2.1	2.9	$1,946
Northwestern Medical Center	56	6.0	70	$11,083	1.7	2.6	$1,847
Porter Hospital	19	6.6	73	$13,348	2.9	3.0	$2,022
Rutland Regional Medical Center	335	5.4	65	$14,878	2.3	2.6	$2,755
Southwestern Medical Center	158	5.5	66	$10,666	2.5	2.6	$1,939
Springfield Hospital	40	5.1	75	$11,059	2.0	3.2	$2,168
Veteran's Administration Center	278	7.0	68	n/a	1.8	2.4	n/a
NH-Dartmouth Hitchcock Hospital	1,939	7.5	50	$28,111	2.6	3.1	$3,748
NY-Albany Medical Center	40	5.6	31	$17,321	2.7	2.5	$3,096
Vermont Total	**5,842**	**6.5**	**50**	**$19,718**	**2.5**	**2.7**	**$3,022**

MALE REPRODUCTIVE DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	184	3.2	72	$7,437	2.3	2.2	$2,324
Central Vermont	304	3.4	68	$8,625	2.5	2.6	$2,537
Copley Hospital	19	4.8	67	$9,223	2.2	2.7	$1,922
Fletcher Allen Health Care	1,558	3.1	64	$9,172	2.6	2.3	$2,959
Gifford Memorial Hospital	72	3.1	69	$18,188	2.1	2.5	$5,867
Grace Cottage	5	2.6	71	$2,461	2.6	2.8	$946
MT. Ascutney	62	2.5	72	$9,048	2.4	2.4	$3,619
North Country Hospital	105	3.3	67	$20,369	2.5	3.4	$6,172
Northeastern Vermont Regional Hospital	54	3.4	65	$10,853	2.2	2.8	$3,192
Northwestern Medical Center	54	3.1	62	$8,001	2.3	2.1	$2,581
Porter Hospital	75	2.3	67	$12,027	2.5	2.1	$5,229
Rutland Regional Medical Center	730	2.9	68	$9,909	2.5	2.3	$3,417
Southwestern Medical Center	142	3.2	65	$8,843	2.7	2.3	$2,764
Springfield Hospital	91	2.8	66	$8,949	2.2	2.6	$3,196
Veteran's Administration Center	315	3.8	68	n/a	2.1	1.9	n/a
NH-Dartmouth Hitchcock Hospital	546	2.2	59	$13,342	2.4	2.6	$6,064
NY-Albany Medical Center	7	2.6	46	$10,054	3.1	2.1	$3,867
Vermont Total	**4,323**	**3.0**	**65**	**$10,026**	**2.5**	**2.4**	**$3,322**

MENTAL ILLNESS DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	109	6.0	70	$6,642	1.8	2.5	$1,107
Central Vermont	4,751	7.8	41	$6,629	1.2	2.4	$850
Copley Hospital	90	4.5	73	$5,014	1.2	2.7	$1,114
Fletcher Allen Health Care	7,389	9.8	43	$8,922	1.2	2.3	$910
Gifford Memorial Hospital	45	4.0	81	$6,319	1.2	3.0	$1,580
Grace Cottage	68	3.0	70	$2,907	2.1	2.9	$969
MT. Ascutney	30	4.6	77	$5,796	1.0	3.1	$1,260
North Country Hospital	192	2.7	60	$4,062	1.1	3.4	$1,504
Northeastern Vermont Regional Hospital	90	3.0	63	$3,897	1.3	2.8	$1,299
Northwestern Medical Center	109	4.2	65	$5,706	1.1	2.7	$1,359
Porter Hospital	49	6.8	70	$8,506	1.6	2.7	$1,251
Rutland Regional Medical Center	4,356	6.0	43	$5,404	1.1	2.8	$901
Southwestern Medical Center	212	4.4	61	$6,207	1.9	2.6	$1,411
Springfield Hospital	4,670	7.6	38	$5,638	2.6	2.6	$742
Veteran's Administration Center	1,732	7.6	53	n/a	1.1	2.4	n/a
NH-Dartmouth Hitchcock Hospital	227	4.4	46	$8,287	1.6	3.0	$1,883
NY-Albany Medical Center	19	17.2	40	$18,073	1.6	2.5	$1,051
Vermont Total	**24,138**	**7.9**	**43**	**$6,761**	**1.5**	**2.5**	**$860**

MUSCULOSKELETAL DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	2,573	4.9	64	$12,168	2.2	2.1	$2,483
Central Vermont	3,030	4.4	67	$15,594	2.4	2.6	$3,544
Copley Hospital	1,809	4.9	64	$19,175	2.5	2.4	$3,913
Fletcher Allen Health Care	14,825	5.1	57	$18,654	2.5	2.4	$3,658
Gifford Memorial Hospital	776	4.2	70	$14,592	2	2.7	$3,474
Grace Cottage	131	3.5	78	$3,810	2.7	2.9	$1,089
MT. Ascutney	503	4.4	72	$18,765	2	2.8	$4,265
North Country Hospital	932	3.8	68	$13,058	2.1	3.5	$3,436
Northeastern Vermont Regional Hospital	1,570	4.4	66	$16,958	2.3	2.7	$3,854
Northwestern Medical Center	2,314	4.1	67	$12,968	2.2	2.5	$3,163
Porter Hospital	1,284	5	68	$20,758	2.6	2.4	$4,152
Rutland Regional Medical Center	6,638	4.6	65	$16,402	2.3	2.5	$3,566
Southwestern Medical Center	3,358	4.1	66	$14,702	2.5	2.5	$3,586
Springfield Hospital	1,483	4.1	69	$18,018	2	2.8	$4,395
Veteran's Administration Center	930	8.6	68	n/a	1.7	2.3	n/a
NH-Dartmouth Hitchcock Hospital	8,729	4.5	56	$19,371	2.5	2.8	$4,305
NY-Albany Medical Center	143	7	45	$29,387	2.9	2.7	$4,198
Vermont Total	**51,028**	**4.7**	**62**	**$17,134**	**2.4**	**2.5**	**$3,622**

NEONATAL DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	2,844	2.4	<1	$1,571	1.4	1.4	$655
Central Vermont	4,421	2.1	<1	$1,273	1.8	1.6	$606
Copley Hospital	2,706	2.0	<1	$1,465	1.4	1.5	$732
Fletcher Allen Health Care	22,056	3.9	<1	$6,178	1.5	1.7	$1,584
Gifford Memorial Hospital	2,785	2.0	<1	$1,212	1.1	1.6	$606
Grace Cottage	96	1.5	<1	$580	1.3	1.3	$387
MT. Ascutney	2	4.5	<1	$4,228	1.0	1.5	$940
North Country Hospital	2,194	2.5	<1	$2,622	1.5	1.9	$1,049
Northeastern Vermont Regional Hospital	2,554	2.0	<1	$1,398	1.5	1.4	$699
Northwestern Medical Center	4,683	2.0	<1	$1,288	1.5	1.3	$644
Porter Hospital	2,476	1.9	<1	$1,210	1.4	1.3	$637
Rutland Regional Medical Center	5,472	2.2	<1	$1,312	1.5	1.3	$596
Southwestern Medical Center	3,433	2.2	<1	$1,461	1.5	1.4	$664
Springfield Hospital	2,026	2.1	<1	$1,675	1.4	1.7	$798
Veteran's Administration Center	0	--	--	--	--	--	--
NH-Dartmouth Hitchcock Hospital	4,603	5.4	<1	$11,633	1.6	2.1	$2,154
NY-Albany Medical Center	195	14.3	<1	$45,274	2.9	2.5	$3,166
Vermont Total	**62,546**	**3.0**	**<1**	**$3,998**	**1.5**	**1.6**	**$1,320**

PREGNANCY & CHILDBIRTH DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	2,841	2.4	28	$4,021	2.2	2.1	$1,675
Central Vermont	4,474	2.1	27	$4,206	2.8	2.3	$2,003
Copley Hospital	2,716	2.1	27	$5,181	2.6	2.2	$2,467
Fletcher Allen Health Care	23,339	2.7	29	$5,181	2.7	2.5	$1,919
Gifford Memorial Hospital	2,830	2.1	29	$5,545	2.5	2.3	$2,641
Grace Cottage	103	1.8	29	$2,038	2.6	2	$1,132
MT. Ascutney	0	--	--	--	--	--	--
North Country Hospital	2,222	2.2	26	$4,359	3	2.5	$1,982
Northeastern Vermont Regional Hospital	2,587	2.2	26	$4,754	2.4	2.3	$2,161
Northwestern Medical Center	4,680	2	27	$3,615	2.6	2.1	$1,808
Porter Hospital	2,498	2	27	$4,737	2.6	2.1	$2,368
Rutland Regional Medical Center	5,559	2.2	27	$4,155	2.6	2.2	$1,889
Southwestern Medical Center	3,557	2.3	27	$3,512	2.6	2.2	$1,527
Springfield Hospital	2,057	2.2	27	$4,396	2.8	2.5	$1,998
Veteran's Administration Center	0	--	--	--	--	--	--
NH-Dartmouth Hitchcock Hospital	4,698	2.8	29	$5,466	2.9	2.8	$1,952
NY-Albany Medical Center	187	4.6	28	$9,053	2.2	2.5	$1,968
Vermont Total	**64,349**	**2.4**	**28**	**$4,722**	**2.7**	**2.4**	**$1,961**

RESPIRATORY DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	1,872	6.2	66	$9,323	2	2.5	$1,504
Central Vermont	4,568	5.2	66	$10,996	1.7	2.9	$2,115
Copley Hospital	1,771	4.5	66	$6,858	1.4	2.6	$1,524
Fletcher Allen Health Care	12,535	7	56	$15,595	1.9	3	$2,228
Gifford Memorial Hospital	1,245	4.3	68	$8,223	1.5	2.8	$1,912
Grace Cottage	467	3.1	73	$3,832	3	2.9	$1,236
MT. Ascutney	647	4.3	75	$7,097	1.1	2.9	$1,651
North Country Hospital	2,733	3.6	63	$9,546	1.3	3.6	$2,652
Northeastern Vermont Regional Hospital	2,115	3.6	50	$7,381	1.8	2.6	$2,050
Northwestern Medical Center	3,341	4.8	69	$7,402	1.3	2.7	$1,542
Porter Hospital	2,055	4.9	70	$8,563	1.7	2.8	$1,748
Rutland Regional Medical Center	7,864	5.6	65	$12,489	1.6	3	$2,230
Southwestern Medical Center	5,493	4.7	66	$9,434	1.8	2.7	$2,007
Springfield Hospital	2,750	4.4	64	$8,808	1.3	3	$2,002
Veteran's Administration Center	1,593	6.6	70	n/a	1.3	2.5	n/a
NH-Dartmouth Hitchcock Hospital	4,757	6.5	57	$20,270	2	3.3	$3,119
NY-Albany Medical Center	81	7.4	31	$24,420	2.6	2.7	$3,300
Vermont Total	**55,887**	**5.5**	**63**	**$11,782**	**1.7**	**2.9**	**$2,136**

SKIN AND BREAST DX Primary MDC Code 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	400	5.2	62	$6,960	1.9	2.3	$1,338
Central Vermont	733	4.1	59	$7,087	1.7	2.7	$1,729
Copley Hospital	398	4.4	64	$7,020	1.7	2.6	$1,595
Fletcher Allen Health Care	3,032	5.4	51	$10,875	2.1	2.6	$2,014
Gifford Memorial Hospital	307	3.9	64	$7,418	1.5	2.7	$1,902
Grace Cottage	106	3.2	64	$3,610	2.6	2.8	$1,128
MT. Ascutney	131	4.3	67	$6,361	1.5	2.9	$1,479
North Country Hospital	359	3.3	61	$6,650	1.4	3.5	$2,015
Northeastern Vermont Regional Hospital	380	3.9	58	$7,017	1.8	2.9	$1,799
Northwestern Medical Center	469	4.4	62	$6,380	1.7	2.4	$1,450
Porter Hospital	434	4.4	58	$8,401	2	2.5	$1,909
Rutland Regional Medical Center	1,280	4.8	61	$8,952	1.7	2.9	$1,865
Southwestern Medical Center	761	4.1	61	$7,368	2.1	2.7	$1,797
Springfield Hospital	431	4.3	59	$7,289	1.5	2.8	$1,695
Veteran's Administration Center	448	7.1	65	n/a	1.4	2.6	n/a
NH-Dartmouth Hitchcock Hospital	1,441	3.9	51	$12,015	2.2	2.9	$3,081
NY-Albany Medical Center	26	4.6	39	$10,605	2.3	2.5	$2,305
Vermont Total	**11,136**	**4.7**	**57**	**$8,909**	**1.9**	**2.7**	**$1,908**

SPLEEN & BLOOD DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	179	3.7	63	$6,698	2.2	2.5	$1,810
Central Vermont	241	4.1	65	$9,418	2.1	2.8	$2,297
Copley Hospital	73	3.9	58	$8,916	2.4	2.6	$2,286
Fletcher Allen Health Care	1,567	5.1	48	$12,737	1.9	2.7	$2,497
Gifford Memorial Hospital	67	4.1	69	$10,236	2.3	2.9	$2,497
Grace Cottage	25	2.9	74	$4,380	3.0	3.0	$1,510
MT. Ascutney	26	3.7	72	$7,554	1.6	3.1	$2,042
North Country Hospital	179	3.1	63	$7,999	1.9	3.6	$2,580
Northeastern Vermont Regional Hospital	102	3.4	59	$7,769	2.1	2.9	$2,285
Northwestern Medical Center	183	3.6	65	$6,875	1.7	2.6	$1,910
Porter Hospital	99	3.8	67	$8,284	2.3	2.7	$2,180
Rutland Regional Medical Center	494	4.3	63	$11,088	2.2	2.8	$2,579
Southwestern Medical Center	269	3.7	66	$8,400	2.0	2.8	$2,270
Springfield Hospital	148	3.9	62	$8,706	1.7	3.0	$2,232
Veteran's Administration Center	179	4.6	71	n/a	1.5	2.6	n/a
NH-Dartmouth Hitchcock Hospital	761	4.8	47	$16,439	1.8	3.1	$3,425
NY-Albany Medical Center	17	6.3	32	$29,375	2.6	2.1	$4,663
Vermont Total	**4,609**	**4.5**	**56**	**$11,547**	**1.9**	**2.8**	**$2,585**

SUBSTANCE ABUSE DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	78	3.6	50	$5,425	2.1	2.5	$1,507
Central Vermont	342	4.0	46	$5,036	1.7	2.6	$1,259
Copley Hospital	61	3.6	48	$3,903	1.3	2.4	$1,084
Fletcher Allen Health Care	874	6.1	47	$7,930	1.8	2.8	$1,300
Gifford Memorial Hospital	29	3.5	53	$5,356	1.5	2.8	$1,530
Grace Cottage	28	3.0	54	$2,479	2.0	2.6	$826
MT. Ascutney	21	3.3	56	$4,456	1.0	2.8	$1,350
North Country Hospital	120	3.0	48	$5,025	1.3	3.3	$1,675
Northeastern Vermont Regional Hospital	85	3.6	53	$5,636	1.6	2.9	$1,566
Northwestern Medical Center	87	3.7	51	$5,227	1.3	2.5	$1,413
Porter Hospital	81	2.9	53	$4,438	1.6	2.6	$1,530
Rutland Regional Medical Center	1,988	3.9	41	$3,847	1.1	2.8	$986
Southwestern Medical Center	247	3.7	52	$5,650	2.3	2.6	$1,527
Springfield Hospital	492	5.0	41	$4,043	2.6	2.7	$809
Veteran's Administration Center	527	4.5	52	n/a	1.4	2.5	n/a
NH-Dartmouth Hitchcock Hospital	89	5.0	51	$9,248	1.9	3.3	$1,850
NY-Albany Medical Center	0	--	--	--	--	--	--
Vermont Total	**5,149**	**4.4**	**45**	**$4,743**	**1.6**	**2.7**	**$1,080**

TRAUMA DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	13	9.4	52	$19,036	2.5	2.6	$2,025
Central Vermont	40	7.0	51	$20,601	2.7	3.2	$2,943
Copley Hospital	27	5.7	43	$14,404	2.5	2.7	$2,527
Fletcher Allen Health Care	624	11.0	36	$42,494	3.2	3.3	$3,863
Gifford Memorial Hospital	8	6.4	62	$20,255	2.0	2.9	$3,165
Grace Cottage	0	--	--	--	--	--	--
MT. Ascutney	2	4.5	87	$10,819	2.5	3.0	$2,404
North Country Hospital	30	4.8	40	$15,952	2.5	3.5	$3,323
Northeastern Vermont Regional Hospital	17	5.6	53	$17,217	2.3	3.4	$3,074
Northwestern Medical Center	32	5.5	54	$17,249	2.7	2.8	$3,136
Porter Hospital	23	4.8	36	$15,654	3.2	2.6	$3,261
Rutland Regional Medical Center	90	8.2	40	$30,059	3.2	3.0	$3,666
Southwestern Medical Center	43	5.9	46	$20,133	3.7	3.3	$3,412
Springfield Hospital	21	4.0	40	$12,172	1.9	2.7	$3,043
Veteran's Administration Center	0	--	--	--	--	--	--
NH-Dartmouth Hitchcock Hospital	399	12.3	38	$55,845	3.1	3.2	$4,540
NY-Albany Medical Center	56	13.6	37	$61,741	3.7	3.5	$4,540
Vermont Total	**1,425**	**10.4**	**39**	**$41,691**	**3.1**	**3.2**	**$4,028**

ALL OTHER DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	80	4.0	74	$5,087	1.6	2.7	$1,272
Central Vermont	48	2.8	70	$4,938	1.5	2.9	$1,764
Copley Hospital	53	3.9	70	$4,899	1.3	2.8	$1,256
Fletcher Allen Health Care	9,719	9.0	58	$10,437	1.2	2.5	$1,160
Gifford Memorial Hospital	36	3.6	78	$6,544	1.2	3.1	$1,818
Grace Cottage	18	3.2	75	$3,909	2.3	3.1	$1,221
MT. Ascutney	24	9.8	76	$8,439	1.0	3.1	$861
North Country Hospital	48	3.2	70	$6,984	1.3	4.0	$2,183
Northeastern Vermont Regional Hospital	53	3.0	65	$7,303	1.8	3.3	$2,434
Northwestern Medical Center	52	3.0	56	$3,406	1.4	2.4	$1,135
Porter Hospital	62	5.8	77	$9,181	1.9	2.8	$1,583
Rutland Regional Medical Center	2,590	11.9	72	$13,334	1.4	3.5	$1,121
Southwestern Medical Center	114	3.0	71	$5,611	1.9	2.8	$1,870
Springfield Hospital	85	3.4	71	$5,611	1.1	3.1	$1,650
Veteran's Administration Center	361	6.5	67	n/a	1.3	2.2	n/a
NH-Dartmouth Hitchcock Hospital	259	2.9	55	$7,402	1.6	2.7	$2,552
NY-Albany Medical Center	42	9.3	59	$13,191	2.8	3.4	$1,418
Vermont Total	**13,644**	**9.1**	**61**	**$10,542**	**1.3**	**2.7**	**$1,157**

Specific Primary MDC Diagnosis Data by HSA

BRAIN AND C.N.S. DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	2,839	5.4	58	$15,440	1.5	6.4	$2,859
Bennington	2,919	5.1	63	$14,041	2.3	5.5	$2,753
Brattleboro	1,745	5.8	61	$12,468	1.5	5.8	$2,150
Burlington	6,746	6.2	58	$16,273	1.6	5.9	$2,625
Middlebury	1,190	6.2	60	$16,615	1.7	5.8	$2,680
Morrisville	1,297	5.4	60	$14,393	1.3	5.7	$2,665
Newport	1,757	4.4	59	$14,067	1.0	7.9	$3,197
Randolph	807	5.2	60	$16,117	1.1	6.2	$3,099
Rutland	4,355	5.6	62	$14,502	1.3	6.4	$2,590
Springfield	1,905	4.8	63	$12,876	1.0	6.9	$2,683
St. Albans	2,073	5.6	58	$14,253	1.3	5.7	$2,545
St. Johnsbury	1,457	4.7	60	$13,133	1.2	6.7	$2,794
White River Jct.	2,959	5.4	60	$15,736	1.0	6.7	$2,914
Vermont Total	**32,049**	**5.5**	**60**	**$14,835**	**1.4**	**6.2**	**$2,695**

BURNS DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	43	6.4	36	$16,665	2.1	6.0	$2,604
Bennington	28	8.3	37	$30,644	3.1	6.0	$3,692
Brattleboro	29	10.4	38	$26,036	2.1	5.7	$2,503
Burlington	145	7.6	33	$23,290	2.1	5.6	$3,064
Middlebury	17	10.0	32	$28,480	2.6	6.2	$2,848
Morrisville	20	15.4	33	$100,419	3.9	5.8	$6,521
Newport	25	4.8	33	$7,806	0.8	5.7	$1,626
Randolph	12	7.7	59	$23,135	2.3	5.9	$3,005
Rutland	63	9.4	35	$18,723	2.0	5.8	$1,992
Springfield	26	6.8	39	$30,564	2.2	6.6	$4,495
St. Albans	31	7.4	38	$20,875	2.7	5.5	$2,821
St. Johnsbury	21	6.8	38	$14,719	1.8	7.1	$2,165
White River Jct.	28	5.9	34	$17,423	1.4	6.3	$2,953
Vermont Total	**488**	**8.0**	**36**	**$24,775**	**2.2**	**5.9**	**$3,094**

DIGESTIVE DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	4,786	5.4	57	$13,583	1.9	6.0	$2,515
Bennington	4,843	5.0	60	$11,719	2.1	5.6	$2,344
Brattleboro	2,762	5.3	59	$11,659	1.7	4.7	$2,200
Burlington	11,385	5.3	54	$12,853	1.8	5.3	$2,425
Middlebury	2,120	5.1	59	$12,973	2.2	5.4	$2,544
Morrisville	2,215	4.9	57	$11,526	1.8	5.0	$2,352
Newport	2,661	4.2	59	$12,007	1.5	8.0	$2,859
Randolph	1,381	4.9	61	$13,089	1.6	6.0	$2,671
Rutland	6,972	5.1	59	$12,926	1.7	6.2	$2,534
Springfield	3,498	4.9	61	$13,040	1.4	6.5	$2,661
St. Albans	3,659	5.2	59	$11,274	1.5	5.1	$2,168
St. Johnsbury	2,686	4.5	56	$13,124	1.5	5.9	$2,916
White River Jct.	4,318	4.7	59	$12,905	1.4	6.4	$2,746
Vermont Total	**53,286**	**5.0**	**58**	**$12,598**	**1.7**	**5.8**	**$2,498**

EAR, NOSE & THROAT DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	645	4.0	45	$11,116	1.8	4.4	$2,779
Bennington	544	2.8	46	$8,271	1.7	4.3	$2,954
Brattleboro	432	3.3	45	$9,216	1.8	4.1	$2,793
Burlington	1,621	3.0	39	$9,781	1.8	3.9	$3,260
Middlebury	260	2.7	40	$10,057	1.7	3.7	$3,725
Morrisville	239	3.2	46	$10,505	1.6	4.2	$3,283
Newport	356	3.0	47	$9,385	1.3	6.3	$3,128
Randolph	254	3.1	48	$8,340	1.7	4.8	$2,690
Rutland	930	3.6	45	$9,623	1.6	4.9	$2,673
Springfield	481	3.3	48	$9,223	1.4	5.3	$2,795
St. Albans	380	3.3	43	$9,969	1.7	4.0	$3,021
St. Johnsbury	372	3.1	35	$9,374	1.6	4.5	$3,024
White River Jct.	794	2.8	42	$9,365	1.8	4.9	$3,345
Vermont Total	**7,308**	**3.2**	**43**	**$9,604**	**1.7**	**4.5**	**$3,015**

ENDOCRINE DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	1,555	4.4	54	$9,823	0.9	6.9	$2,233
Bennington	1,382	4.2	59	$8,367	1.2	6.2	$1,992
Brattleboro	934	4.7	59	$8,998	1.2	5.9	$1,914
Burlington	3,125	4.7	53	$10,108	1.0	6.9	$2,151
Middlebury	570	5.0	56	$10,630	1.2	6.3	$2,126
Morrisville	581	4.1	54	$8,231	1.1	6.3	$2,007
Newport	859	4.0	54	$10,233	0.8	8.5	$2,558
Randolph	425	4.3	63	$8,668	0.6	6.9	$2,016
Rutland	2,193	4.7	59	$10,124	0.8	7.8	$2,154
Springfield	870	4.4	56	$9,564	0.8	7.0	$2,174
St. Albans	965	4.5	56	$8,712	0.7	6.1	$1,936
St. Johnsbury	676	4.3	54	$9,048	0.9	7.3	$2,104
White River Jct.	1,408	4.1	54	$9,499	0.7	7.6	$2,317
Vermont Total	**15,543**	**4.5**	**56**	**$9,558**	**0.9**	**7.0**	**$2,141**

EYE DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	75	3.1	50	$10,595	2.1	4.7	$3,418
Bennington	64	4.0	48	$9,173	1.8	4.7	$2,293
Brattleboro	62	2.4	55	$7,992	2.3	4.4	$3,330
Burlington	194	3.3	50	$8,724	1.4	4.5	$2,644
Middlebury	49	3.5	44	$9,113	1.5	4.8	$2,604
Morrisville	44	2.4	47	$8,298	1.6	4.3	$3,458
Newport	79	2.7	48	$8,314	1.4	5.7	$3,079
Randolph	23	2.1	63	$6,487	1.6	3.8	$3,089
Rutland	95	2.9	50	$7,943	1.6	4.3	$2,739
Springfield	64	2.2	54	$6,182	1.9	5.1	$2,810
St. Albans	49	2.5	44	$6,613	1.6	3.6	$2,645
St. Johnsbury	65	2.1	46	$6,921	1.4	4.7	$3,296
White River Jct.	126	2.4	53	$7,145	1.6	5.1	$2,977
Vermont Total	**989**	**2.8**	**50**	**$8,101**	**1.6**	**4.7**	**$2,868**

FEMALE REPRODUCTIVE DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	1,584	2.9	50	$9,138	2.5	4.7	$3,151
Bennington	1,226	3.0	47	$10,225	2.5	3.8	$3,408
Brattleboro	772	2.9	49	$8,790	2.1	3.7	$3,031
Burlington	3,887	2.8	50	$9,256	2.7	4.2	$3,306
Middlebury	737	2.7	49	$9,910	3.1	4.0	$3,670
Morrisville	659	2.7	47	$9,654	2.8	4.2	$3,576
Newport	806	2.6	48	$11,279	2.5	5.9	$4,338
Randolph	405	2.6	50	$12,588	2.4	4.5	$4,841
Rutland	2,201	2.6	48	$9,539	2.3	4.1	$3,669
Springfield	1,036	2.4	49	$9,709	2.3	5.2	$4,046
St. Albans	960	2.8	50	$8,476	2.4	3.7	$3,027
St. Johnsbury	766	2.8	49	$11,251	2.4	4.5	$4,018
White River Jct.	1,296	2.8	49	$10,780	2.7	5.4	$3,850
Vermont Total	**16,335**	**2.8**	**49**	**$9,759**	**2.5**	**4.4**	**$3,544**

HEART & CIRCULATORY DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	9,216	4.2	68	$17,584	2.3	7.4	$4,187
Bennington	9,407	4.3	69	$16,808	2.6	6.2	$3,909
Brattleboro	4,862	4.3	68	$15,186	2.2	6.4	$3,532
Burlington	20,217	4.7	66	$17,261	2.6	7.4	$3,672
Middlebury	4,471	4.5	67	$15,819	2.7	7.1	$3,515
Morrisville	4,019	4.2	67	$15,299	2.4	6.7	$3,643
Newport	5,861	3.5	68	$13,899	1.6	9.3	$3,971
Randolph	2,593	4.1	70	$16,054	1.9	7.2	$3,916
Rutland	13,026	4.5	68	$15,455	1.9	7.4	$3,434
Springfield	7,016	3.8	68	$14,186	1.5	7.6	$3,733
St. Albans	7,974	4.3	66	$15,179	2.0	6.7	$3,530
St. Johnsbury	4,625	4.0	68	$16,719	2.2	7.7	$4,180
White River Jct.	7,883	4.3	68	$17,846	2.0	7.5	$4,150
Vermont Total	**101,170**	**4.3**	**68**	**$16,192**	**2.2**	**7.3**	**$3,764**

H.I.V. DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	29	6.7	41	$18,165	1.6	7.1	$2,711
Bennington	33	8.8	42	$22,646	1.8	6.9	$2,573
Brattleboro	39	4.7	37	$9,890	0.8	6.9	$2,104
Burlington	111	11.6	42	$23,577	1.7	8.3	$2,033
Middlebury	2	2.0	42	$2,601	0.0	3.5	$1,300
Morrisville	5	4.0	36	$5,594	0.2	7.0	$1,399
Newport	13	8.1	48	$14,754	1.0	10.2	$1,821
Randolph	4	15.0	42	$91,260	3.3	7.8	$6,084
Rutland	16	14.3	38	$29,441	1.7	7.3	$2,059
Springfield	35	8.3	33	$22,888	1.3	8.7	$2,758
St. Albans	18	9.8	42	$23,279	2.3	8.0	$2,375
St. Johnsbury	7	9.9	40	$25,261	1.4	9.1	$2,552
White River Jct.	30	8.3	41	$13,364	0.7	8.9	$1,610
Vermont Total	**342**	**9.2**	**40**	**$20,865**	**1.5**	**8.0**	**$2,259**

INFECTION DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	896	6.1	57	$15,482	1.5	7.4	$2,538
Bennington	951	5.9	59	$14,191	2.0	7.1	$2,405
Brattleboro	491	6.4	56	$14,782	1.5	6.2	$2,310
Burlington	2,059	7.8	54	$18,743	1.9	7.7	$2,403
Middlebury	386	6.6	55	$16,549	1.9	7.3	$2,507
Morrisville	375	6.9	61	$16,429	1.6	7.0	$2,381
Newport	627	4.7	59	$11,774	1.0	9.8	$2,505
Randolph	219	5.9	61	$15,817	1.3	7.4	$2,681
Rutland	1,322	6.5	57	$17,688	1.4	7.5	$2,721
Springfield	733	5.9	61	$14,525	1.1	7.4	$2,462
St. Albans	641	6.4	58	$14,320	1.5	7.1	$2,237
St. Johnsbury	596	5.2	56	$13,199	1.4	7.6	$2,538
White River Jct.	834	5.7	57	$14,975	1.1	7.1	$2,627
Vermont Total	**10,130**	**6.4**	**57**	**$15,812**	**1.5**	**7.5**	**$2,482**

INJURY, TOXIC EFF. DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	912	3.6	43	$9,690	1.3	6.5	$2,692
Bennington	714	3.5	48	$8,992	1.6	6.0	$2,569
Brattleboro	541	3.1	45	$7,929	1.5	5.2	$2,558
Burlington	1,943	3.9	44	$9,983	1.5	6.1	$2,560
Middlebury	337	4.4	50	$11,565	1.6	5.9	$2,628
Morrisville	268	4.5	53	$13,013	1.7	5.8	$2,892
Newport	482	3.3	45	$9,507	1.2	7.5	$2,881
Randolph	172	4.4	52	$10,296	1.5	6.3	$2,340
Rutland	895	4.3	46	$10,722	1.6	5.8	$2,493
Springfield	521	4.2	47	$14,387	1.4	6.3	$3,425
St. Albans	436	4.5	48	$12,014	1.5	5.7	$2,670
St. Johnsbury	380	4.1	46	$15,058	1.6	6.5	$3,673
White River Jct.	709	3.7	48	$10,676	1.3	6.6	$2,885
Vermont Total	**8,310**	**3.9**	**46**	**$10,626**	**1.5**	**6.2**	**$2,738**

KIDNEY & URINARY DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	1,663	5.0	62	$13,285	1.6	7.3	$2,657
Bennington	1,616	4.8	64	$11,832	2.0	6.3	$2,465
Brattleboro	917	4.5	63	$9,895	1.5	5.8	$2,199
Burlington	3,434	5.6	59	$13,190	1.6	7.2	$2,355
Middlebury	706	4.9	63	$12,735	1.5	7.1	$2,599
Morrisville	686	4.5	61	$10,384	1.3	6.2	$2,307
Newport	987	4.1	62	$12,097	1.1	8.8	$2,950
Randolph	511	4.4	63	$12,572	1.2	6.4	$2,857
Rutland	2,481	5.0	61	$12,673	1.3	7.0	$2,535
Springfield	1,199	4.3	64	$11,713	1.1	7.0	$2,724
St. Albans	1,165	5.1	65	$11,741	1.3	7.0	$2,302
St. Johnsbury	895	4.4	58	$12,221	1.3	7.2	$2,778
White River Jct.	1,530	4.7	63	$12,615	1.1	7.2	$2,684
Vermont Total	**17,790**	**4.9**	**62**	**$12,336**	**1.4**	**7.0**	**$2,525**

LIVER & PANCREAS DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	1,439	5.4	57	$13,807	1.7	6.5	$2,557
Bennington	1,271	5.5	59	$16,598	2.7	5.9	$3,018
Brattleboro	916	5.2	56	$13,024	1.7	4.9	$2,505
Burlington	3,300	5.6	54	$15,509	2.0	6.2	$2,769
Middlebury	527	5.8	58	$16,819	2.6	5.9	$2,900
Morrisville	623	5.3	56	$13,516	1.7	5.3	$2,550
Newport	832	4.5	59	$16,669	1.3	8.3	$3,704
Randolph	376	4.7	60	$14,185	1.5	6.2	$3,018
Rutland	1,973	5.4	58	$15,182	1.7	6.3	$2,811
Springfield	825	4.8	59	$13,557	1.4	6.5	$2,824
St. Albans	882	5.7	57	$14,178	1.6	5.7	$2,487
St. Johnsbury	741	4.9	58	$17,363	1.7	6.3	$3,544
White River Jct.	1,170	5.1	56	$13,611	1.5	6.4	$2,669
Vermont Total	**14,875**	**5.3**	**57**	**$14,991**	**1.8**	**6.2**	**$2,819**

LYMPHATIC DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	608	7.3	49	$24,649	2.2	6.2	$3,377
Bennington	412	7.1	51	$22,892	2.3	5.4	$3,224
Brattleboro	359	7.8	54	$27,051	2.1	6.2	$3,468
Burlington	1,571	6.6	45	$22,309	2.1	5.3	$3,380
Middlebury	309	6.1	41	$18,599	2.0	5.1	$3,049
Morrisville	201	7.5	57	$23,775	1.9	5.9	$3,170
Newport	315	5.6	47	$19,699	2.0	6.7	$3,518
Randolph	159	6.8	56	$19,799	1.9	6.5	$2,912
Rutland	776	6.9	54	$26,390	2.1	5.8	$3,825
Springfield	379	6.3	55	$24,991	1.8	7.1	$3,967
St. Albans	372	7.2	49	$20,507	2.0	5.5	$2,848
St. Johnsbury	285	6.7	56	$20,674	1.9	6.6	$3,086
White River Jct.	625	6.9	55	$24,555	1.9	7.3	$3,559
Vermont Total	**6,371**	**6.8**	**50**	**$23,210**	**2.0**	**6.0**	**$3,406**

MALE REPRODUCTIVE DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	438	3.2	65	$9,444	1.7	5.0	$2,951
Bennington	246	3.0	64	$10,619	2.0	4.2	$3,540
Brattleboro	243	3.2	70	$10,143	1.5	4.1	$3,170
Burlington	1,090	3.0	64	$9,244	1.8	4.1	$3,081
Middlebury	223	2.9	64	$11,688	1.9	3.5	$4,030
Morrisville	172	3.6	64	$11,121	1.7	4.2	$3,089
Newport	228	3.1	62	$15,642	2.0	6.2	$5,046
Randolph	142	3.3	65	$13,418	1.5	5.0	$4,066
Rutland	777	2.9	67	$10,552	1.6	4.4	$3,639
Springfield	270	2.9	66	$11,667	1.5	5.1	$4,023
St. Albans	244	2.8	63	$8,705	1.7	4.2	$3,109
St. Johnsbury	150	2.8	63	$11,176	1.4	4.9	$3,991
White River Jct.	374	2.9	66	$10,504	1.4	4.5	$3,622
Vermont Total	**4,597**	**3.0**	**65**	**$10,519**	**1.7**	**4.5**	**$3,491**

MENTAL ILLNESS DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	4,103	7.9	42	$7,229	0.3	5.0	$915
Bennington	1,487	7.2	43	$7,129	0.8	5.3	$990
Brattleboro	1,986	7.9	41	$6,518	1.6	5.3	$825
Burlington	5,805	9.7	43	$9,078	0.2	4.3	$936
Middlebury	1,302	8.5	42	$7,457	0.3	4.8	$877
Morrisville	887	7.5	43	$6,597	0.3	4.8	$880
Newport	1,140	7.8	44	$7,843	0.5	5.6	$1,006
Randolph	828	7.4	43	$7,620	0.4	5.8	$1,030
Rutland	3,631	6.4	44	$5,895	0.2	5.9	$921
Springfield	2,602	7.1	41	$6,166	1.4	5.5	$868
St. Albans	1,365	8.0	43	$7,519	0.2	4.3	$940
St. Johnsbury	1,118	7.8	44	$8,185	0.5	5.4	$1,049
White River Jct.	3,257	6.3	42	$7,077	0.5	6.2	$1,123
Vermont Total	**29,511**	**7.8**	**43**	**$7,341**	**0.5**	**5.2**	**$943**

MUSCULOSKELETAL DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	5,066	4.6	62	$18,087	2.0	5.5	$3,932
Bennington	4,688	4.2	64	$16,449	2.0	5.0	$3,916
Brattleboro	3,382	4.9	62	$14,190	1.6	4.3	$2,896
Burlington	11,116	5.1	59	$18,013	1.9	4.7	$3,532
Middlebury	2,320	5.1	61	$20,602	2.2	4.9	$4,040
Morrisville	2,408	4.9	61	$18,828	2.1	4.8	$3,843
Newport	2,516	4.5	61	$17,676	1.8	6.8	$3,928
Randolph	1,450	4.3	61	$17,034	1.6	5.5	$3,961
Rutland	7,706	4.9	63	$18,076	1.8	5.5	$3,689
Springfield	3,267	4.5	63	$18,758	1.6	6.0	$4,168
St. Albans	3,489	4.3	61	$15,857	1.8	4.9	$3,688
St. Johnsbury	2,666	4.5	62	$18,704	1.7	5.8	$4,156
White River Jct.	4,833	4.4	61	$17,695	1.7	5.8	$4,021
Vermont Total	**54,907**	**4.7**	**61**	**$17,676**	**1.8**	**5.3**	**$3,759**

NEONATAL DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	6,722	3.0	0	$3,716	0.7	2.2	$1,239
Bennington	4,394	3.0	0	$3,935	0.7	1.9	$1,312
Brattleboro	3,063	3.3	0	$4,616	0.5	1.8	$1,399
Burlington	18,918	3.1	0	$3,905	0.5	2.1	$1,260
Middlebury	2,951	3.0	0	$4,151	0.5	1.9	$1,384
Morrisville	2,947	2.7	0	$3,141	0.5	2.0	$1,163
Newport	2,926	3.1	0	$4,278	0.6	2.7	$1,380
Randolph	1,402	2.8	0	$3,211	0.3	2.3	$1,147
Rutland	6,438	3.0	0	$3,593	0.6	1.8	$1,198
Springfield	3,004	3.0	0	$4,926	0.5	2.4	$1,642
St. Albans	5,323	3.2	0	$4,253	0.6	1.9	$1,329
St. Johnsbury	2,956	2.7	0	$3,445	0.6	1.9	$1,276
White River Jct.	4,674	2.8	0	$3,690	0.5	2.7	$1,318
Vermont Total	**65,718**	**3.0**	**0**	**$3,908**	**0.6**	**2.1**	**$1,295**

PREGNANCY & CHILDBIRTH DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	6,878	2.4	28	$4,890	2.2	4.1	$2,037
Bennington	4,512	2.5	28	$3,895	1.9	3.7	$1,558
Brattleboro	3,020	2.5	29	$4,351	1.5	3.4	$1,740
Burlington	20,096	2.5	29	$4,959	2.4	4.5	$1,984
Middlebury	2,921	2.3	29	$5,027	2.2	3.7	$2,186
Morrisville	3,002	2.4	28	$5,378	2.0	3.7	$2,241
Newport	3,001	2.4	26	$4,678	2.7	4.4	$1,949
Randolph	1,451	2.3	28	$5,500	2.0	4.4	$2,391
Rutland	6,495	2.3	28	$4,570	1.9	3.8	$1,987
Springfield	3,051	2.3	27	$4,703	2.4	4.6	$2,045
St. Albans	5,335	2.2	27	$4,082	2.0	3.4	$1,855
St. Johnsbury	2,986	2.3	27	$4,900	1.8	3.9	$2,130
White River Jct.	4,909	2.4	28	$4,929	2.7	5.2	$2,054
Vermont Total	**67,657**	**2.4**	**28**	**$4,752**	**2.2**	**4.2**	**$1,980**

RESPIRATORY DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	5,614	5.5	64	$12,479	1.1	7.0	$2,269
Bennington	6,353	4.9	65	$10,712	1.2	5.7	$2,186
Brattleboro	2,772	5.9	64	$11,324	1.6	5.7	$1,919
Burlington	9,982	6.4	60	$13,674	1.1	7.0	$2,137
Middlebury	2,584	5.8	62	$12,234	1.1	6.5	$2,109
Morrisville	2,175	5.4	62	$10,769	0.8	6.0	$1,994
Newport	3,572	4.5	61	$11,962	0.6	9.2	$2,658
Randolph	1,471	5.5	66	$12,537	0.9	6.8	$2,279
Rutland	8,607	5.8	64	$13,275	0.9	7.2	$2,289
Springfield	3,904	5.2	63	$12,024	0.7	7.0	$2,312
St. Albans	4,185	5.7	64	$10,667	0.7	6.2	$1,871
St. Johnsbury	2,774	4.3	55	$10,039	1.1	6.5	$2,335
White River Jct.	4,197	5.2	64	$12,566	0.7	7.1	$2,417
Vermont Total	**58,190**	**5.5**	**63**	**$12,178**	**1.0**	**6.8**	**$2,208**

SKIN AND BREAST DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	1,087	5.1	56	$9,715	1.2	6.0	$1,905
Bennington	966	4.3	59	$8,605	1.4	5.6	$2,001
Brattleboro	628	5.0	58	$7,944	1.3	4.9	$1,589
Burlington	2,424	5.0	52	$10,257	1.3	5.4	$2,051
Middlebury	520	4.7	56	$9,117	1.3	5.1	$1,940
Morrisville	531	4.6	60	$8,729	1.2	5.1	$1,898
Newport	524	5.7	58	$7,708	0.7	8.3	$1,352
Randolph	366	4.2	60	$9,694	1.0	6.0	$2,308
Rutland	1,547	4.9	59	$10,095	1.1	6.7	$2,060
Springfield	784	4.1	60	$8,494	1.0	6.2	$2,072
St. Albans	694	5.0	57	$7,929	1.1	5.0	$1,586
St. Johnsbury	585	4.1	58	$8,768	1.0	6.5	$2,138
White River Jct.	1,166	4.1	57	$8,787	1.0	6.1	$2,143
Vermont Total	**11,822**	**4.7**	**57**	**$9,207**	**1.2**	**5.9**	**$1,950**

SPLEEN & BLOOD DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	439	4.8	55	$13,729	1.3	6.6	$2,860
Bennington	356	4.2	60	$11,918	1.5	6.2	$2,838
Brattleboro	273	4.2	60	$9,339	1.4	5.5	$2,224
Burlington	1,063	4.9	52	$12,843	1.1	6.4	$2,621
Middlebury	225	5.2	52	$11,989	1.2	6.1	$2,306
Morrisville	143	4.2	55	$10,277	1.5	5.7	$2,447
Newport	283	3.8	57	$11,310	1.1	8.7	$2,976
Randolph	124	3.9	60	$10,064	1.3	6.8	$2,580
Rutland	624	4.8	58	$13,268	1.5	6.7	$2,764
Springfield	308	4.4	60	$12,291	1.0	7.0	$2,793
St. Albans	368	4.3	52	$10,652	1.1	5.7	$2,477
St. Johnsbury	165	3.7	58	$8,501	1.2	6.8	$2,298
White River Jct.	434	4.4	56	$12,349	0.9	7.2	$2,807
Vermont Total	**4,805**	**4.5**	**56**	**$12,036**	**1.2**	**6.6**	**$2,660**

SUBSTANCE ABUSE DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	433	4.3	46	$5,430	0.8	5.5	$1,263
Bennington	488	5.0	47	$5,143	1.1	5.5	$1,029
Brattleboro	369	4.7	45	$4,749	1.4	5.2	$1,011
Burlington	881	5.7	47	$7,552	0.9	6.2	$1,325
Middlebury	168	4.2	48	$4,929	0.5	5.7	$1,174
Morrisville	147	3.8	45	$4,096	0.7	5.1	$1,078
Newport	204	4.1	47	$5,404	0.6	7.5	$1,318
Randolph	74	4.2	47	$5,739	0.5	5.8	$1,366
Rutland	1,810	4.0	41	$4,008	0.2	6.0	$1,002
Springfield	349	4.2	45	$4,135	1.2	5.5	$984
St. Albans	150	4.7	50	$5,882	0.6	5.7	$1,251
St. Johnsbury	159	4.8	50	$5,549	0.8	6.3	$1,156
White River Jct.	374	4.3	48	$5,132	0.7	5.8	$1,193
Vermont Total	**5,606**	**4.5**	**45**	**$5,103**	**0.7**	**5.9**	**$1,133**

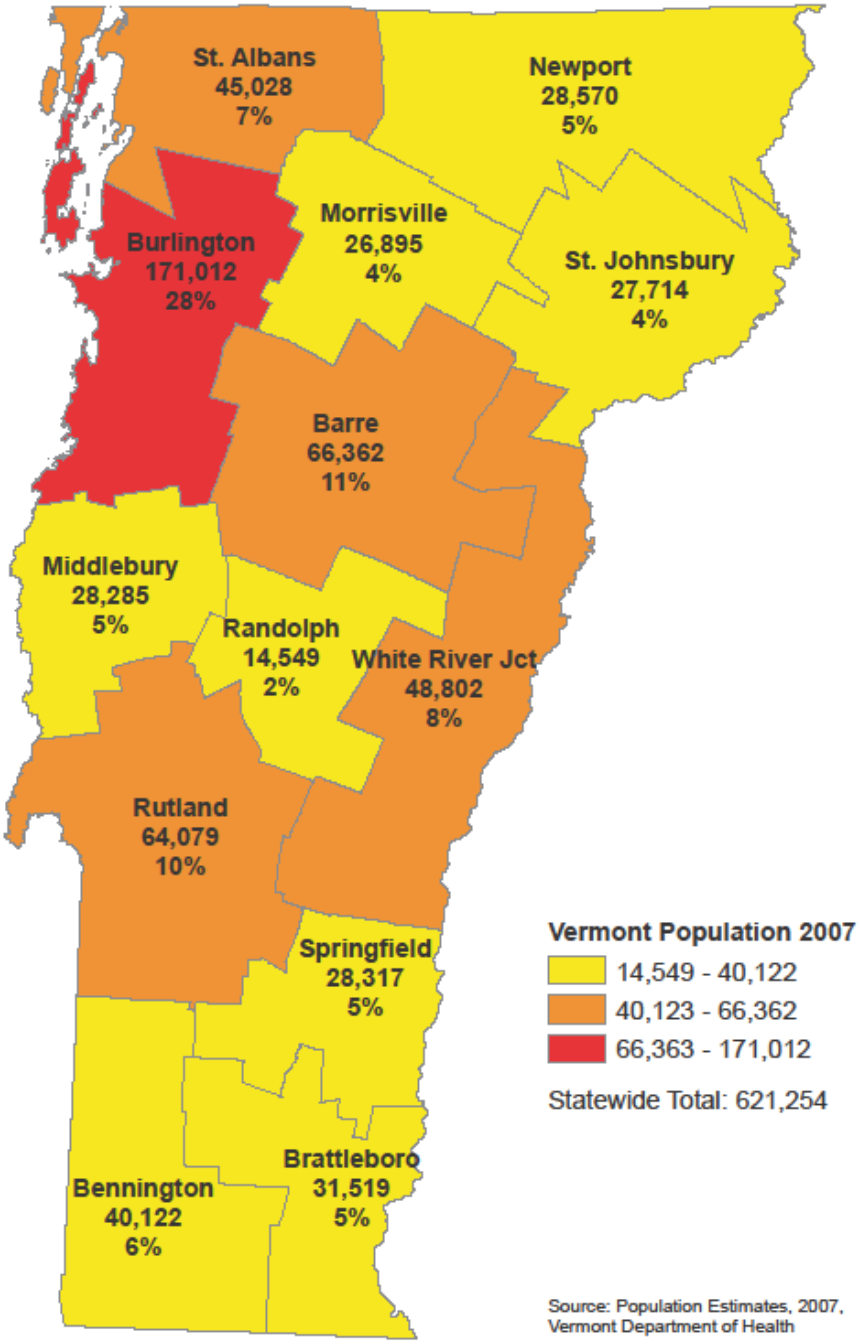
TRAUMA DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	149	11.9	39	$44,982	4.1	8.3	$3,780
Bennington	108	11.0	40	$44,283	5.5	9.1	$4,026
Brattleboro	60	8.5	42	$37,507	3.5	8.0	$4,413
Burlington	339	11.1	39	$40,505	4.7	8.4	$3,649
Middlebury	99	9.4	31	$37,561	4.9	7.7	$3,996
Morrisville	72	9.0	41	$34,992	4.4	7.8	$3,888
Newport	102	10.3	38	$44,130	3.8	9.0	$4,284
Randolph	42	9.3	38	$43,831	3.6	8.0	$4,713
Rutland	151	11.3	36	$48,441	5.1	8.0	$4,287
Springfield	80	9.3	42	$40,480	3.2	8.1	$4,353
St. Albans	119	8.4	39	$34,237	4.3	8.0	$4,076
St. Johnsbury	70	10.3	42	$43,344	3.1	8.1	$4,208
White River Jct.	97	10.5	44	$43,977	3.2	8.2	$4,188
Vermont Total	**1,488**	**10.4**	**39**	**$41,649**	**4.3**	**8.3**	**$4,013**

ALL OTHER DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	856	10.6	57	$13,097	0.3	6.5	$1,236
Bennington	386	9.0	67	$12,994	1.5	7.5	$1,444
Brattleboro	513	11.3	68	$16,268	0.6	6.9	$1,440
Burlington	6,780	7.6	58	$8,717	0.2	5.2	$1,147
Middlebury	614	10.3	59	$12,063	0.3	6.7	$1,171
Morrisville	453	9.5	59	$11,918	0.3	6.5	$1,255
Newport	300	9.5	59	$13,991	0.4	7.2	$1,473
Randolph	148	8.2	63	$12,045	0.5	6.8	$1,469
Rutland	2,746	11.7	70	$13,737	0.6	9.5	$1,174
Springfield	413	8.4	70	$11,432	0.5	7.2	$1,361
St. Albans	832	10.9	58	$13,140	0.3	6.8	$1,206
St. Johnsbury	201	9.7	59	$16,143	0.7	7.2	$1,664
White River Jct.	314	7.2	65	$9,932	0.4	6.1	$1,379
Vermont Total	**14,556**	**9.2**	**62**	**$11,143**	**0.4**	**6.6**	**$1,216**

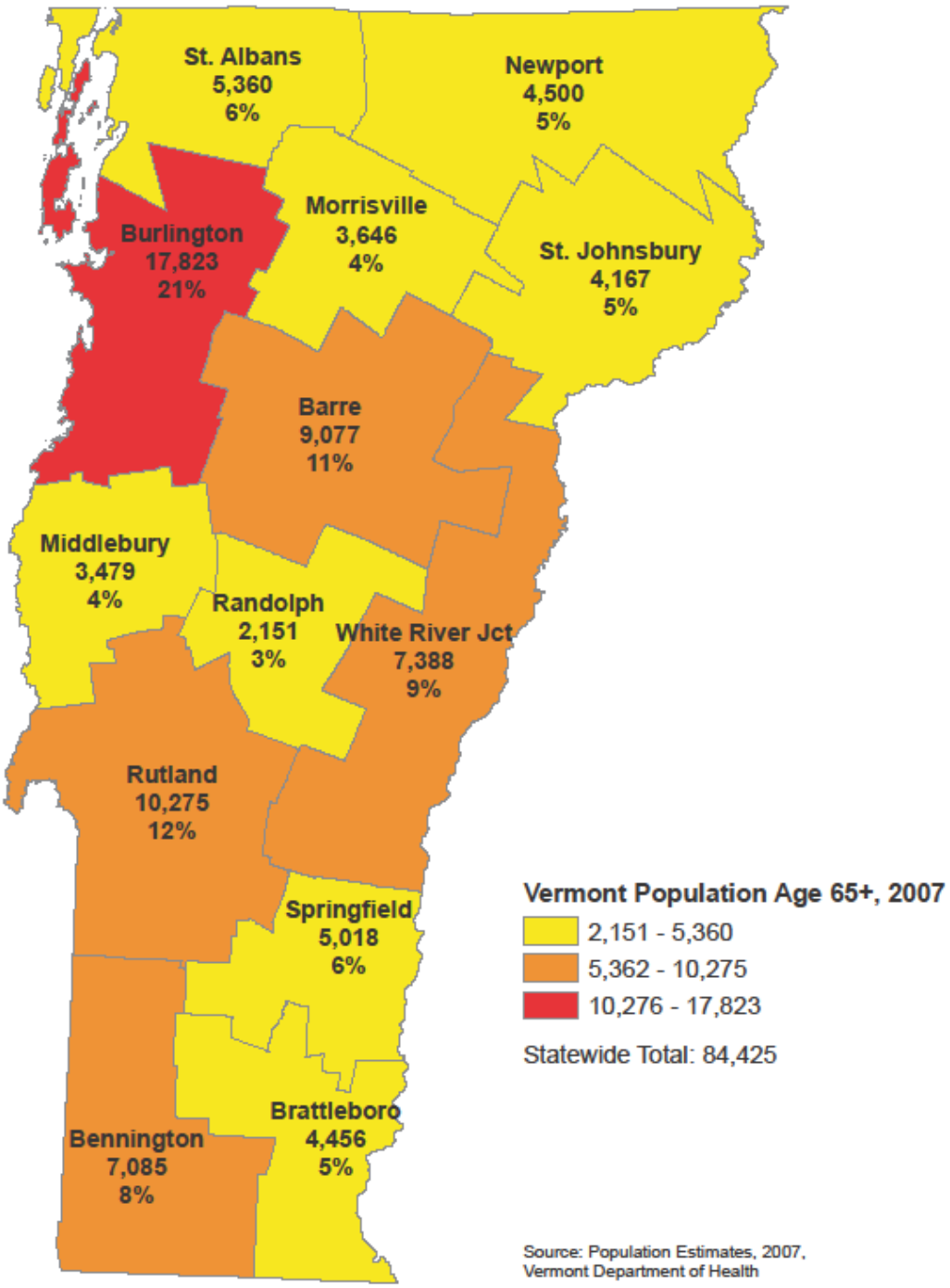
Demographics

by
Hospital Service Area

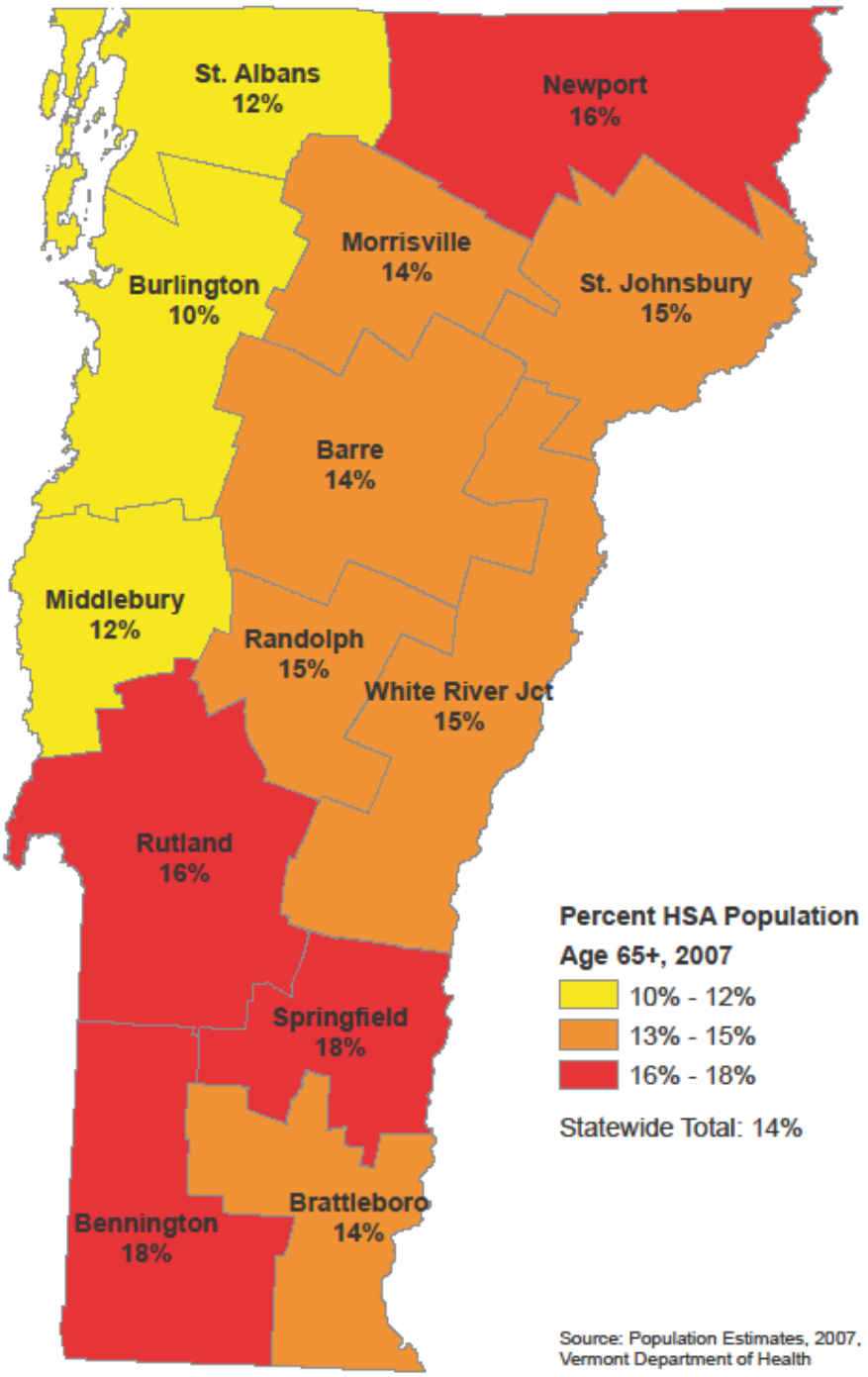
Total Vermont Population by HSA



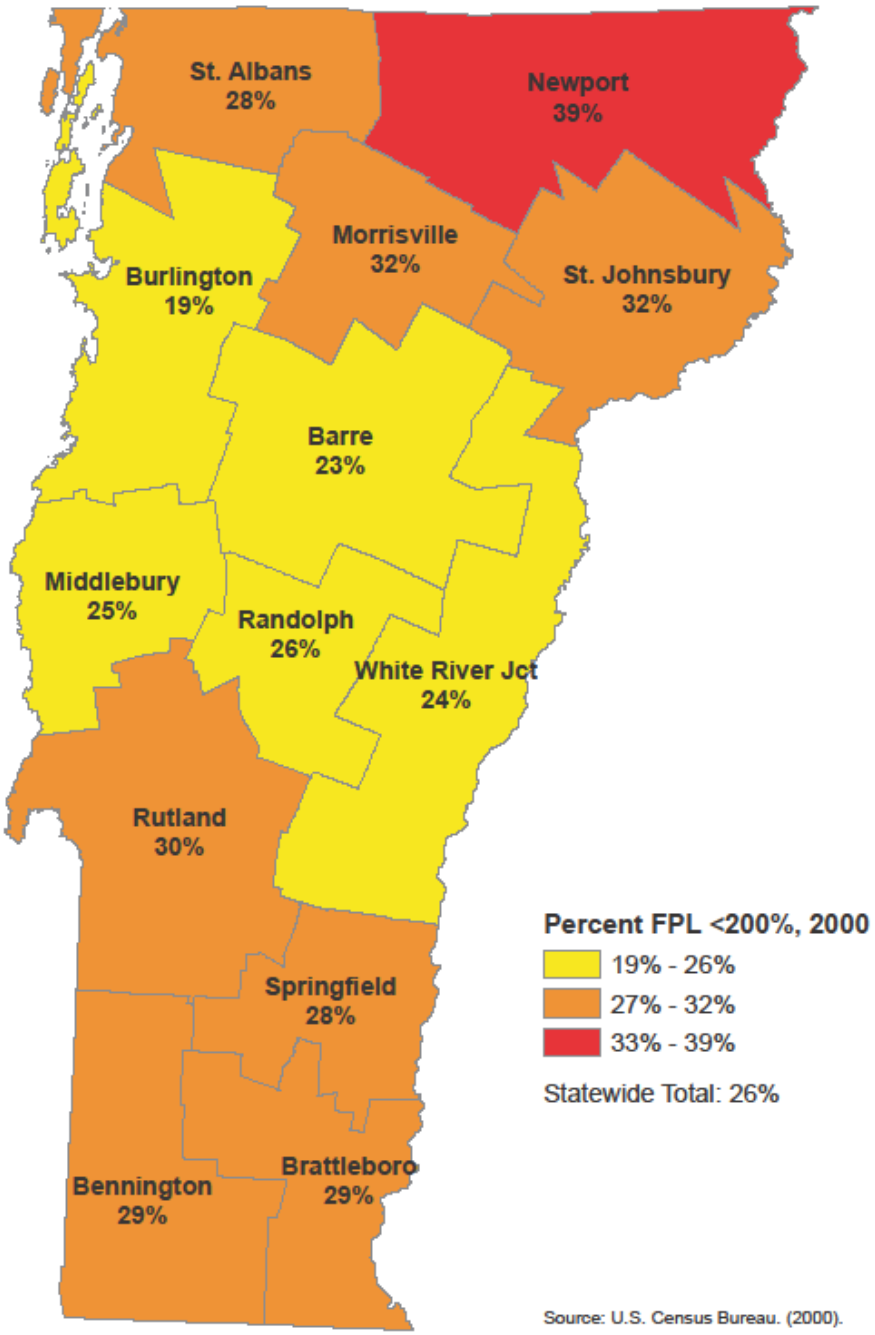
Distribution of VT's 65+ Population by HSA



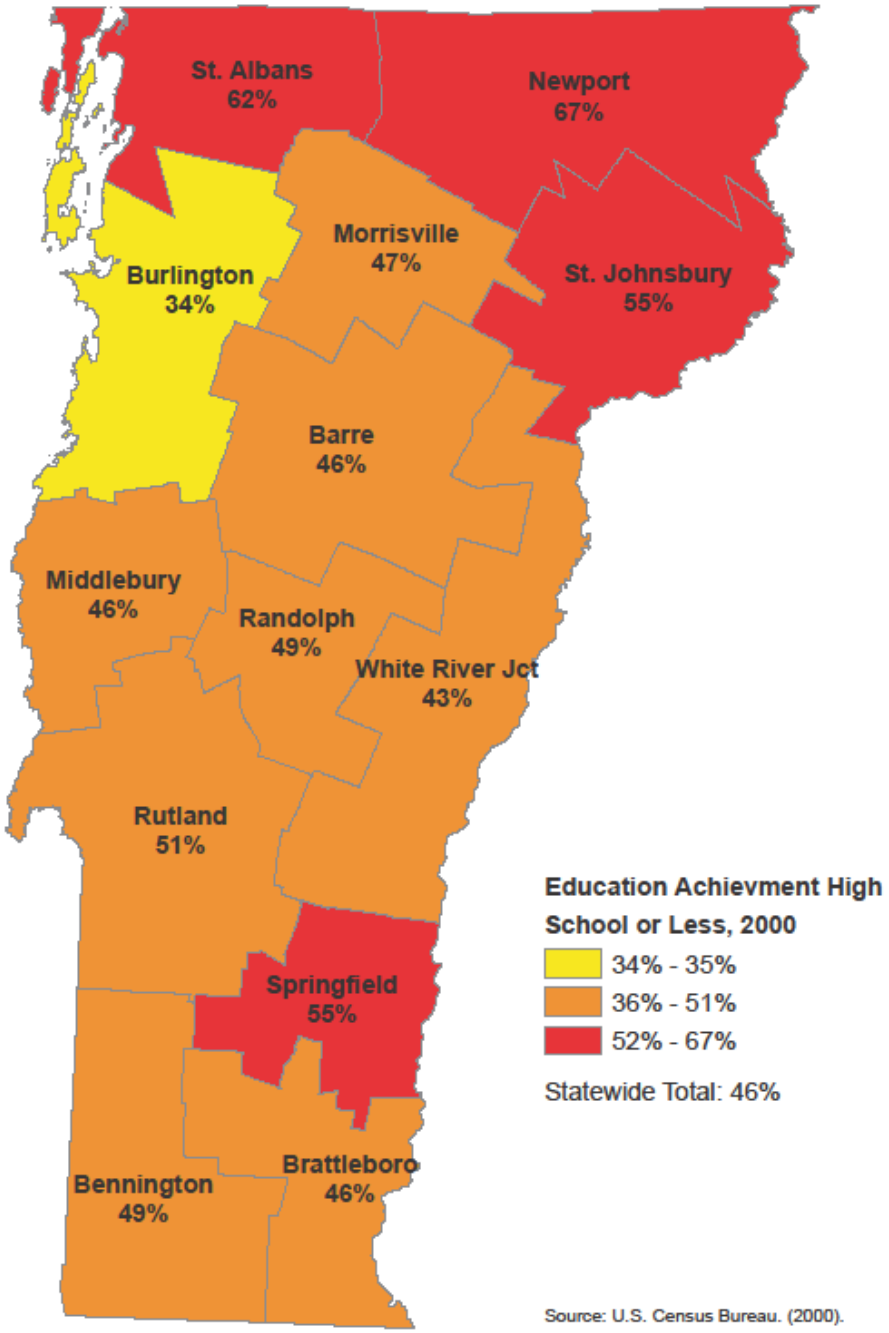
Percent of HSA Population 65+



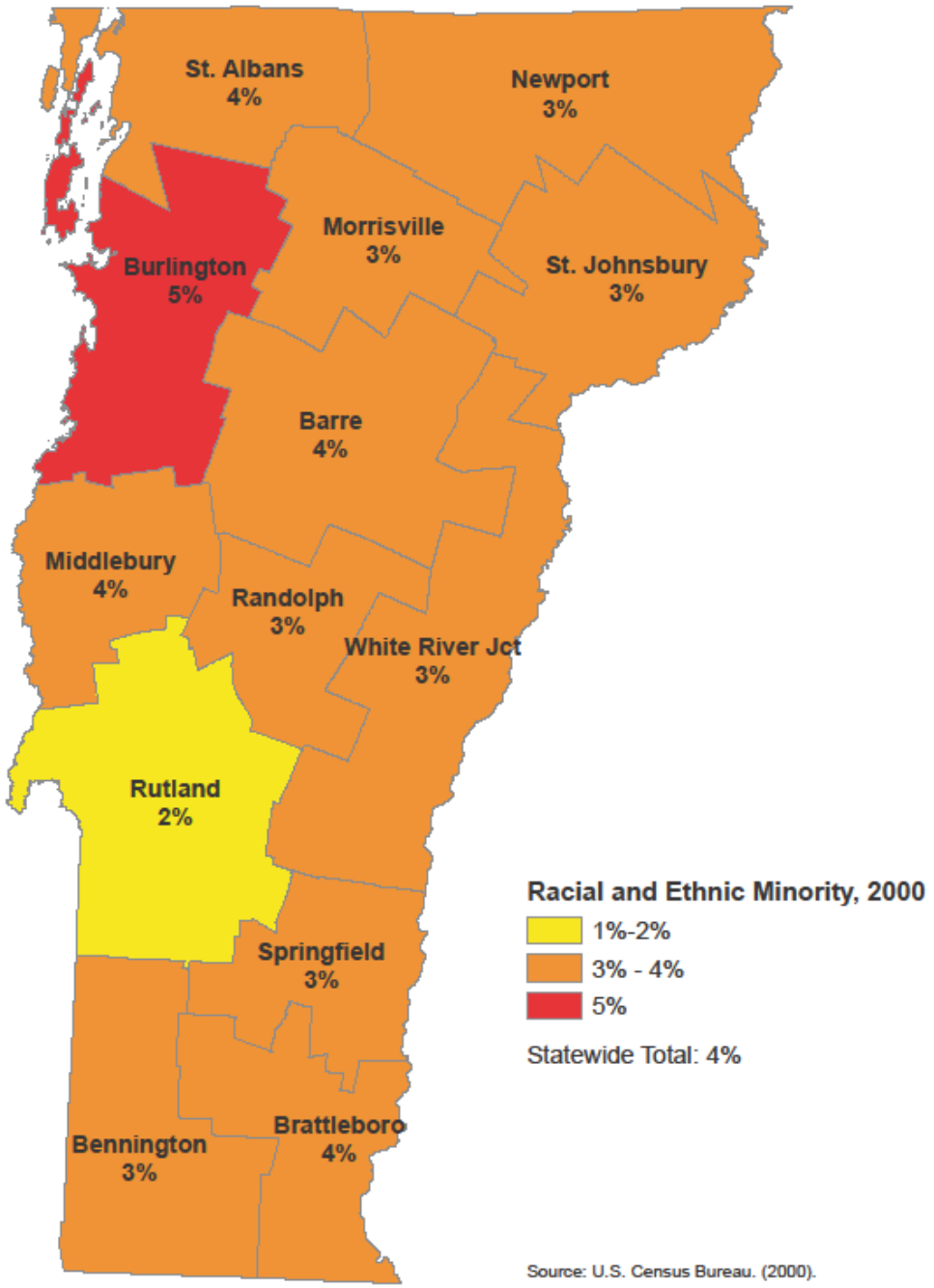
Percent of HSA Below 200% Federal Poverty Level



Percent of HSA (18+) Without Any College Education



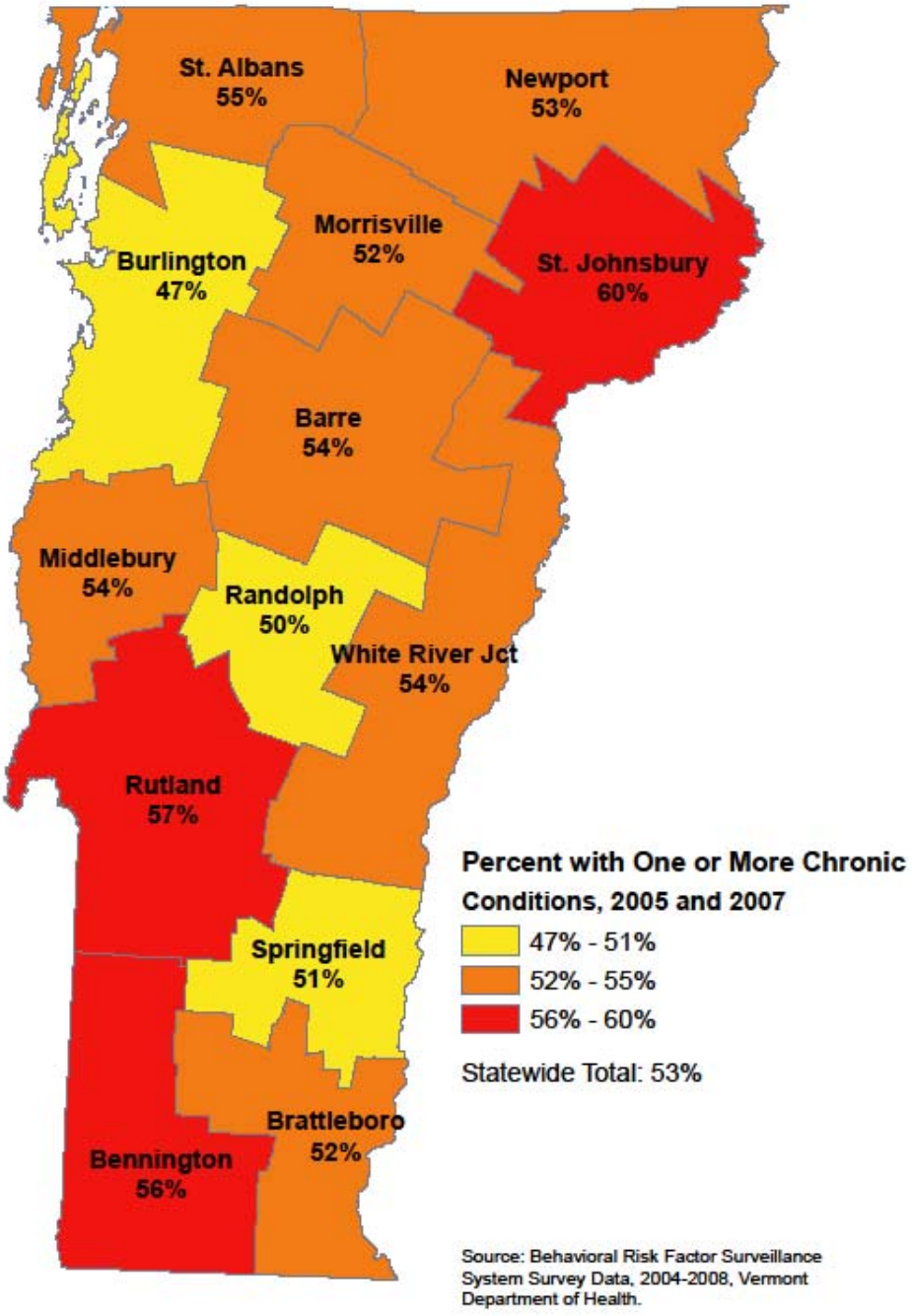
Percent of HSA that is Racial or Ethnic Minority



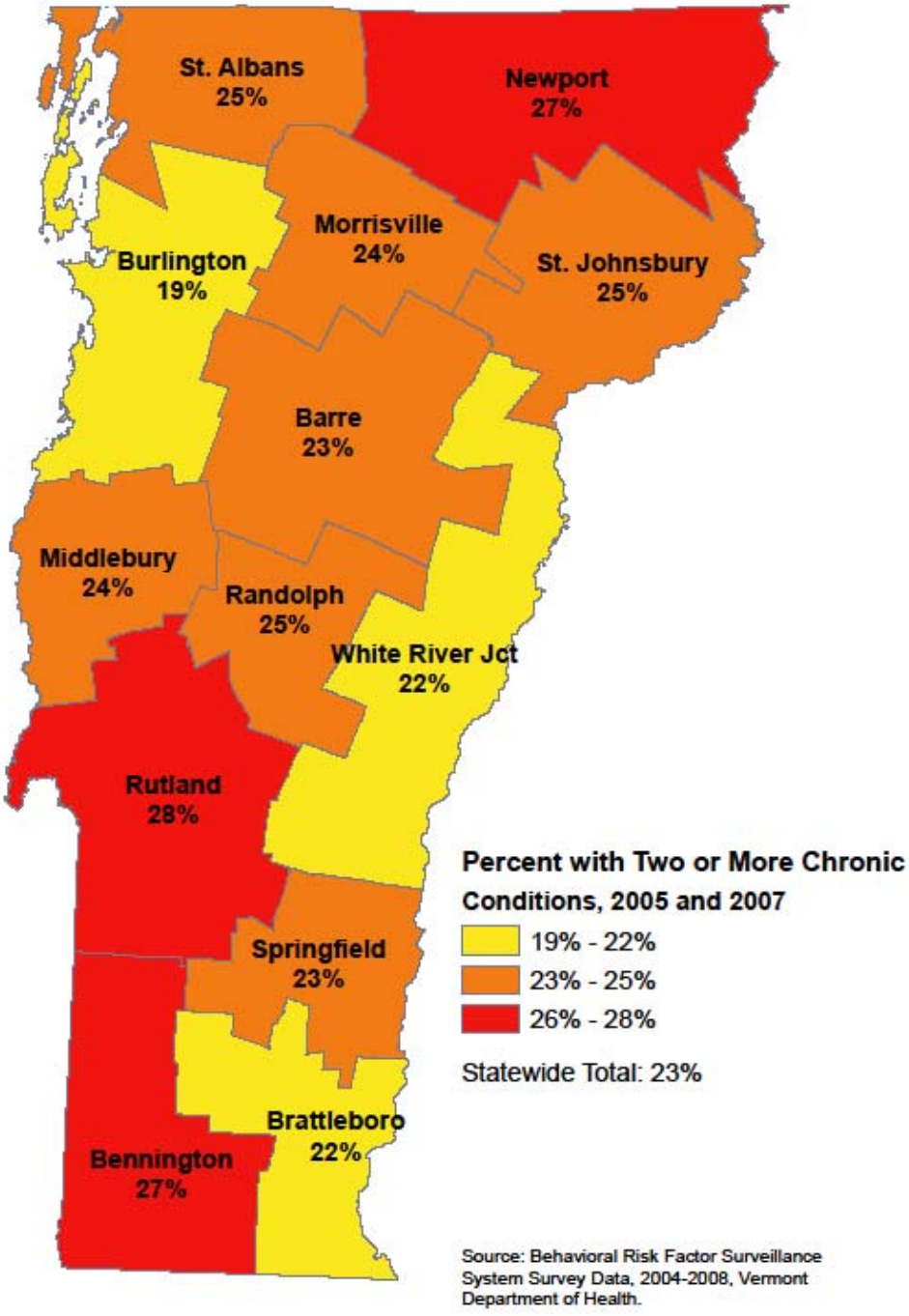
Risk Factors

by
Hospital Service Area

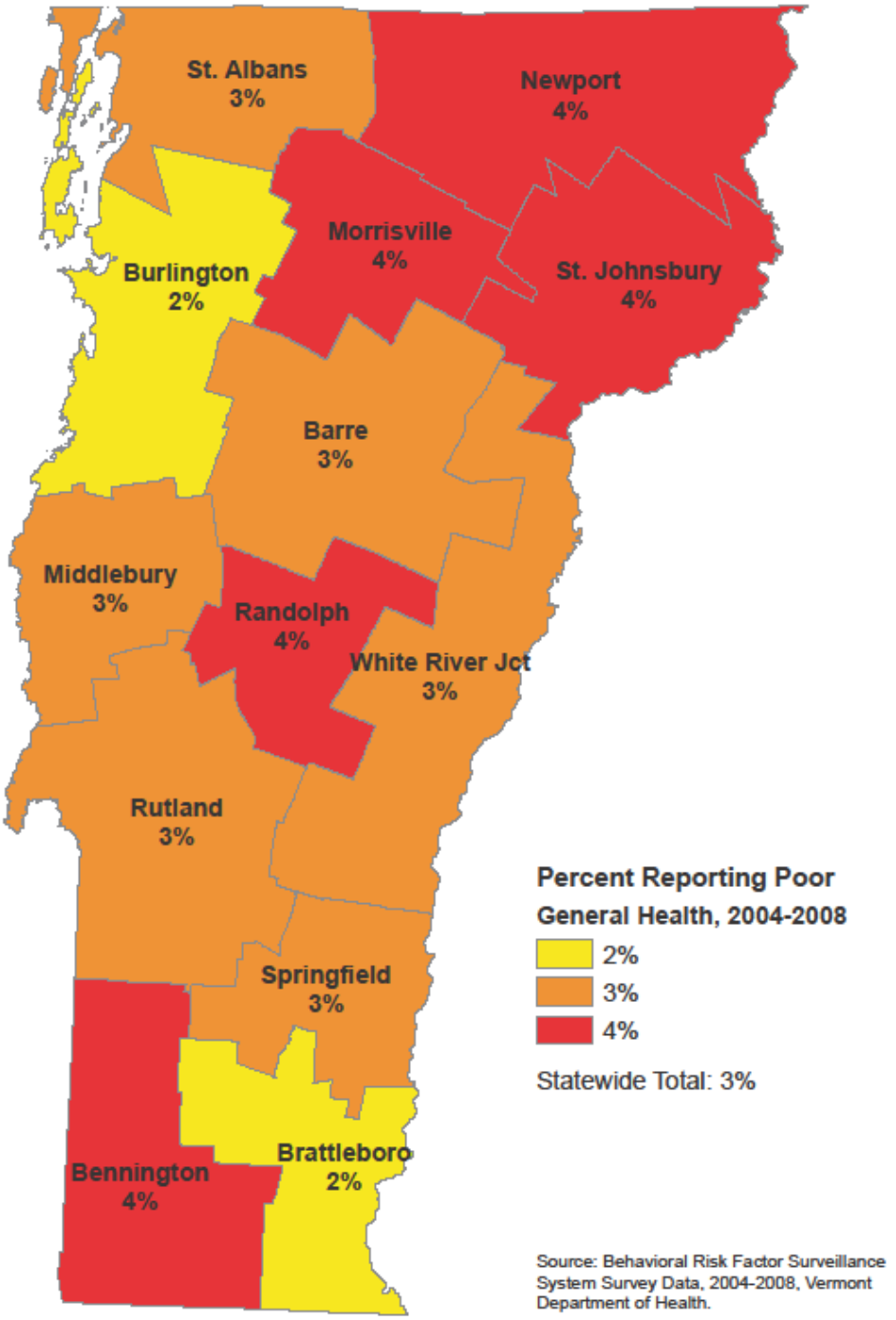
Percent of HSA With One or More Chronic Disease



Percent of HSA With Two or More Chronic Diseases

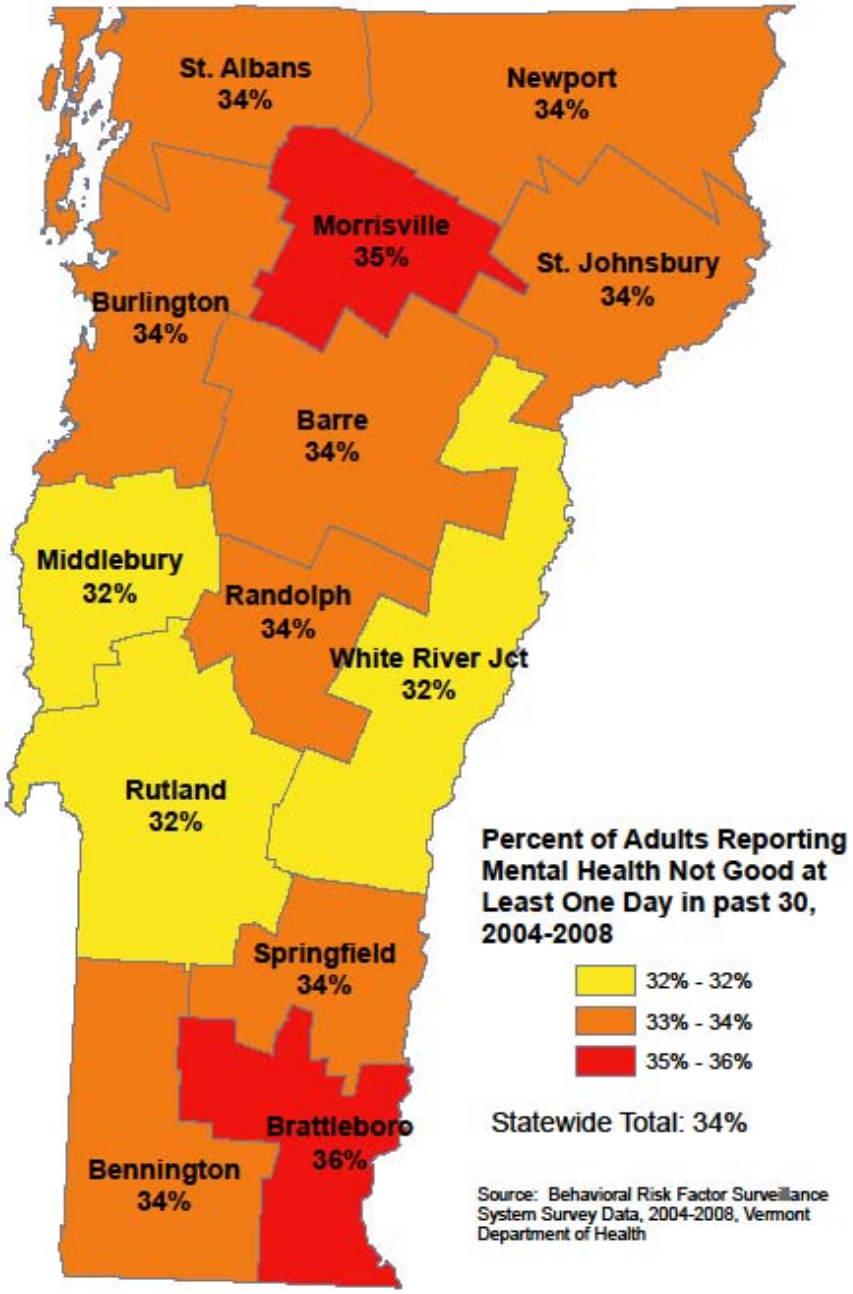


Percent of HSA Reporting Poor General Health

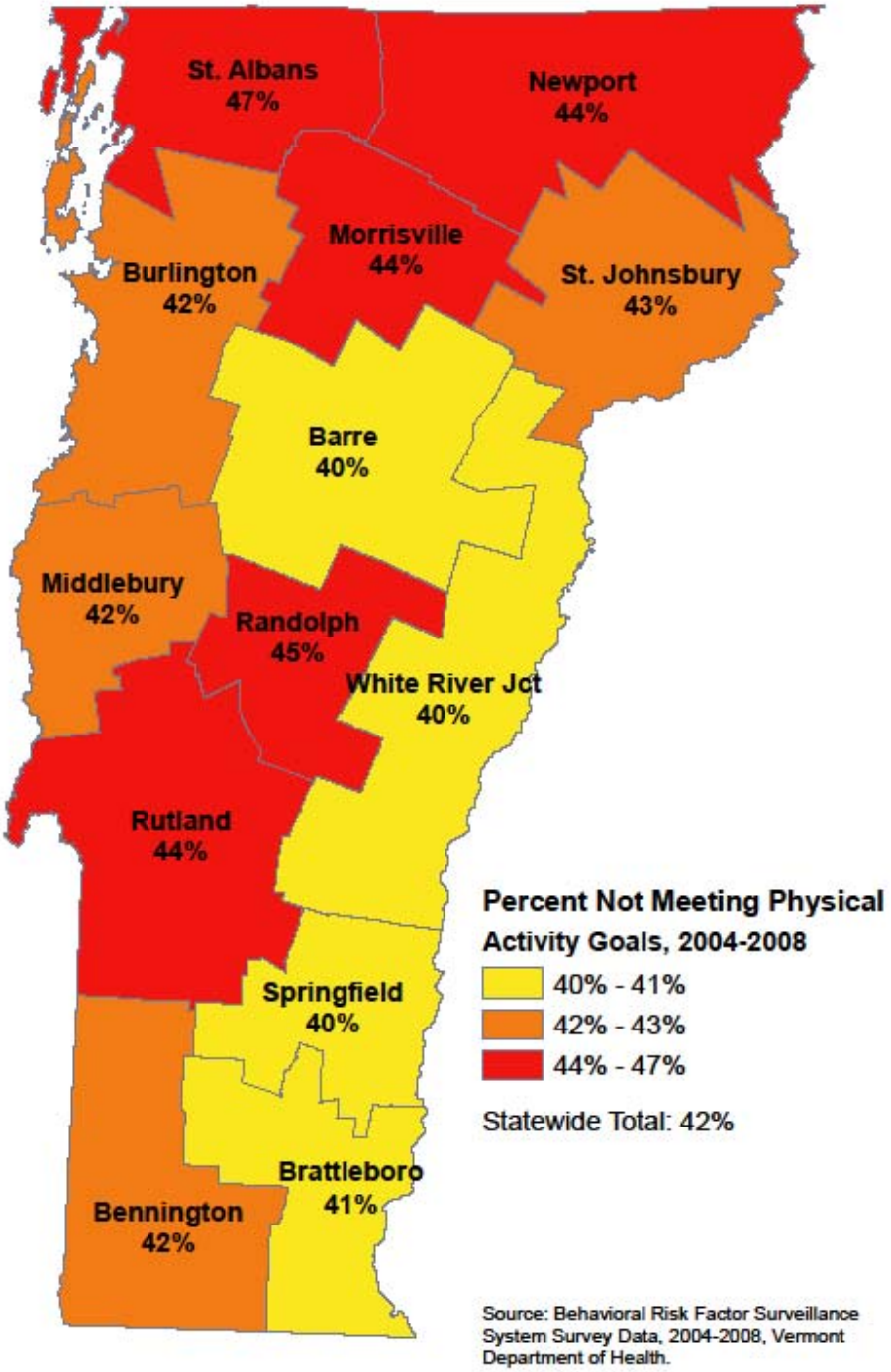


Source: Behavioral Risk Factor Surveillance System Survey Data, 2004-2008, Vermont Department of Health.

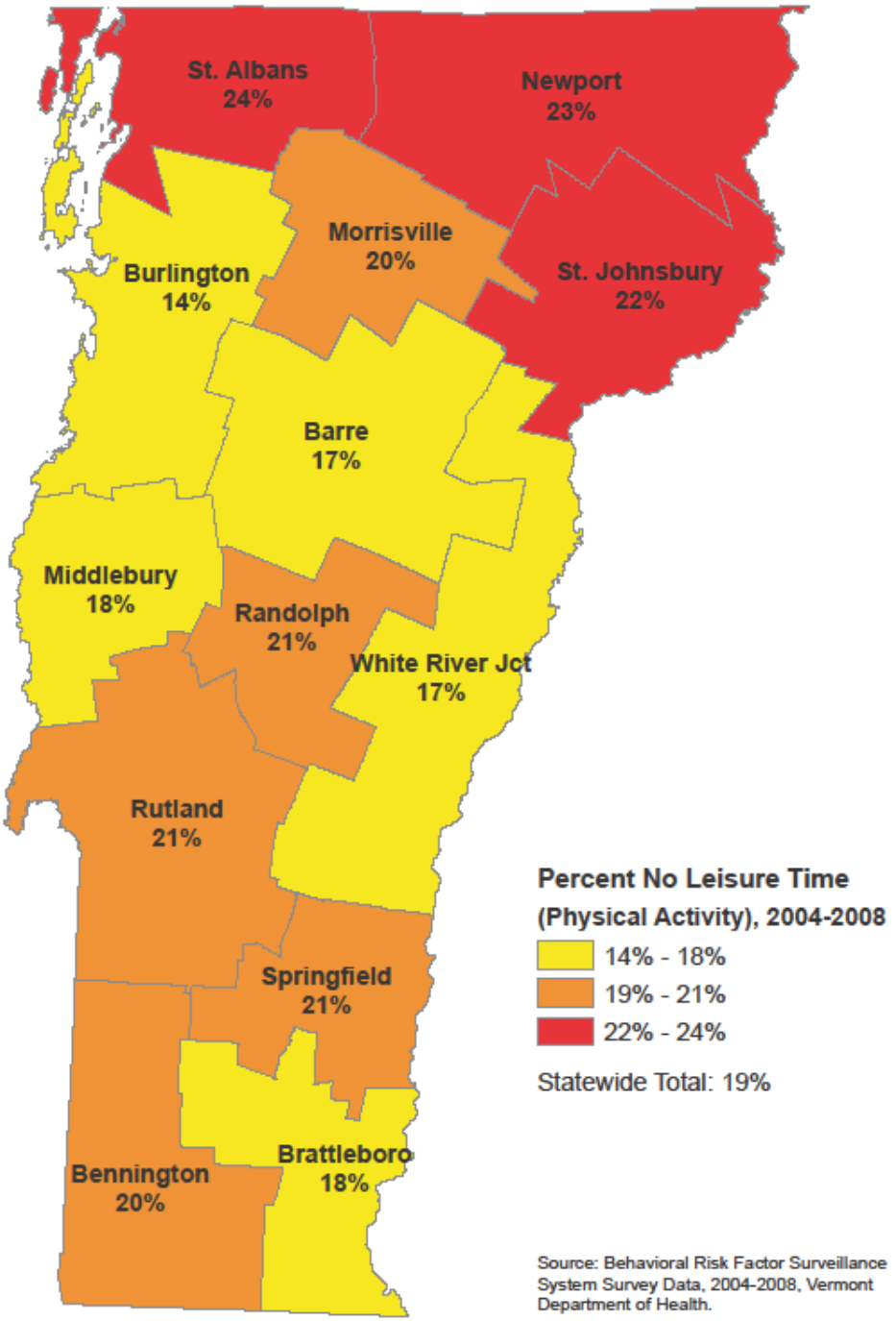
Percent of HSA With 1+ Day of Mental Health 'Not Good'



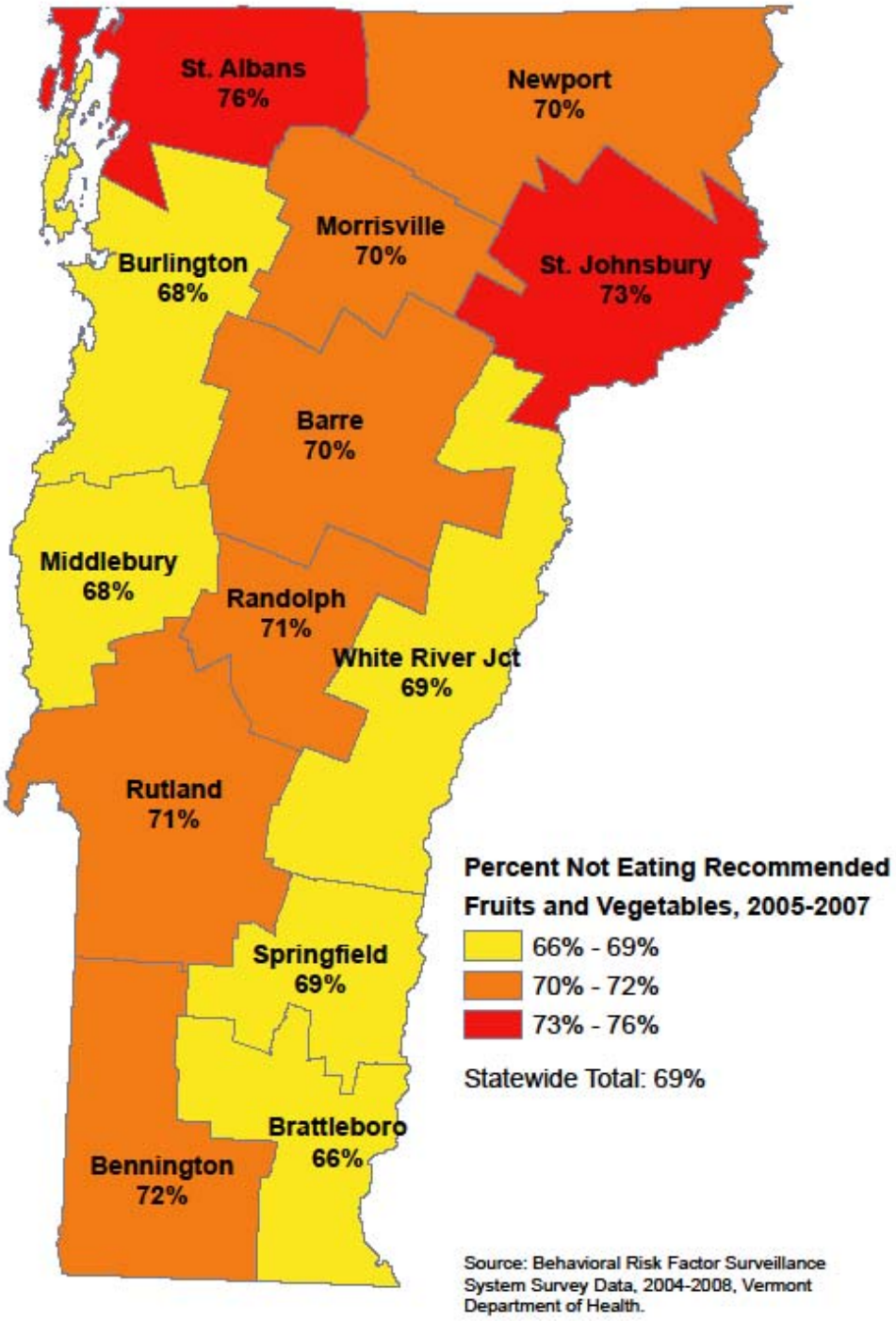
Percent of HSA Not Meeting CDC Recommendation for Physical Activity



Percent of HSA with No Physical Activity in Leisure Time

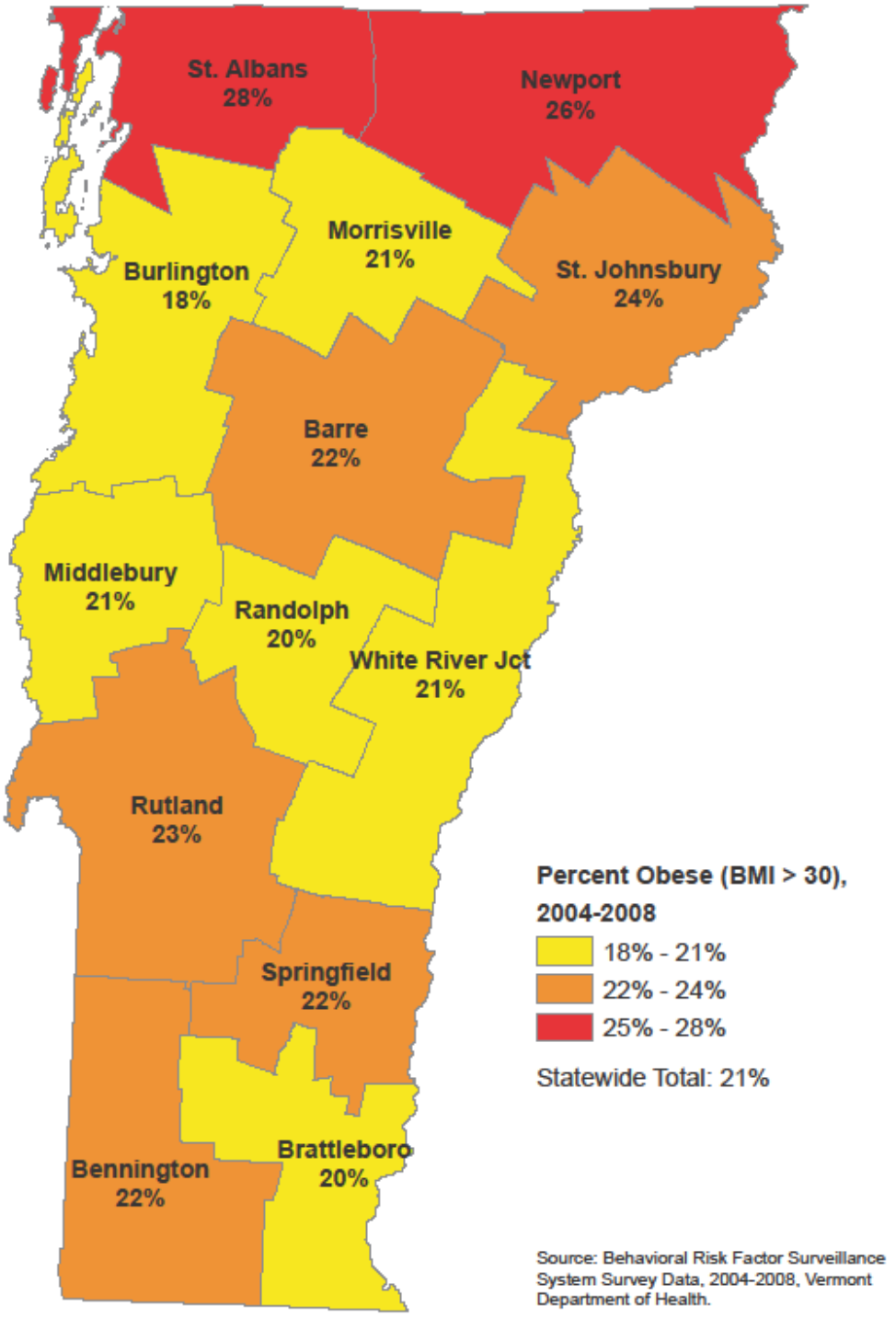


Percent of HSA Not Eating 5+ Fruits and Vegetables

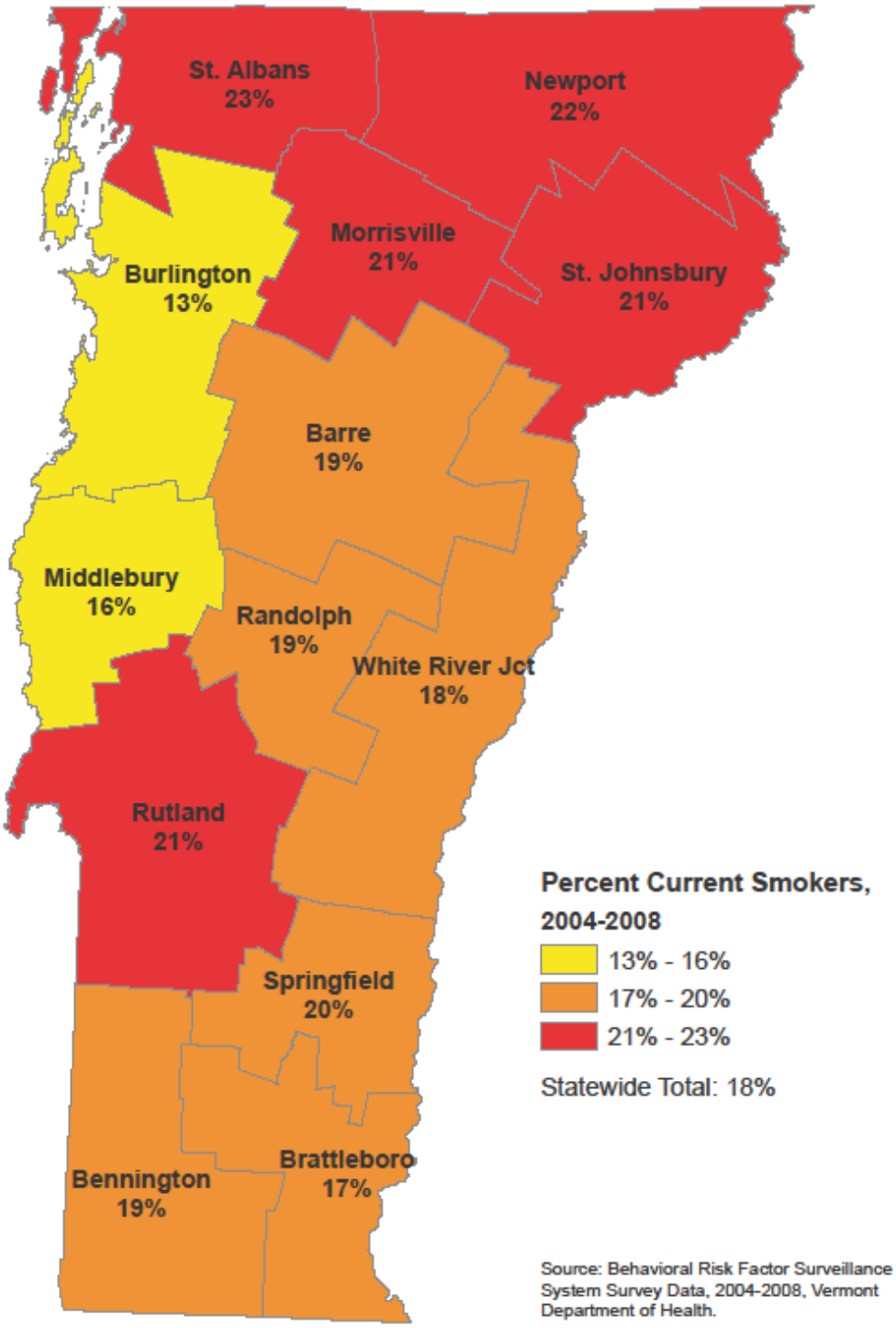


Source: Behavioral Risk Factor Surveillance System Survey Data, 2004-2008, Vermont Department of Health.

Percent of HSA Obese (BMI 30+)

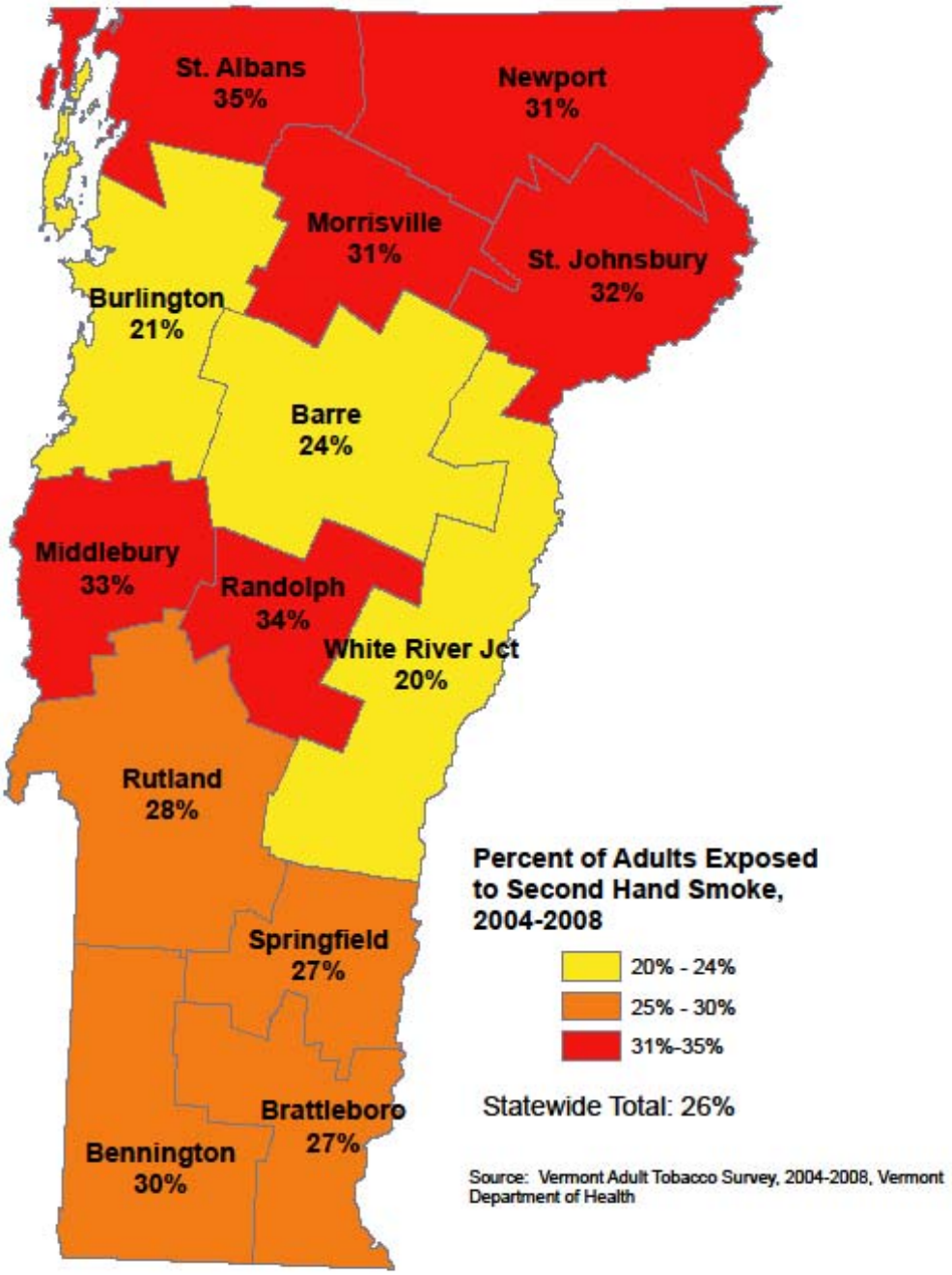


Percent of HSA Current Smokers

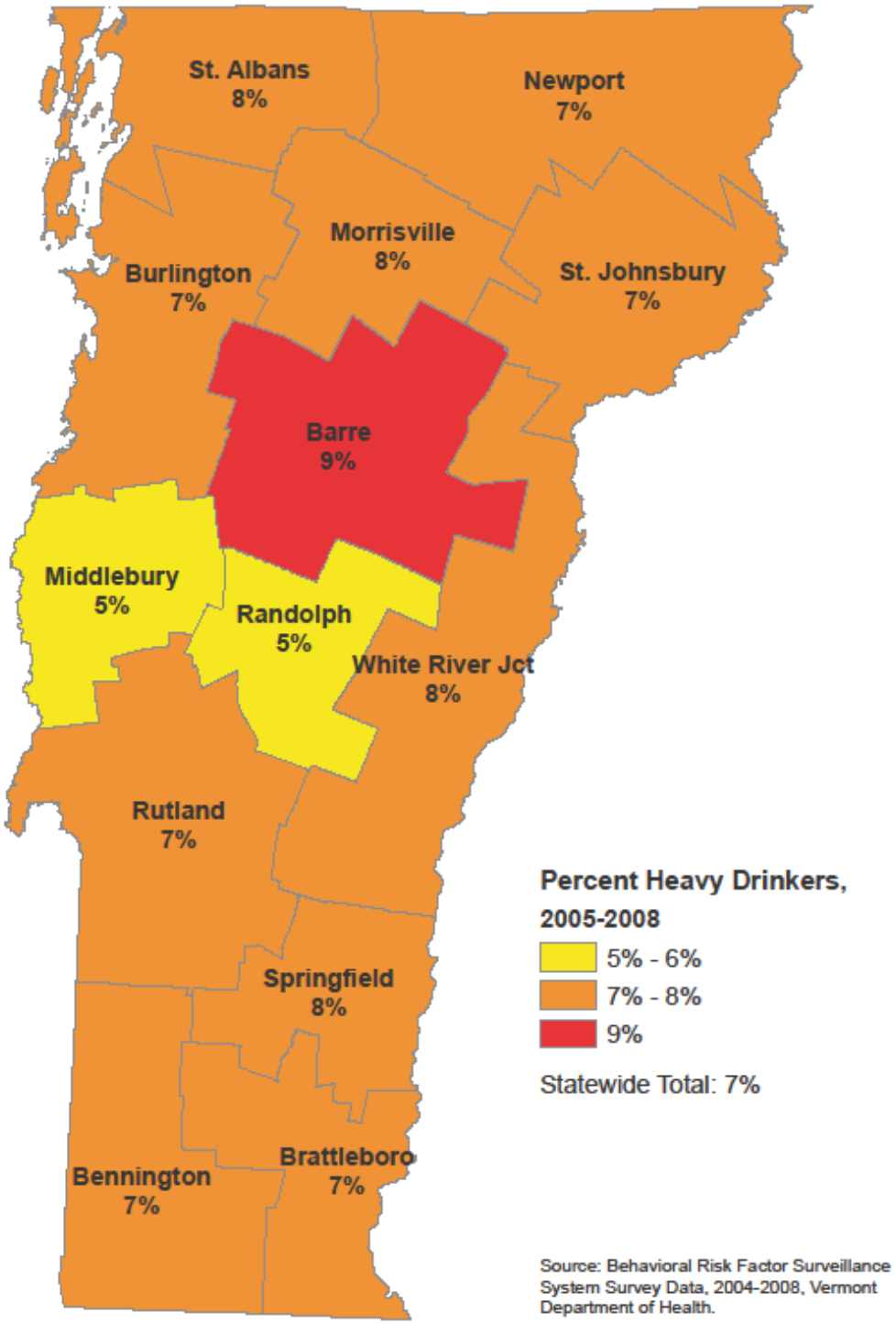


Source: Behavioral Risk Factor Surveillance System Survey Data, 2004-2008, Vermont Department of Health.

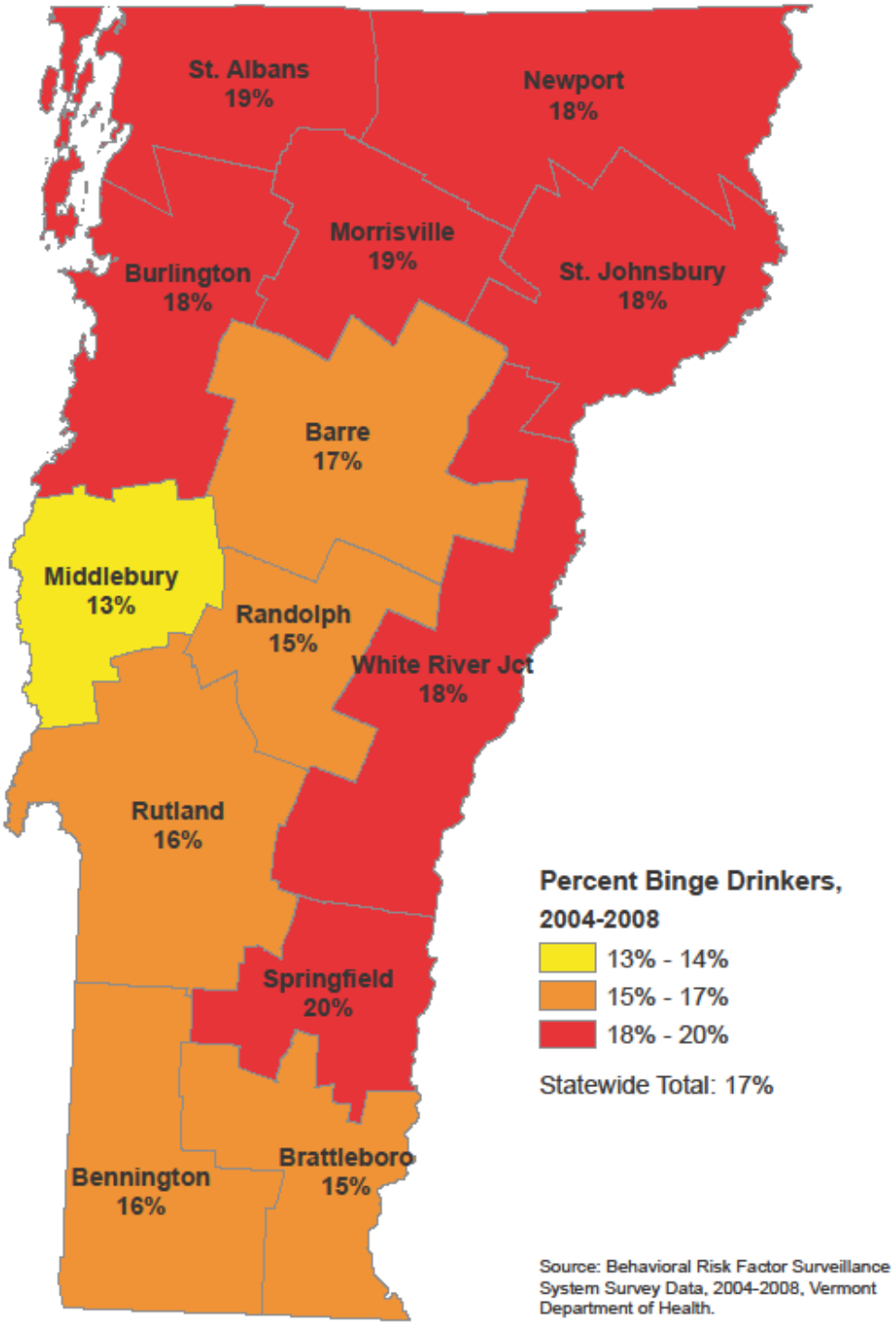
Percent of Adults in HSA Exposed to Second Hand Smoke



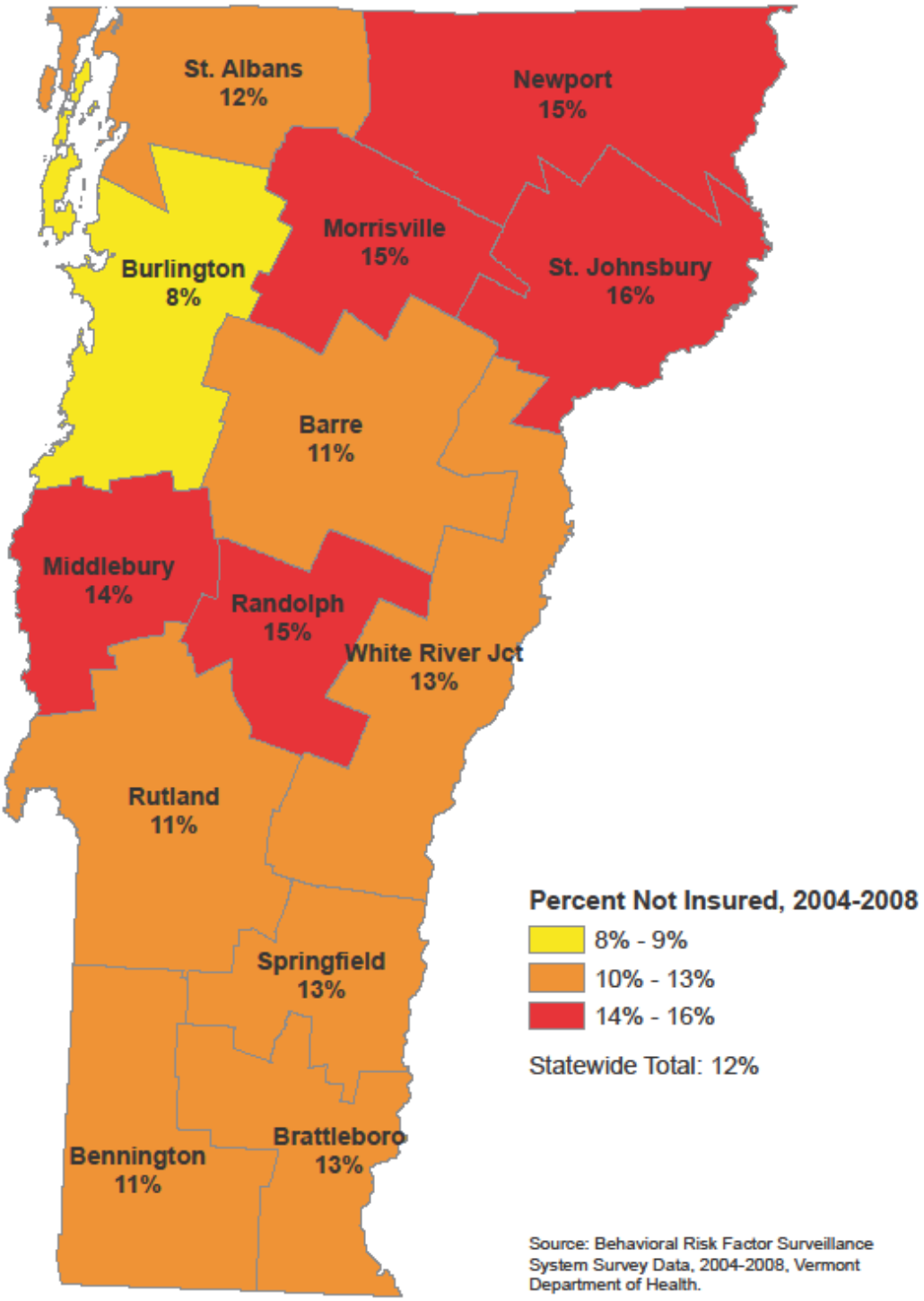
Percent of HSA Who Are Heavy Drinkers



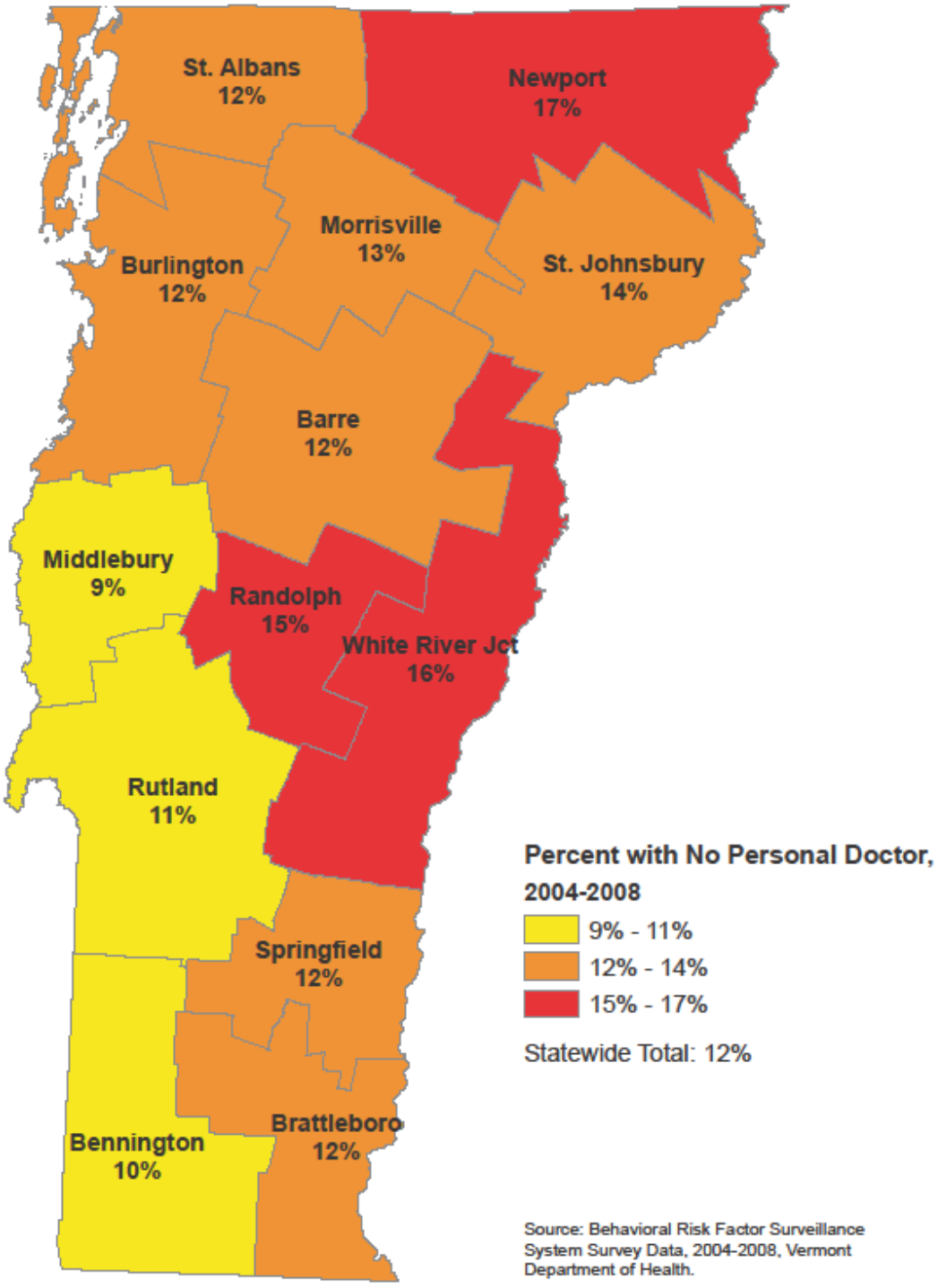
Percent of HSA That Binge Drink



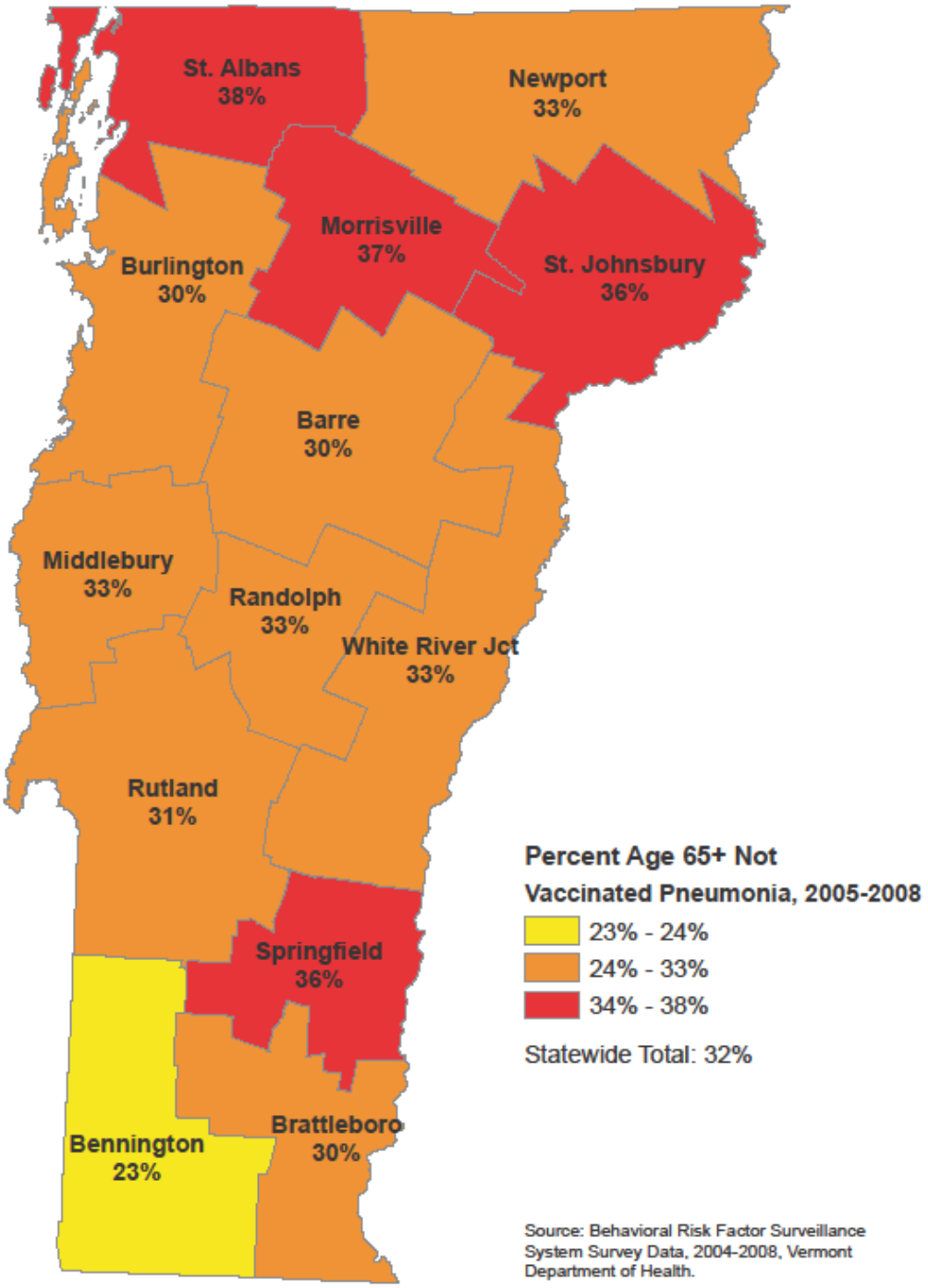
Percent In HSA Without Health Insurance



Percent In HSA with No Personal Doctor



Percent In HSA 65+ Not Vaccinated for Pneumonia

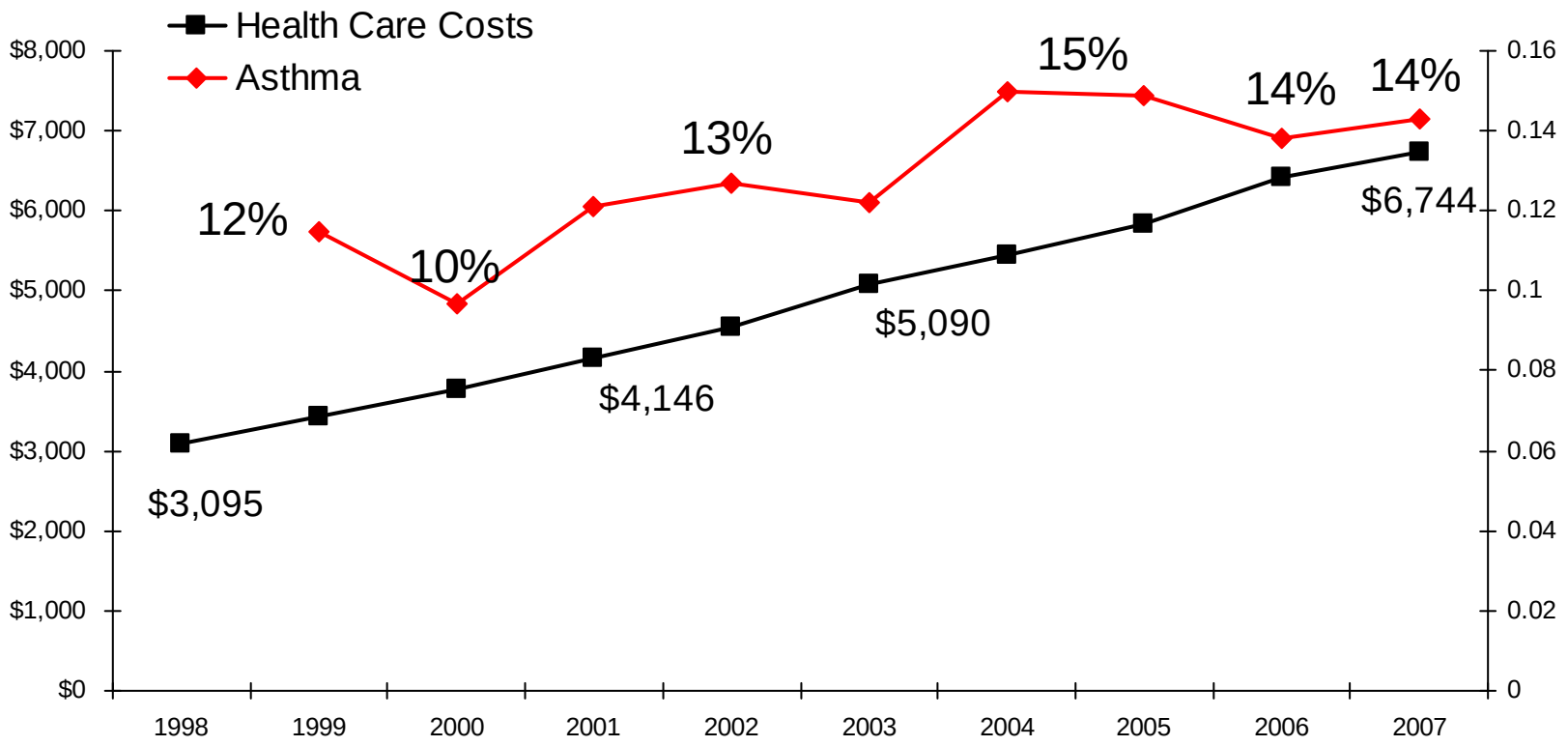


All Data Organized by

Condition

Asthma

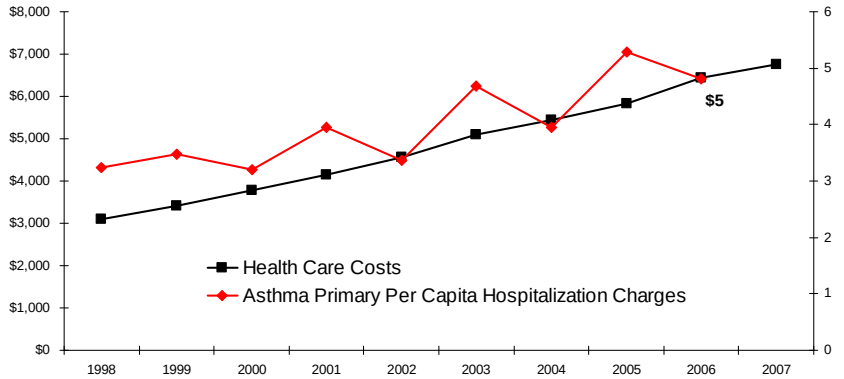
Statewide Asthma Prevalence and Per Capita Health Care Cost 1998 - 2007



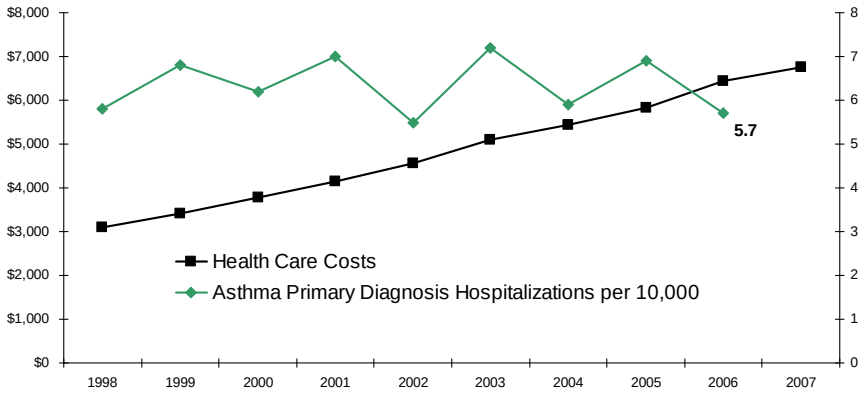
$R^2 = 0.65$; Sig = 0.009

Disease Prevalence is self-reported (from BRFSS)

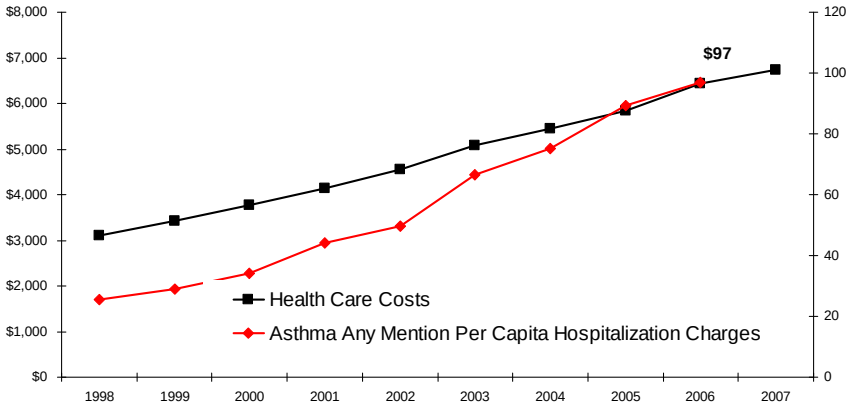
Per Capita Health Care Costs and Asthma Hospitalizations



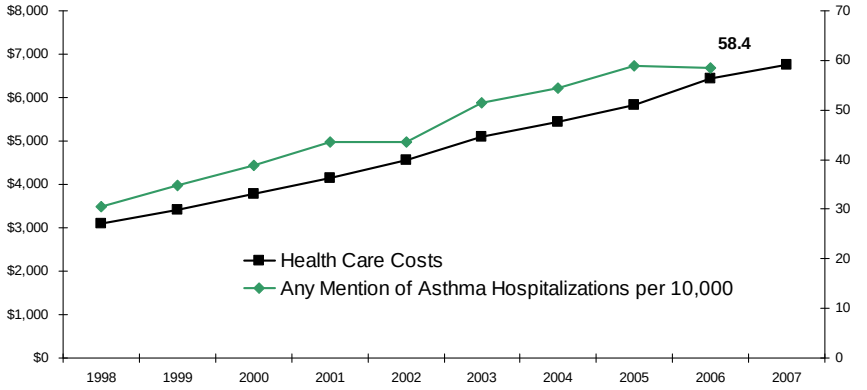
$R^2 = 0.71$; Sig = 0.005



$R^2 = 0.01$; Sig = 0.86

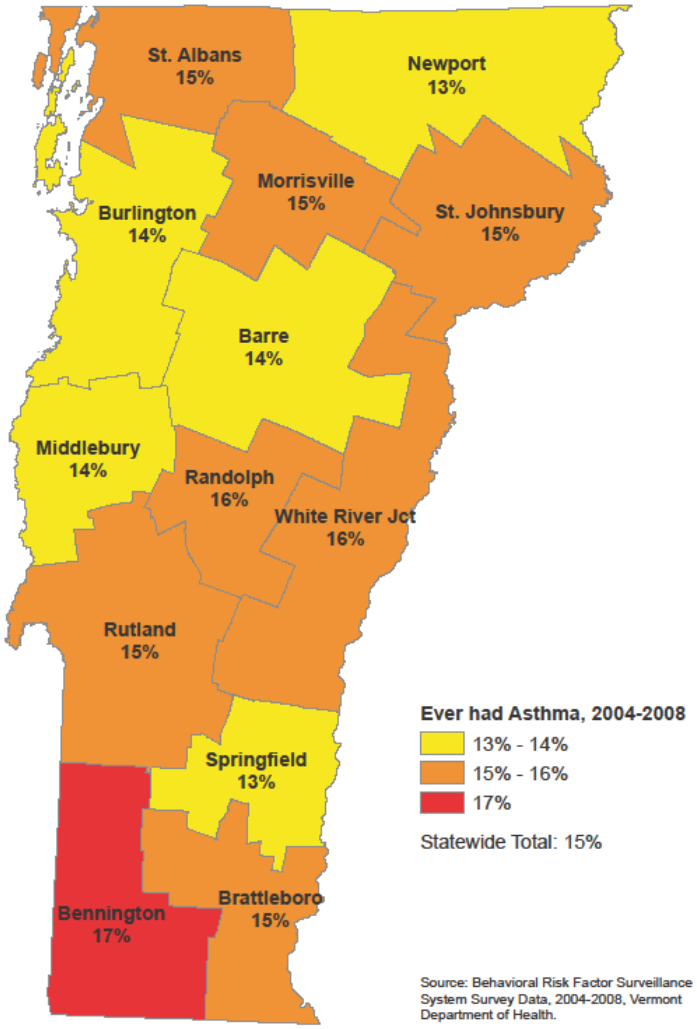


$R^2 = 0.99$; Sig < 0.001



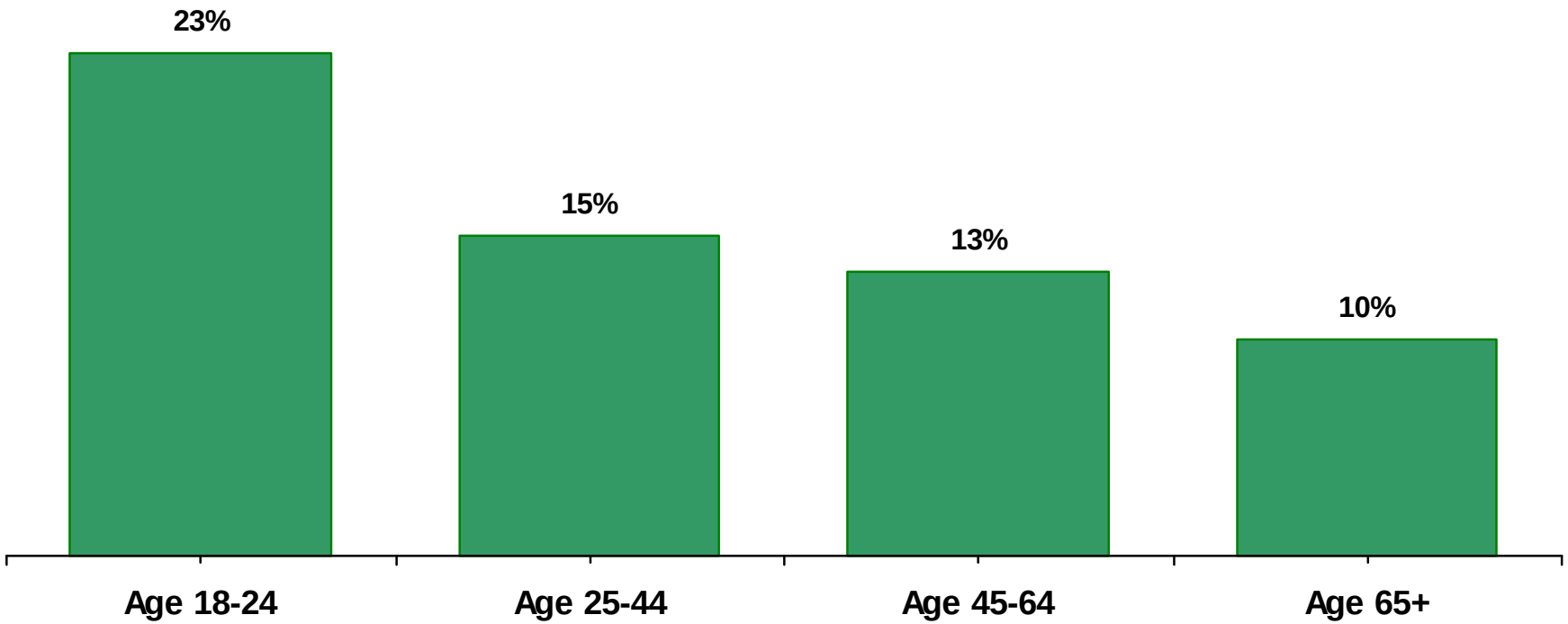
$R^2 = 0.96$; Sig <0.001

Adult (18+) Asthma Prevalence by HSA



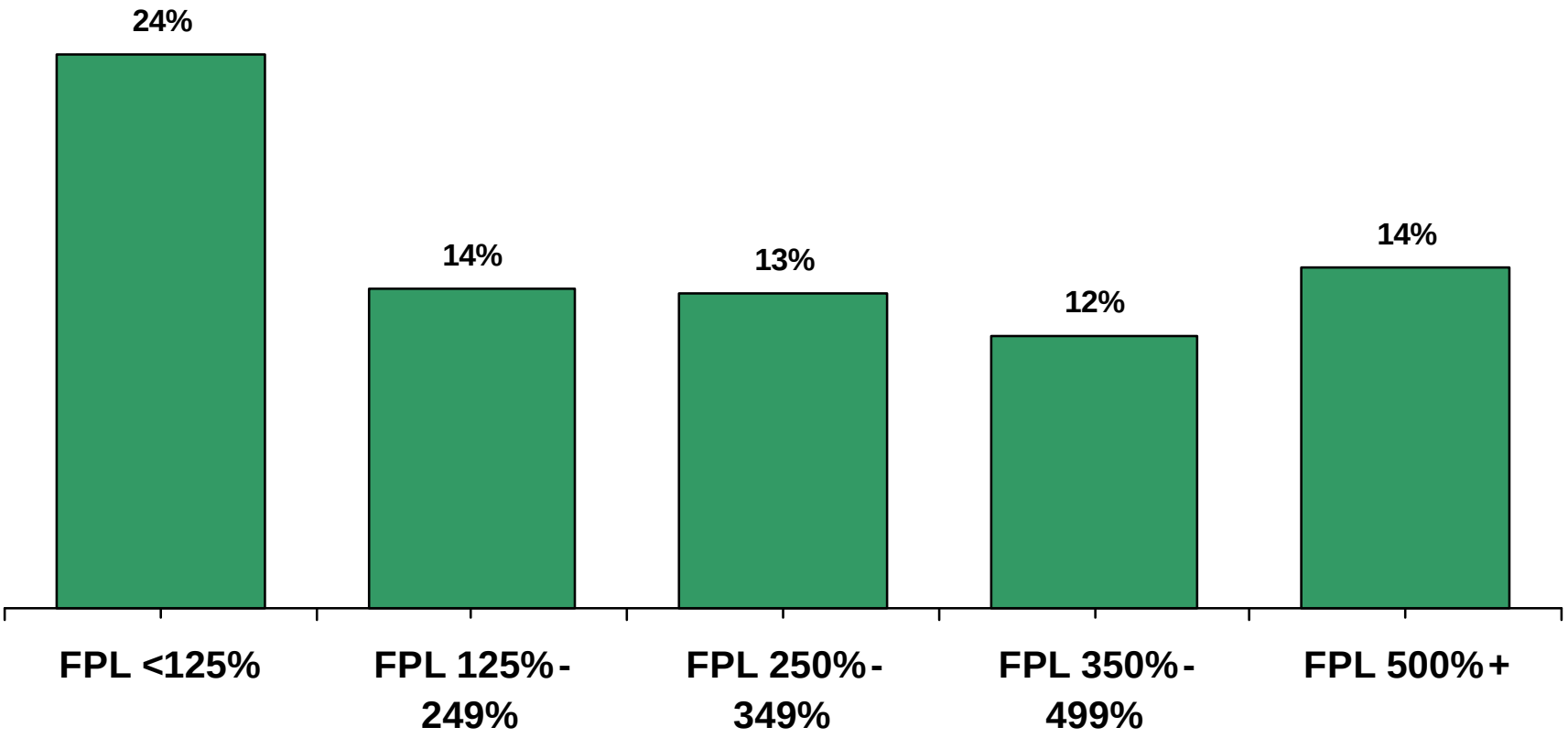
Asthma – Prevalence (18+)

Age Groups; Statewide

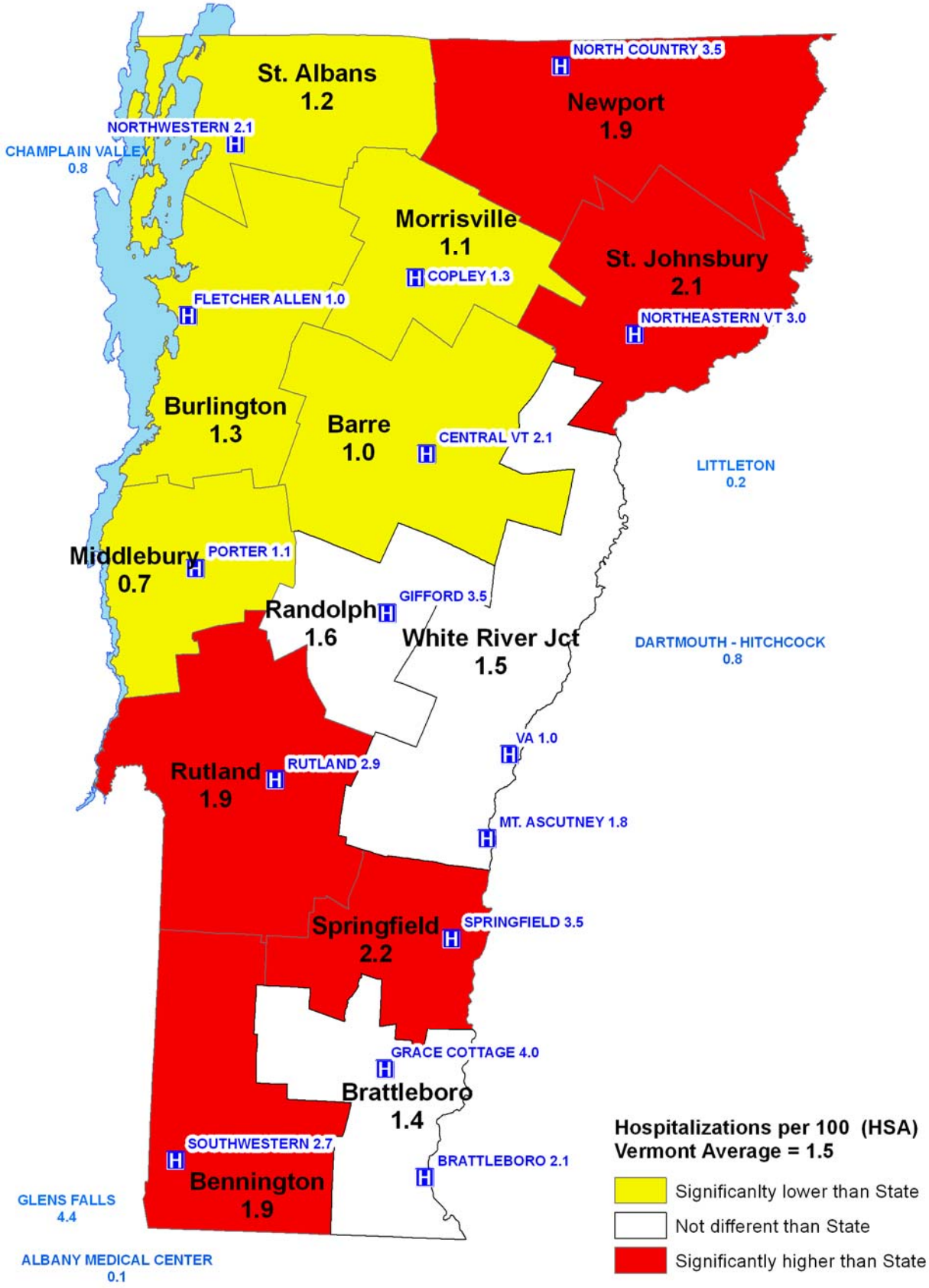


Asthma – Prevalence (18+)

FPL Groups; Statewide

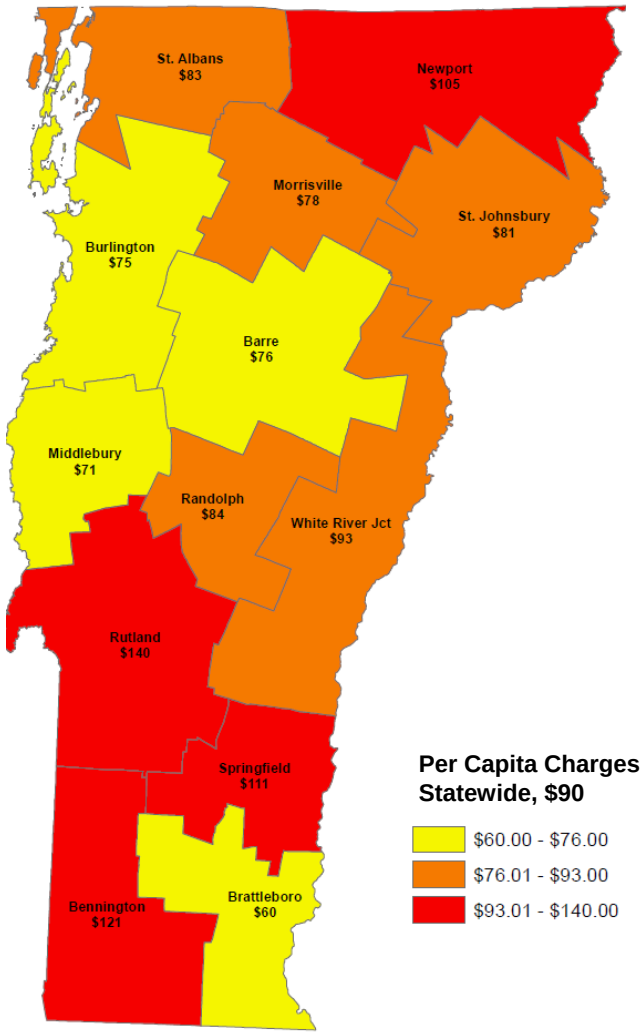


Asthma Diagnosis (Primary) per 100 Hospitalizations By Hospital Service Area and Hospital

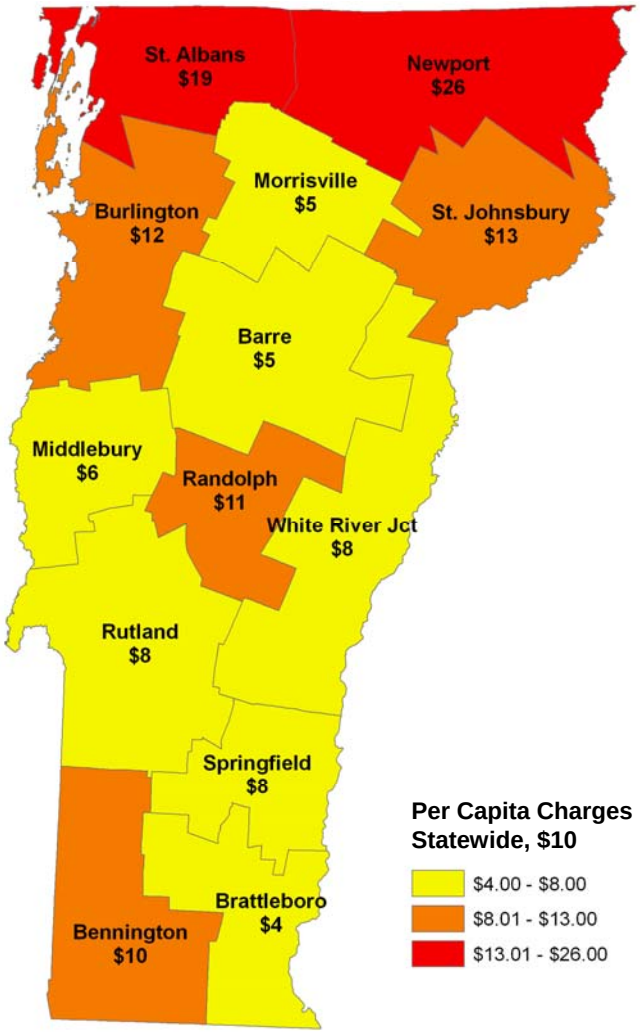


Note: Data Age and Severity Adjusted, 1997-2006 Combined

Asthma Related Charges 2004 – 2006, by HSA

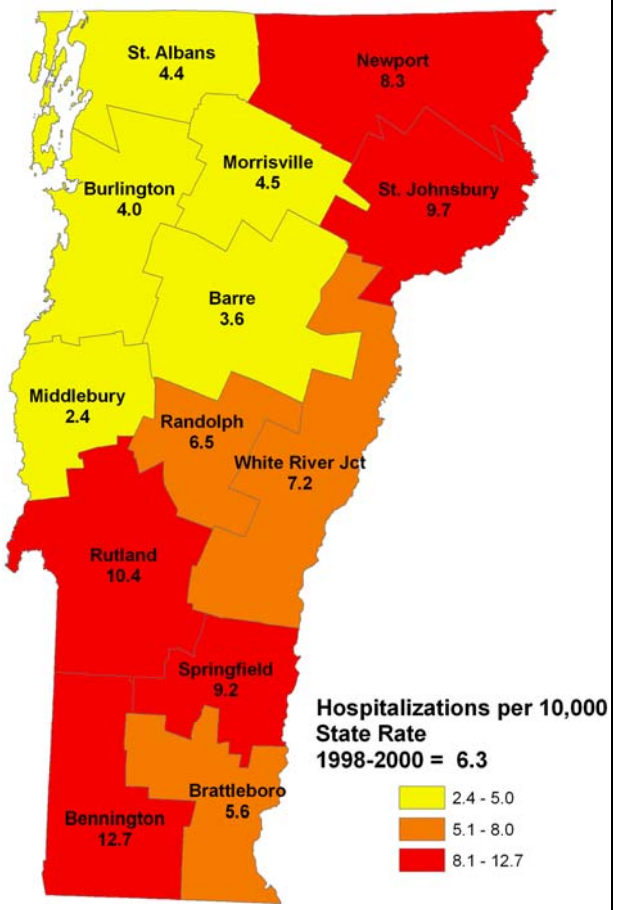


Hospitalization Charges

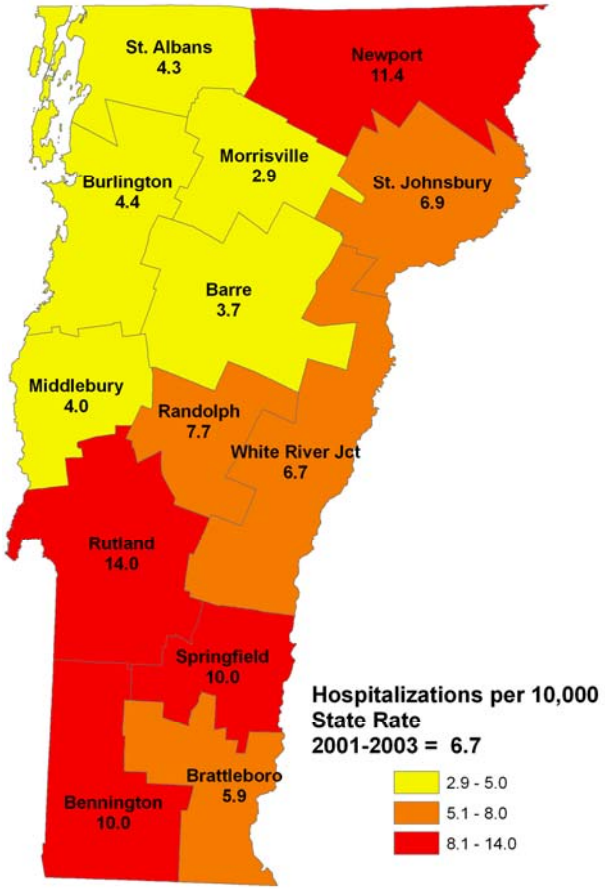


ED Visit Charges

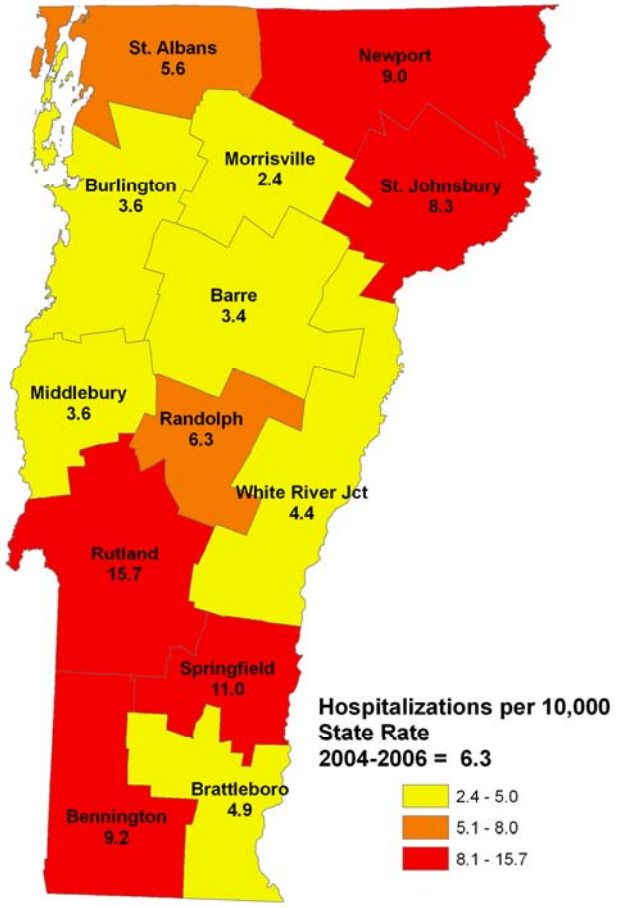
Average Annual Asthma Hospitalization Rates – Primary DX, by HSA



1998-2000

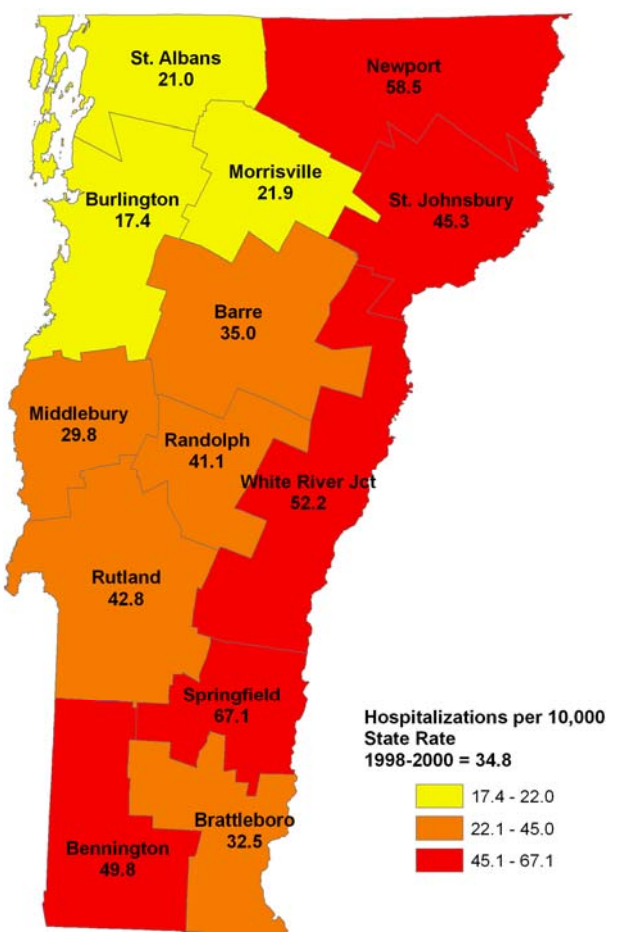


2001-2003

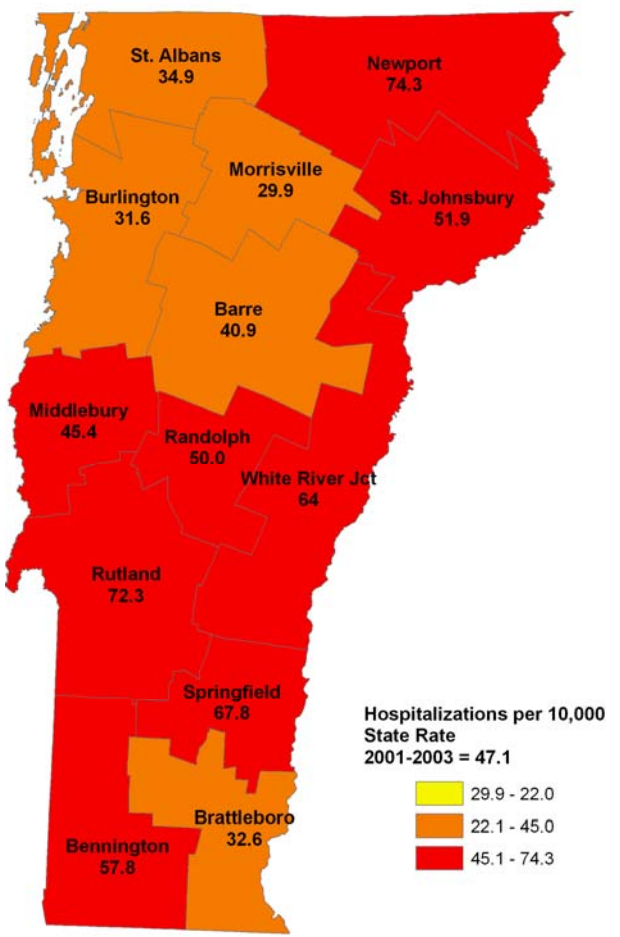


2004-2006

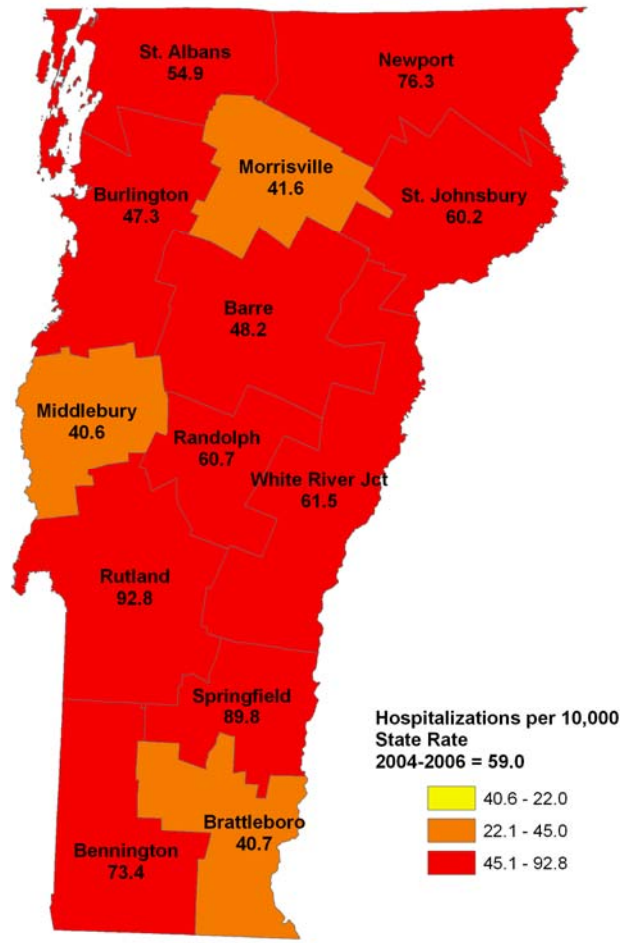
Average Annual Asthma Hospitalization Rates – Any Mention DX, by HSA



1998-2000

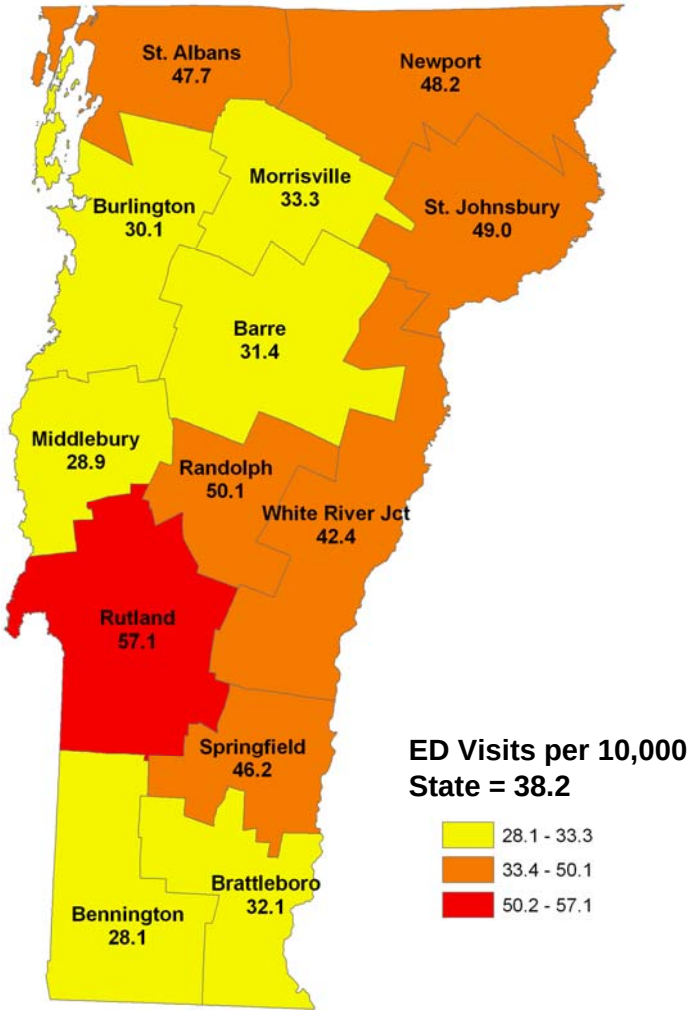


2001-2003

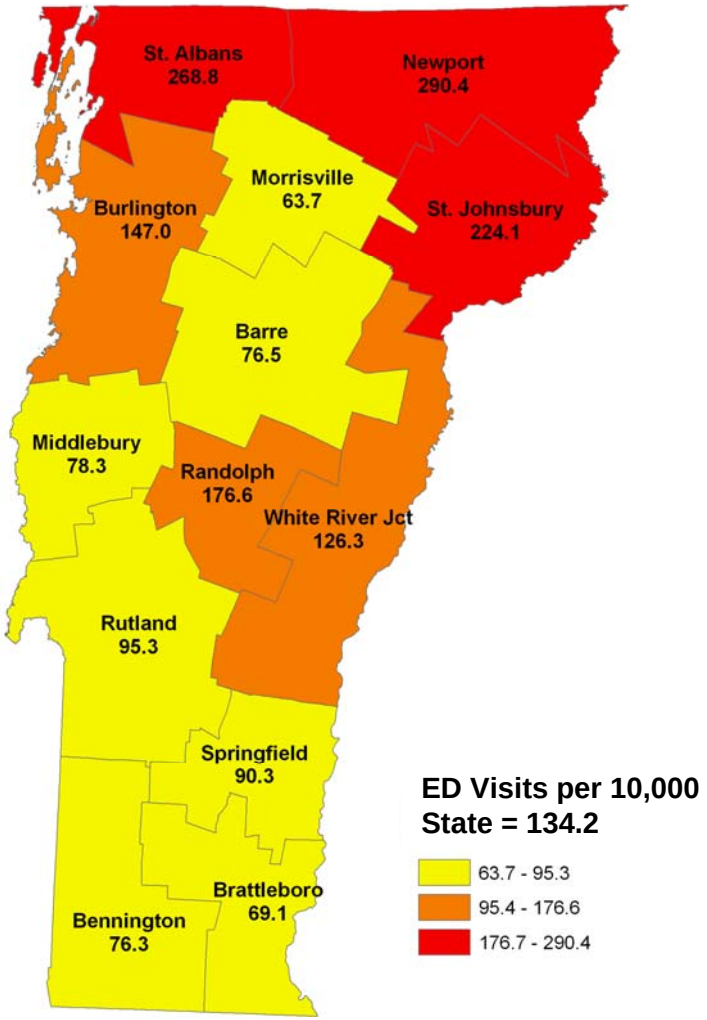


2004-2006

Average Annual Asthma ED Visit Rates, 2004-2006, by HSA



Primary DX



Any Mention DX

Hospitalizations for Asthma, Primary Diagnosis, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	129	3.5	39	$5,177	0.8	3.2	$1,479
Central Vermont	222	3.2	40	$5,995	0.3	4.5	$1,873
Copley Hospital	64	3.2	38	$4,599	0.1	3.3	$1,437
Fletcher Allen Health Care	741	3.2	32	$6,253	0.3	4.0	$1,954
Gifford Memorial Hospital	99	3.1	46	$5,611	0.3	4.3	$1,810
Grace Cottage	21	3.1	51	$3,669	2.5	5.1	$1,184
MT. Ascutney	29	3.2	58	$5,814	0.1	4.6	$1,817
North Country Hospital	222	3.0	38	$6,561	0.1	6.6	$2,187
Northeastern Vermont Regional Hospital	217	2.3	19	$3,945	0.8	2.6	$1,715
Northwestern Medical Center	161	3.1	46	$4,762	0.2	4.0	$1,536
Porter Hospital	83	3.3	53	$5,805	0.4	4.6	$1,759
Rutland Regional Medical Center	840	4.0	49	$7,377	0.2	6.0	$1,844
Southwestern Medical Center	400	3.7	45	$5,735	0.4	3.5	$1,550
Springfield Hospital	245	2.8	35	$5,072	0.1	4.1	$1,811
Veteran's Administration Center	45	4.2	55	n/a	0.4	5.0	n/a
NH-Dartmouth Hitchcock Hospital	259	3.7	32	$8,400	0.3	5.9	$2,270
NY-Albany Medical Center	2	2.0	38	$10,923	2.0	6.0	$5,462
Vermont Total	**3,779**	**3.4**	**40**	**$6,168**	**0.3**	**4.6**	**$1,814**

Hospitalizations for Asthma, Any Mention DX, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	556	4.6	53	$8,423	1.2	4.9	$1,831
Central Vermont	1924	4.8	47	$8,378	0.8	6.4	$1,745
Copley Hospital	327	4	50	$11,650	1.3	5.6	$2,913
Fletcher Allen Health Care	6960	5.5	47	$15,234	1.7	7.2	$2,770
Gifford Memorial Hospital	425	3.3	57	$8,826	0.7	6.1	$2,675
Grace Cottage	73	2.9	63	$3,550	2.6	6.7	$1,224
MT. Ascutney	163	3.6	63	$9,881	0.6	6.4	$2,745
North Country Hospital	1278	3	47	$8,588	1.1	8.8	$2,863
Northeastern Vermont Regional Hospital	925	3	40	$8,041	1.1	5.4	$2,680
Northwestern Medical Center	787	3.8	54	$7,993	0.7	5.6	$2,103
Porter Hospital	543	3.9	62	$8,822	1.2	6.2	$2,262
Rutland Regional Medical Center	3592	4.9	55	$9,967	0.6	8	$2,034
Southwestern Medical Center	1665	4.1	55	$9,637	1.5	5.4	$2,350
Springfield Hospital	1695	4.2	44	$6,803	1.1	6.5	$1,620
Veteran's Administration Center	265	4.6	59	n/a	0.4	5.7	n/a
NH-Dartmouth Hitchcock Hospital	4522	4	48	$15,289	2.1	7.6	$3,822
NY-Albany Medical Center	173	5.9	45	$29,687	4.2	8.1	$5,032
Vermont Total	**25,873**	**4.5**	**50**	**$11,784**	**1.4**	**7.0**	**$2,602**

Hospitalizations for Asthma, Primary Diagnosis, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	236	3.1	39	$6,015	0.3	4.5	$1,940
Bennington	436	3.7	44	$5,716	0.4	3.5	$1,545
Brattleboro	167	3.3	40	$5,116	0.9	3.4	$1,550
Burlington	653	3.1	34	$5,762	0.3	4.0	$1,859
Middlebury	95	3.2	45	$6,314	0.4	4.3	$1,973
Morrisville	87	3.1	37	$5,067	0.2	3.7	$1,635
Newport	257	2.9	37	$6,539	0.1	6.1	$2,255
Randolph	108	3.2	45	$5,877	0.3	4.6	$1,837
Rutland	855	4.0	48	$7,411	0.3	5.9	$1,853
Springfield	279	3.0	35	$5,773	0.1	4.3	$1,924
St. Albans	197	3.7	42	$6,251	0.2	4.1	$1,689
St. Johnsbury	225	2.7	23	$4,827	0.8	3.0	$1,788
White River Jct.	294	3.3	39	$6,669	0.2	5.3	$2,021
Vermont Total	**3,889**	**3.4**	**40**	**$6,199**	**0.3**	**4.6**	**$1,834**

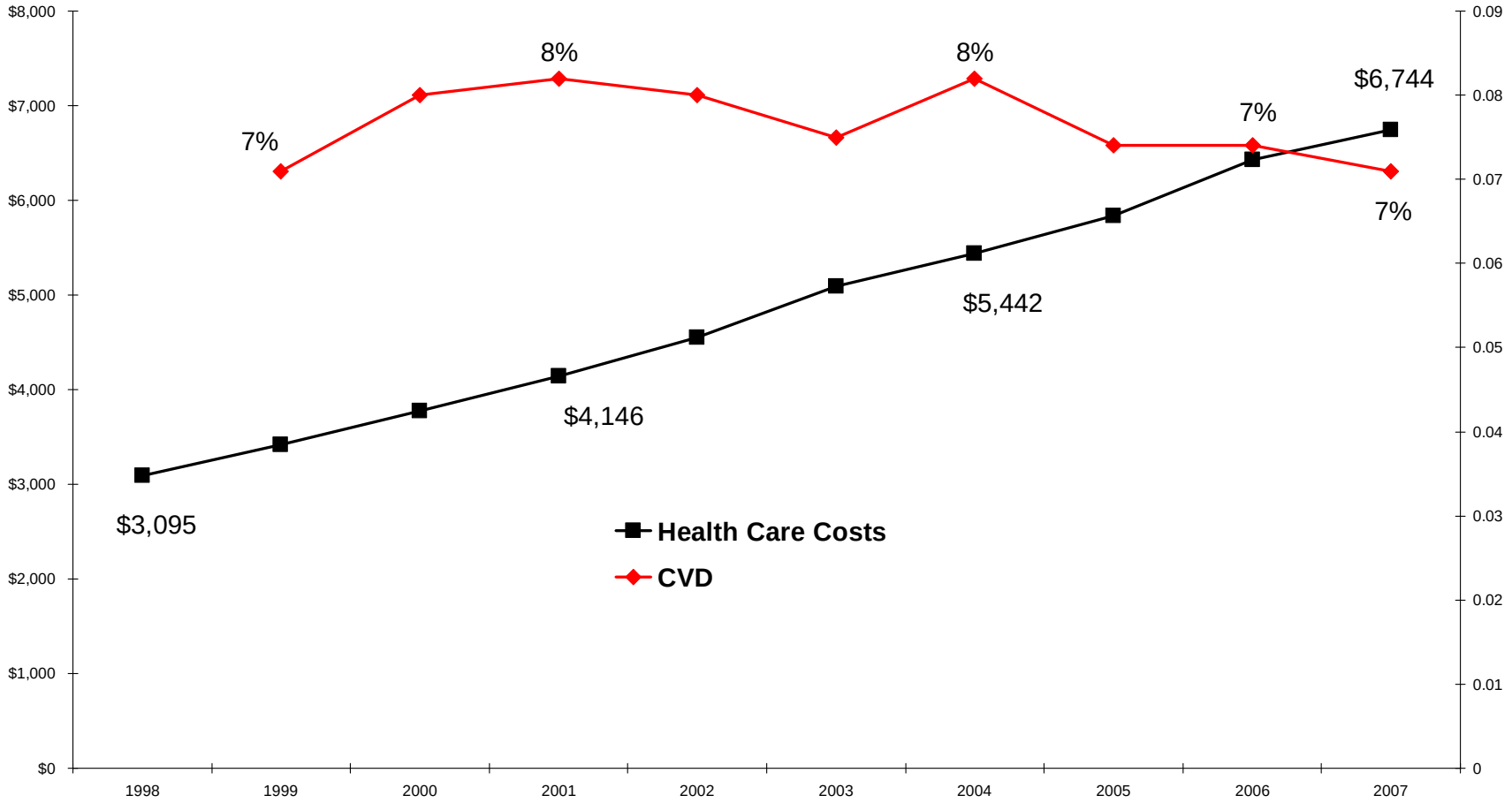
Hospitalizations for Asthma, Any Mention DX, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	2,640	4.8	48	$12,043	1.3	6.9	$2,509
Bennington	2,392	4.5	52	$12,537	1.8	6.0	$2,786
Brattleboro	1,128	4.8	50	$10,773	1.7	6.0	$2,244
Burlington	4,969	5.1	48	$13,641	1.5	7.0	$2,675
Middlebury	1,038	4.6	51	$11,947	1.5	6.6	$2,597
Morrisville	752	5.2	47	$15,010	1.6	6.6	$2,887
Newport	1,831	3.7	46	$10,841	1.3	8.2	$2,930
Randolph	708	4.1	53	$11,535	1.2	6.7	$2,813
Rutland	4,216	5.0	54	$12,266	1.0	7.9	$2,453
Springfield	2,048	3.8	47	$10,025	1.2	6.7	$2,638
St. Albans	1,494	5.1	49	$13,297	1.3	6.6	$2,607
St. Johnsbury	1,395	3.8	44	$11,034	1.5	6.3	$2,904
White River Jct.	2,774	3.8	48	$11,106	1.4	7.2	$2,923
Vermont Total	**27,385**	**4.6**	**49**	**$12,114**	**1.4**	**7.0**	**$2,656**

Hospitalizations for RESPIRATORY DX Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	1,872	6.2	66	$9,323	2	2.5	$1,504
Central Vermont	4,568	5.2	66	$10,996	1.7	2.9	$2,115
Copley Hospital	1,771	4.5	66	$6,858	1.4	2.6	$1,524
Fletcher Allen Health Care	12,535	7	56	$15,595	1.9	3	$2,228
Gifford Memorial Hospital	1,245	4.3	68	$8,223	1.5	2.8	$1,912
Grace Cottage	467	3.1	73	$3,832	3	2.9	$1,236
MT. Ascutney	647	4.3	75	$7,097	1.1	2.9	$1,651
North Country Hospital	2,733	3.6	63	$9,546	1.3	3.6	$2,652
Northeastern Vermont Regional Hospital	2,115	3.6	50	$7,381	1.8	2.6	$2,050
Northwestern Medical Center	3,341	4.8	69	$7,402	1.3	2.7	$1,542
Porter Hospital	2,055	4.9	70	$8,563	1.7	2.8	$1,748
Rutland Regional Medical Center	7,864	5.6	65	$12,489	1.6	3	$2,230
Southwestern Medical Center	5,493	4.7	66	$9,434	1.8	2.7	$2,007
Springfield Hospital	2,750	4.4	64	$8,808	1.3	3	$2,002
Veteran's Administration Center	1,593	6.6	70	n/a	1.3	2.5	n/a
NH-Dartmouth Hitchcock Hospital	4,757	6.5	57	$20,270	2	3.3	$3,119
NY-Albany Medical Center	81	7.4	31	$24,420	2.6	2.7	$3,300
Vermont Total	**55,887**	**5.5**	**63**	**$11,782**	**1.7**	**2.9**	**$2,136**

RESPIRATORY DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	5,614	5.5	64	$12,479	1.1	7.0	$2,269
Bennington	6,353	4.9	65	$10,712	1.2	5.7	$2,186
Brattleboro	2,772	5.9	64	$11,324	1.6	5.7	$1,919
Burlington	9,982	6.4	60	$13,674	1.1	7.0	$2,137
Middlebury	2,584	5.8	62	$12,234	1.1	6.5	$2,109
Morrisville	2,175	5.4	62	$10,769	0.8	6.0	$1,994
Newport	3,572	4.5	61	$11,962	0.6	9.2	$2,658
Randolph	1,471	5.5	66	$12,537	0.9	6.8	$2,279
Rutland	8,607	5.8	64	$13,275	0.9	7.2	$2,289
Springfield	3,904	5.2	63	$12,024	0.7	7.0	$2,312
St. Albans	4,185	5.7	64	$10,667	0.7	6.2	$1,871
St. Johnsbury	2,774	4.3	55	$10,039	1.1	6.5	$2,335
White River Jct.	4,197	5.2	64	$12,566	0.7	7.1	$2,417
Vermont Total	**58,190**	**5.5**	**63**	**$12,178**	**1.0**	**6.8**	**$2,208**

Cardiovascular Disease (Including Stroke)

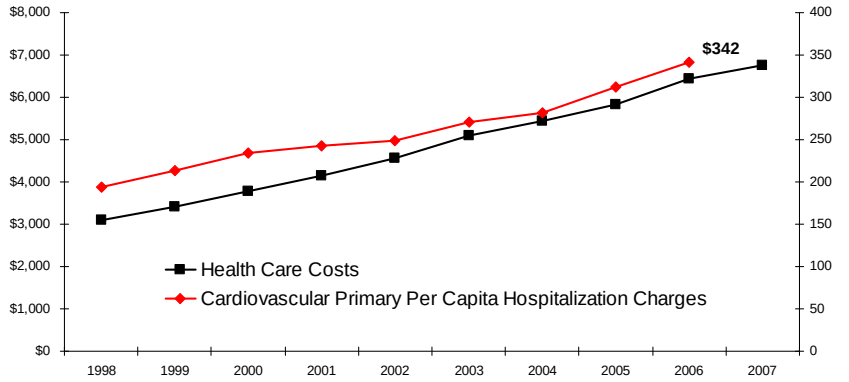
Per Capita Health Care Costs and Cardiovascular Disease



$R^2 = 0.06$; Sig = 0.5

Disease Prevalence is self-reported (from BRFSS)

Per Capita Health Care Costs and Cardiovascular Disease Hospitalizations



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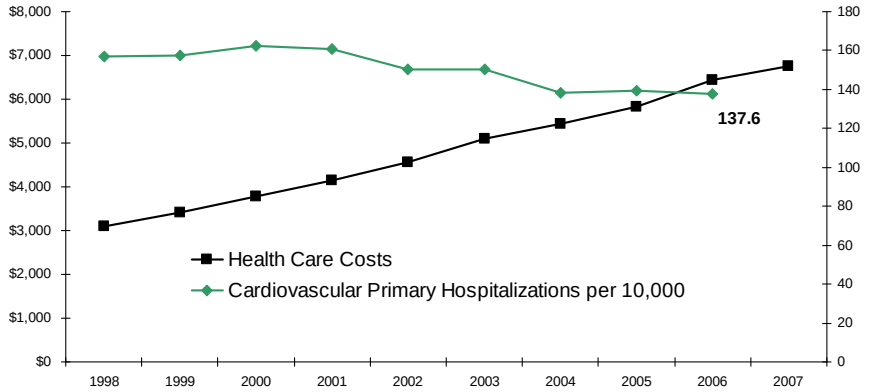

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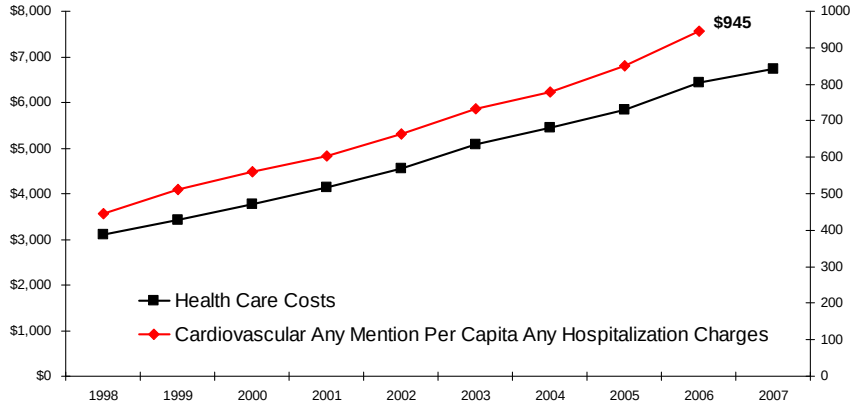

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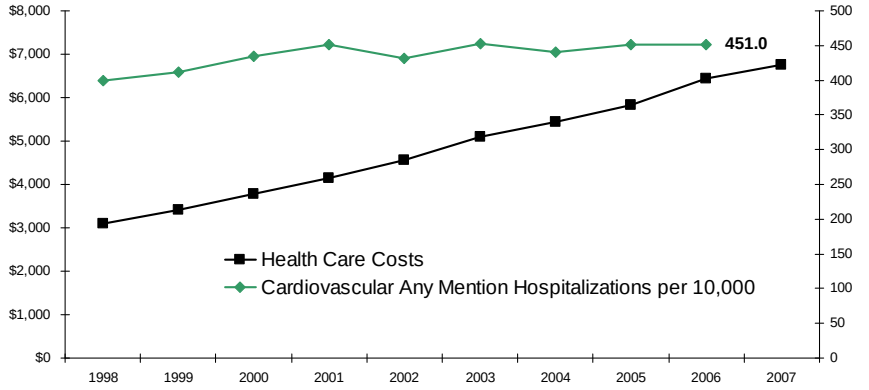
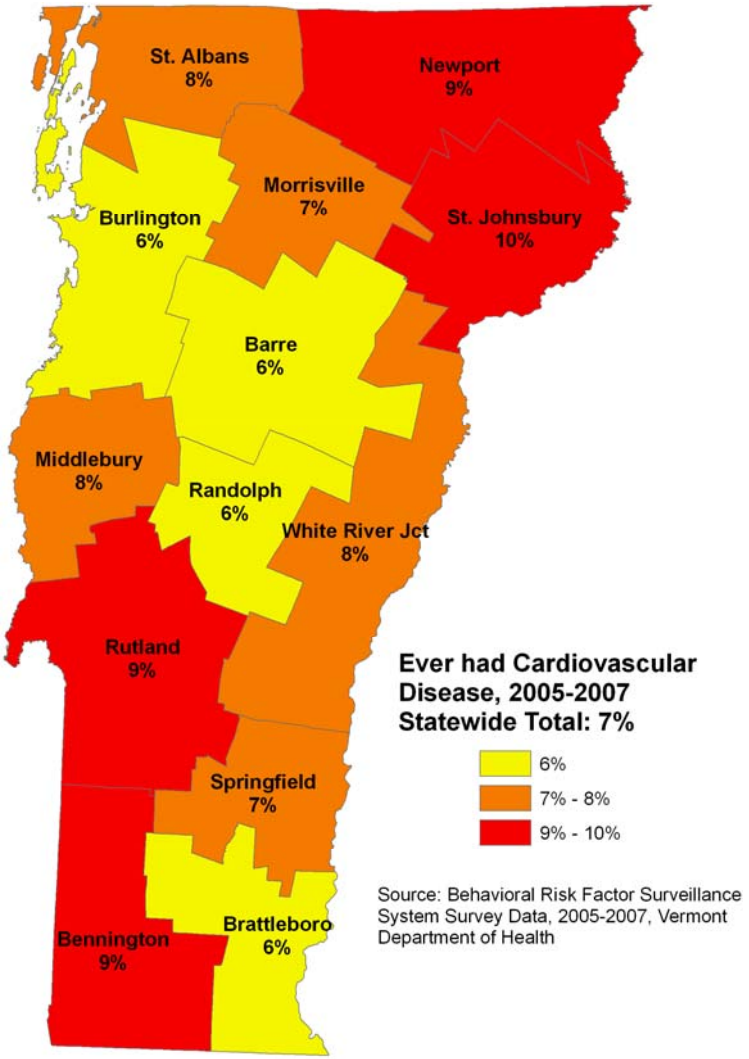


$R^2 = 0.62$; Sig = 0.01

Cardiovascular Disease Prevalence by HSA



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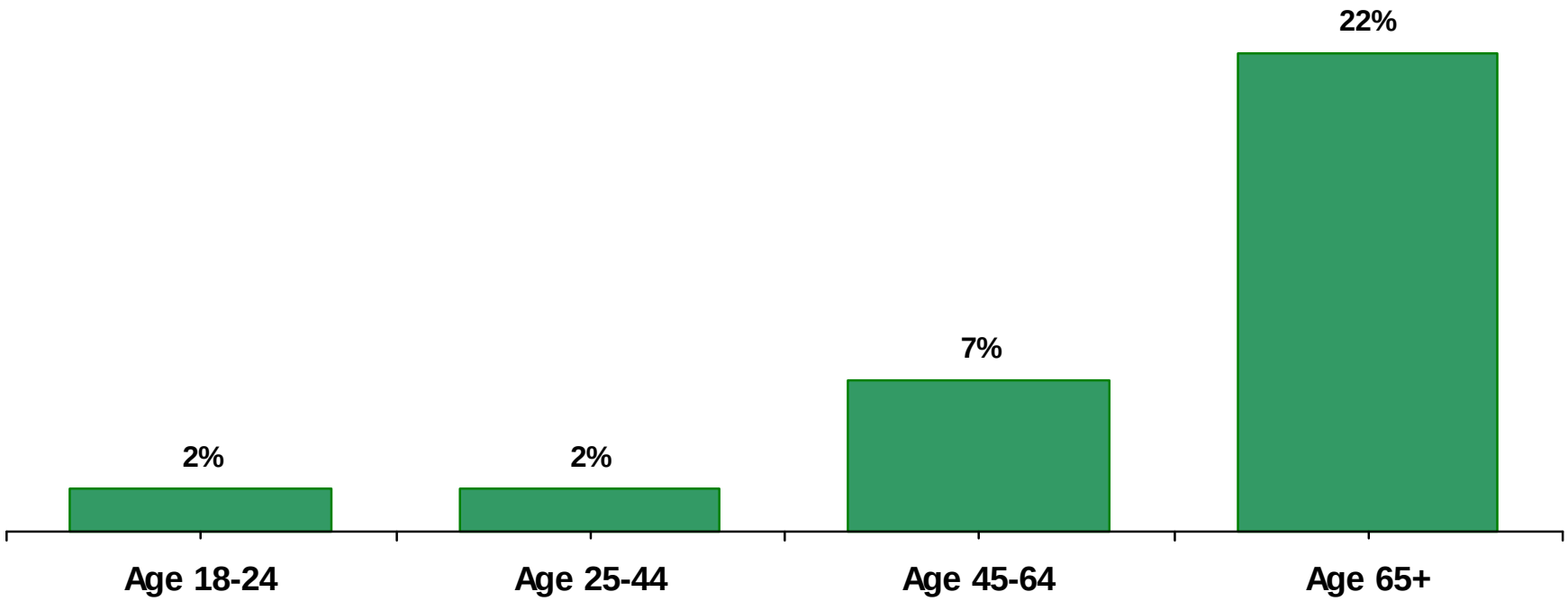
Cardiovascular Disease – Prevalence

Age Groups; Statewide



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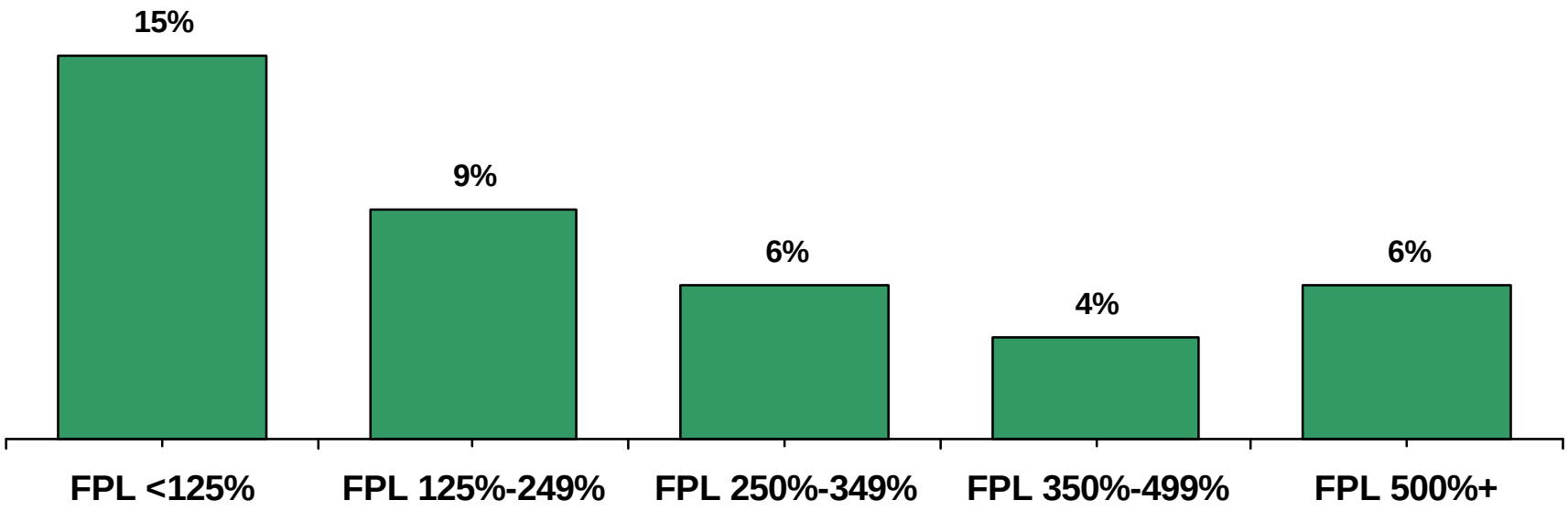
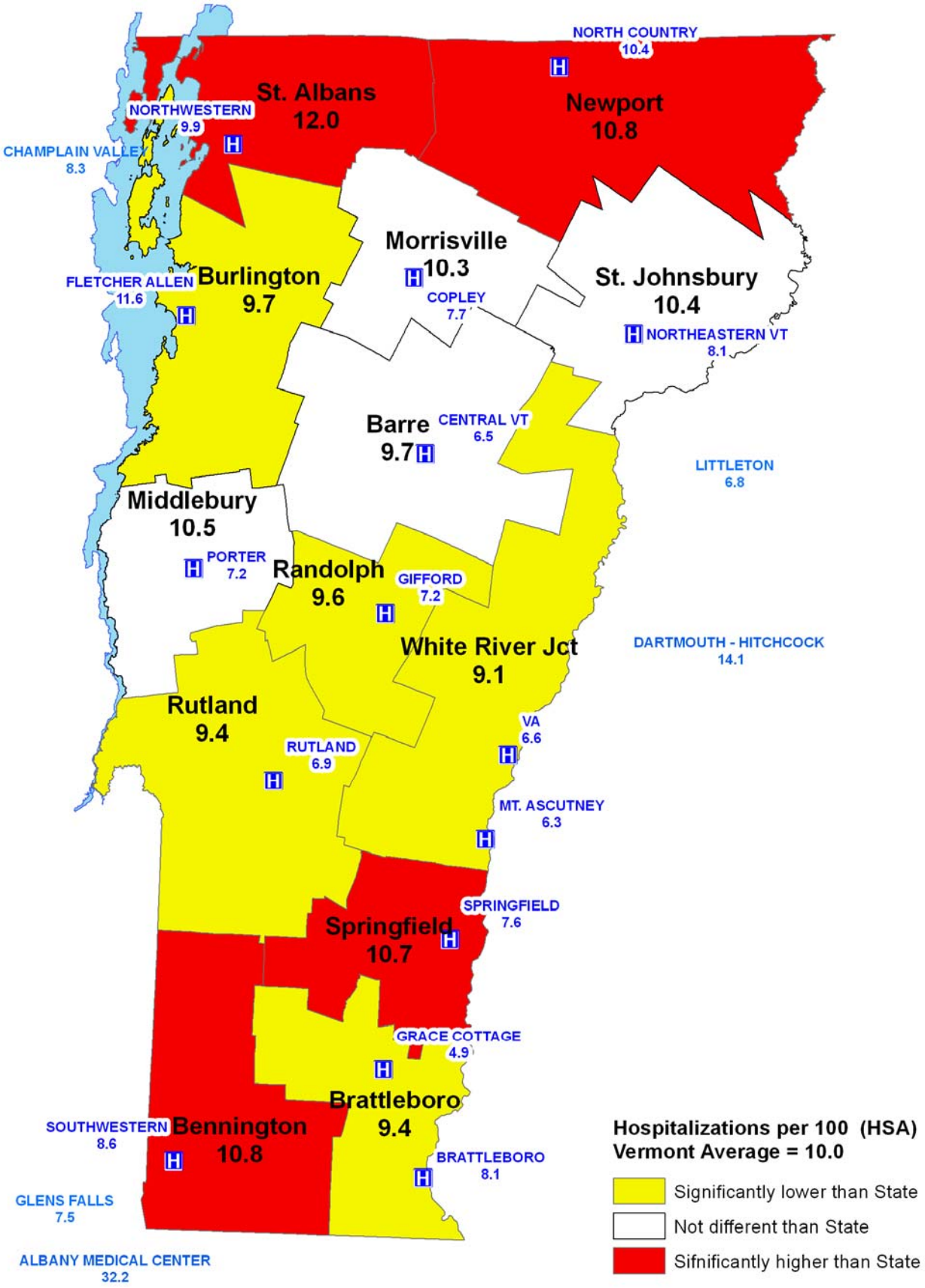
Cardiovascular Disease – Prevalence

FPL Groups; Statewide

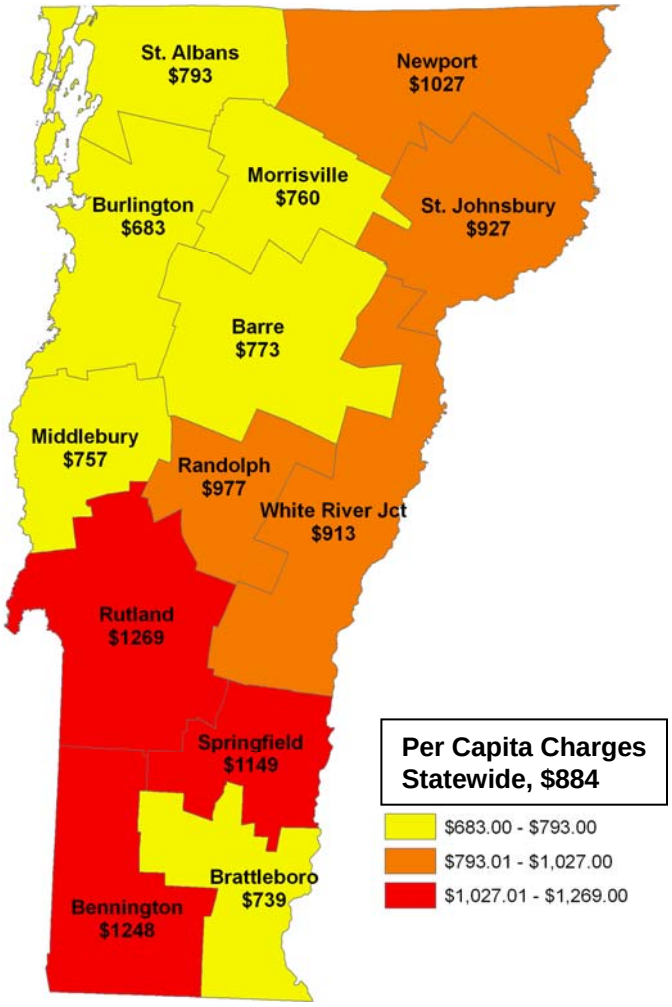


CVD Diagnosis (Primary) per 100 Hospitalizations By Hospital Service Area and Hospital

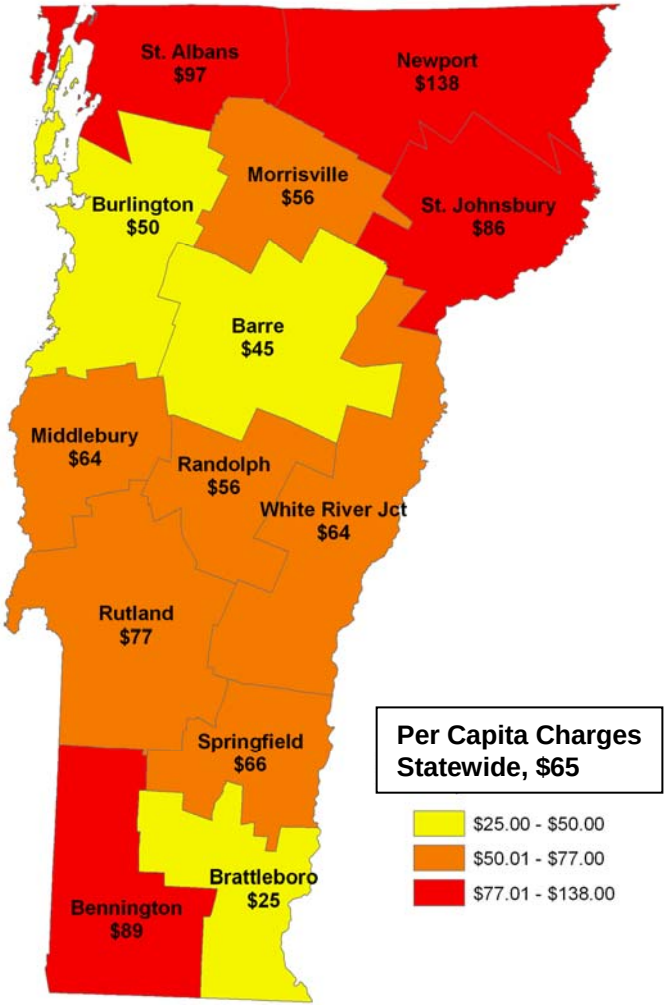


Note: Data Age and Severity Adjusted, 1997-2006 Combined

Cardiovascular Related Charges, by HSA

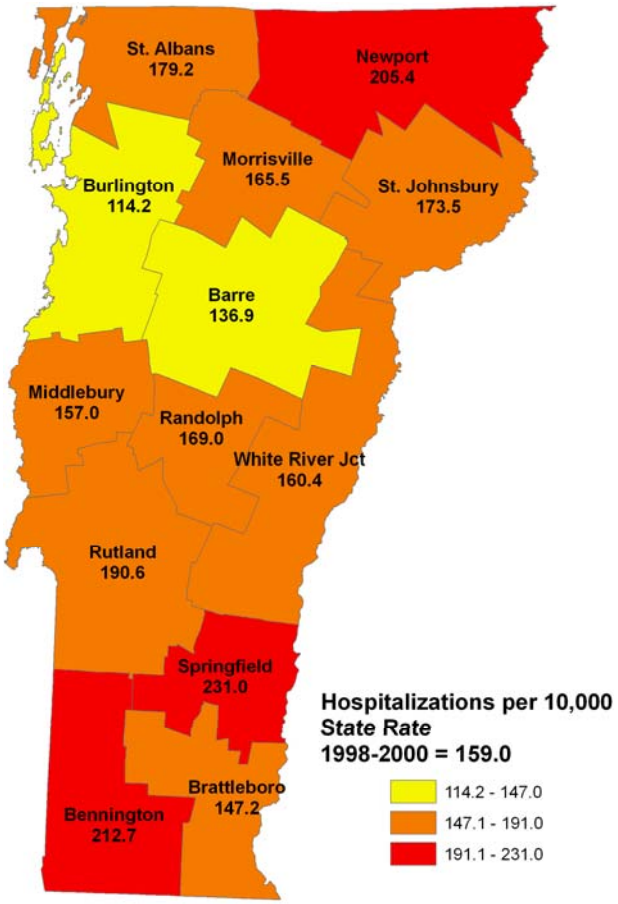


Hospitalization Charges, 2004-2006

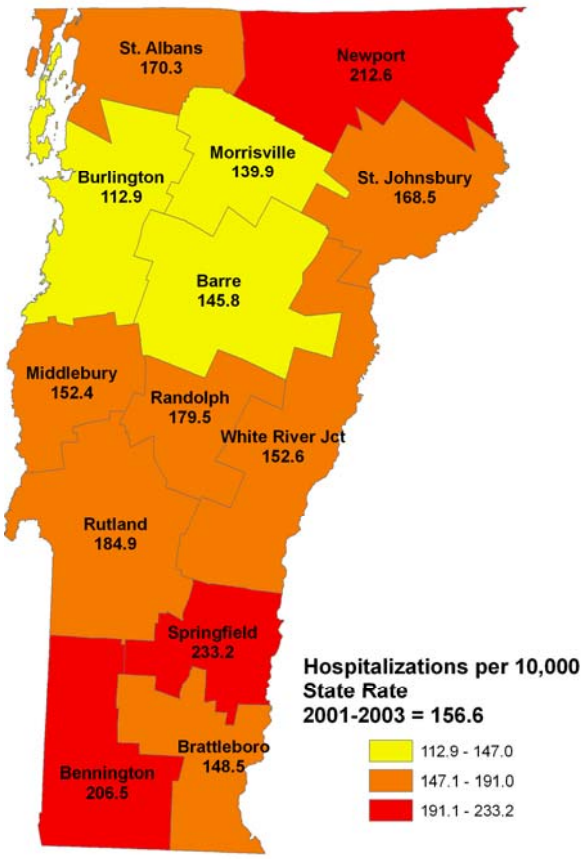


ED Visit Charges, 2004-2006

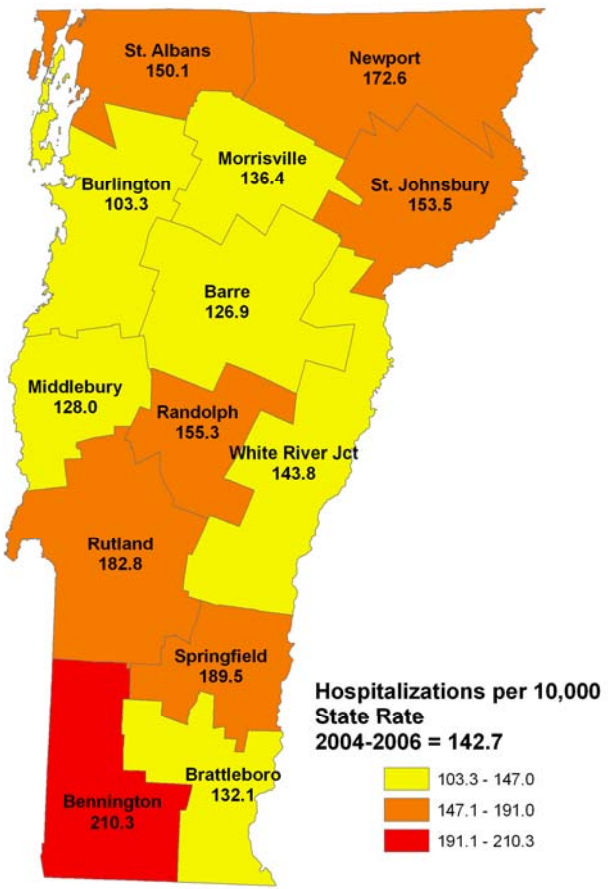
Average Annual Cardiovascular Hospitalization Rates – Primary DX, By HSA



1998-2000

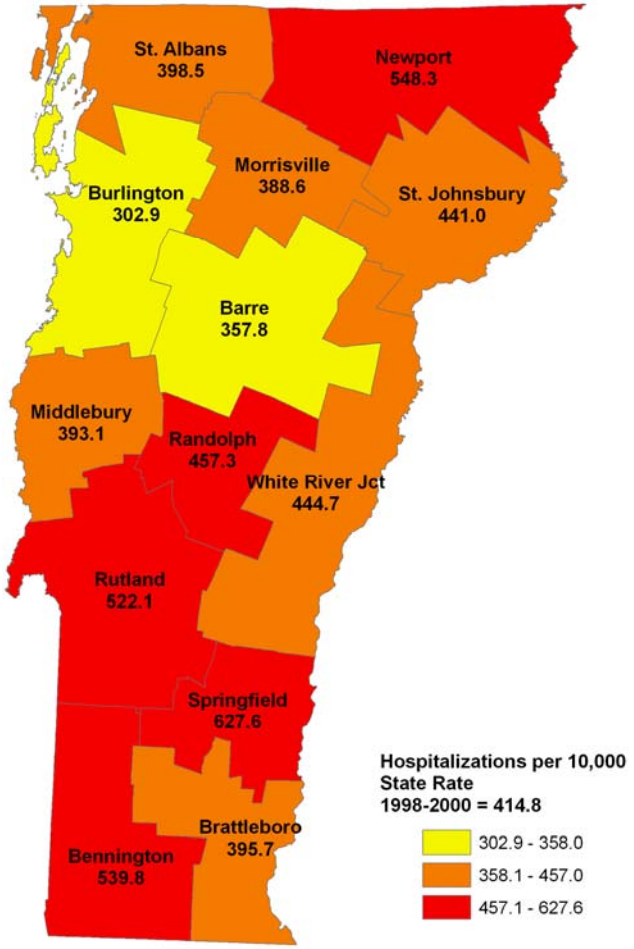


2001-2003

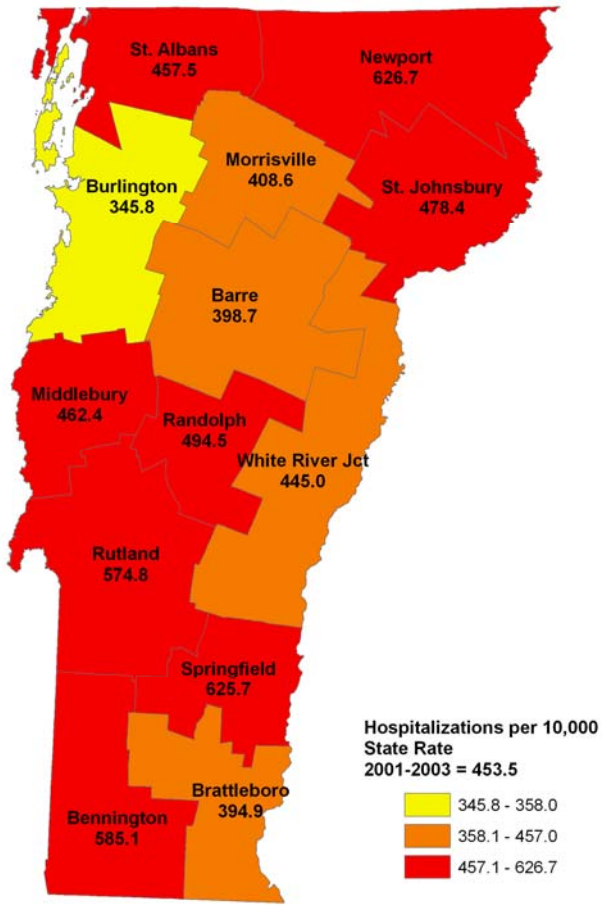


2004-2006

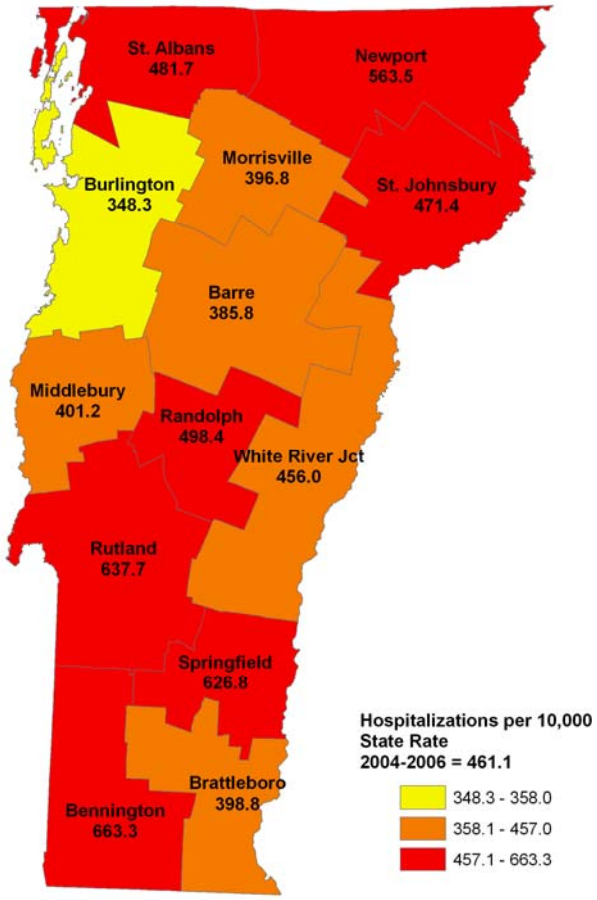
Average Annual Cardiovascular Hospitalization Rates – Any Mention DX, by HSA



1998-2000

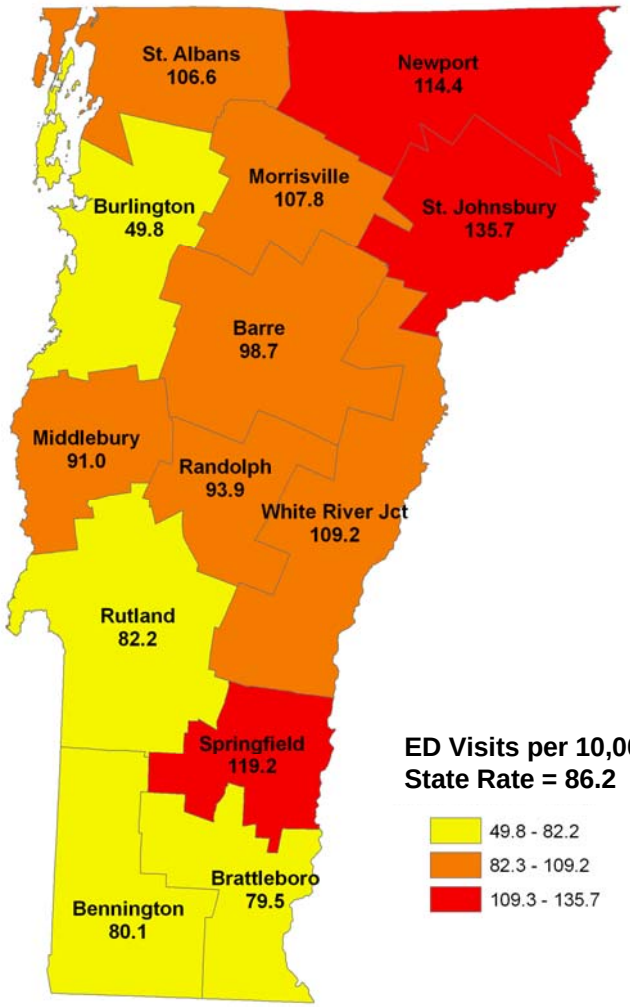


2001-2003

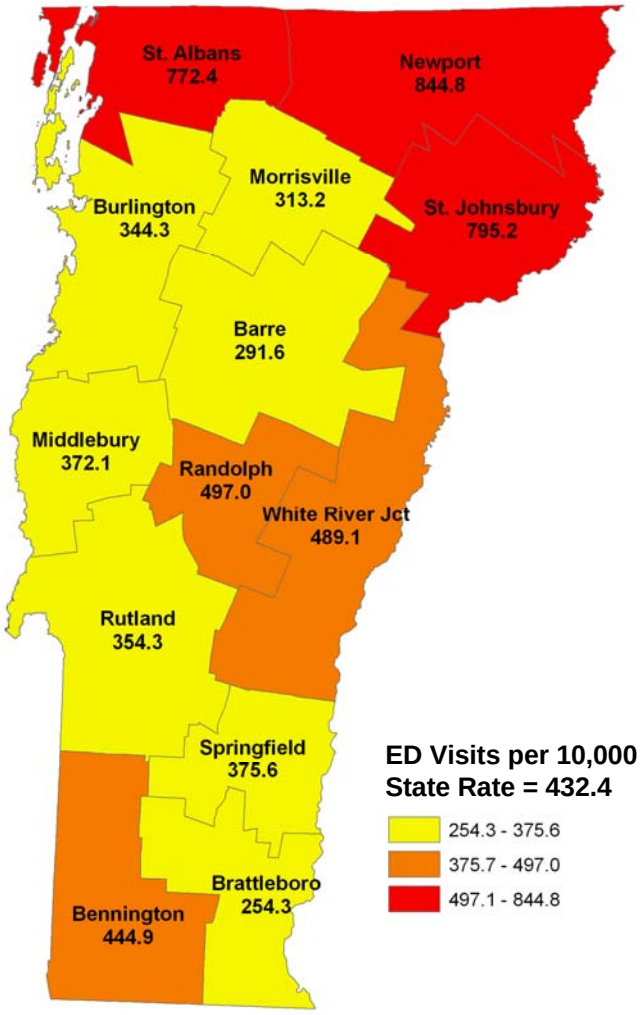


2004-2006

Average Annual Cardiovascular ED Visit Rates, 2004-2006, by HSA



Primary DX



Any Mention DX

Hospitalizations for Cardiovascular Disease Primary Diagnosis, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	2,695	4.3	72	$7,982	1.5	5.4	$1,848
Central Vermont	4,742	3.8	73	$9,213	0.8	7.2	$2,444
Copley Hospital	1,803	3.8	73	$6,135	0.7	5.6	$1,636
Fletcher Allen Health Care	31,687	5.4	66	$20,588	3.1	7.5	$3,841
Gifford Memorial Hospital	1,406	3.5	75	$6,962	0.3	6.5	$2,018
Grace Cottage	390	2.9	79	$3,465	2.4	7.1	$1,207
MT. Ascutney	705	3.6	77	$6,389	0.2	6.7	$1,785
North Country Hospital	3,403	2.7	72	$7,562	0.3	10.4	$2,801
Northeastern Vermont Regional Hospital	2,352	3.4	74	$8,008	1.2	7.6	$2,369
Northwestern Medical Center	3,845	3.7	72	$6,636	0.3	5.9	$1,798
Porter Hospital	2,009	4.2	73	$7,915	1.5	6.7	$1,907
Rutland Regional Medical Center	8,945	4.4	72	$10,523	0.9	7.3	$2,414
Southwestern Medical Center	5,919	3.8	73	$9,014	1.8	5.7	$2,397
Springfield Hospital	3,464	3.4	73	$7,477	0.2	7.7	$2,186
Veteran's Administration Center	2,634	5.1	70	n/a	0.6	5.2	n/a
NH-Dartmouth Hitchcock Hospital	17,694	5.0	67	$24,836	3.3	8.2	$5,017
NY-Albany Medical Center	1,448	7.4	64	$45,712	6.3	7.9	$6,177
Vermont Total	**95,141**	**4.6**	**69**	**$15,997**	**2.2**	**7.4**	**$3,467**

Hospitalizations for Cardiovascular Disease Any Mention, 1997-2006 By Hospital	Total # Hosp.	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	7,610	5.3	72	$9,406	1.6	5.7	$1,781
Central Vermont	15,960	4.9	71	$10,904	1.2	7.5	$2,239
Copley Hospital	5,849	4.6	73	$9,407	1.1	6.3	$2,054
Fletcher Allen Health Care	80,536	6.7	66	$18,996	2.4	7.9	$2,835
Gifford Memorial Hospital	4,391	3.9	74	$9,217	0.7	6.9	$2,351
Grace Cottage	1,316	3.0	79	$3,578	2.5	7.4	$1,181
MT. Ascutney	2,371	4.1	76	$8,925	0.5	7.2	$2,161
North Country Hospital	10,466	3.3	71	$9,281	0.7	10.9	$2,830
Northeastern Vermont Regional Hospital	7,177	4.0	72	$10,397	1.3	8.1	$2,606
Northwestern Medical Center	11,301	4.3	72	$8,345	0.6	6.4	$1,936
Porter Hospital	6,922	4.7	74	$10,410	1.5	6.9	$2,201
Rutland Regional Medical Center	29,858	5.6	72	$12,535	1.1	8.3	$2,226
Southwestern Medical Center	18,077	4.4	73	$10,398	1.8	6.4	$2,374
Springfield Hospital	10,459	4.2	72	$9,515	0.6	7.8	$2,244
Veteran's Administration Center	7,545	6.2	69	n/a	0.6	5.9	n/a
NH-Dartmouth Hitchcock Hospital	40,094	5.5	65	$22,468	2.6	8.3	$4,115
NY-Albany Medical Center	1,938	8.3	63	$45,259	5.8	8.2	$5,453
Vermont Total	**261,870**	**5.5**	**69**	**$15,030**	**1.7**	**7.7**	**$2,746**

Hospitalizations for Cardiovascular Disease Primary Diagnosis, 1997-2006 By Hospital Service Area	Total # Hosp.	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	9,402	4.5	69	$17,463	2.2	7.4	$3,881
Bennington	9,117	4.5	70	$17,548	2.7	6.3	$3,865
Brattleboro	4,939	4.6	70	$15,074	2.3	6.4	$3,298
Burlington	19,145	5.3	68	$18,417	2.6	7.4	$3,495
Middlebury	4,276	5.0	69	$16,490	2.6	7.1	$3,298
Morrisville	3,948	4.5	69	$15,482	2.3	6.7	$3,433
Newport	5,705	3.7	69	$14,046	1.5	9.3	$3,848
Randolph	2,605	4.3	71	$16,274	1.8	7.2	$3,758
Rutland	13,043	4.8	70	$15,807	1.9	7.4	$3,314
Springfield	6,760	4.1	70	$14,575	1.5	7.7	$3,538
St. Albans	7,683	4.6	68	$15,280	1.9	6.8	$3,315
St. Johnsbury	4,737	4.1	70	$16,346	2.1	7.7	$3,987
White River Jct.	7,899	4.7	70	$17,997	1.9	7.6	$3,837
Vermont Total	**99,259**	**4.6**	**69**	**$16,593**	**2.2**	**7.3**	**$3,577**

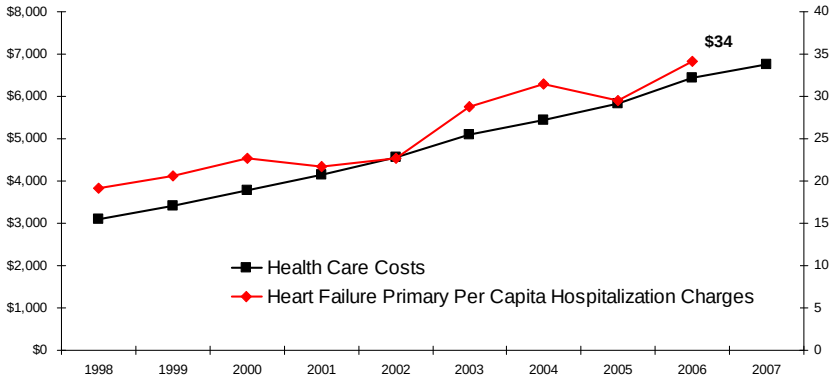
Hospitalizations for Cardiovascular Disease Any Mention, 1997-2006 By Hospital Service Area	Total # Hosp.	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	25,650	5.5	68	$16,255	1.8	7.7	$2,961
Bennington	24,655	5.0	71	$15,185	2.2	6.7	$3,031
Brattleboro	13,239	5.7	70	$14,276	1.9	6.6	$2,522
Burlington	55,392	6.5	67	$17,093	2.0	7.8	$2,650
Middlebury	11,736	5.8	69	$15,904	2.1	7.3	$2,766
Morrisville	10,300	5.4	69	$15,193	1.9	7.0	$2,793
Newport	16,175	4.3	68	$14,079	1.3	9.8	$3,267
Randolph	7,130	5.0	70	$15,439	1.5	7.4	$3,088
Rutland	37,796	5.8	70	$15,598	1.6	8.2	$2,671
Springfield	18,570	4.9	70	$14,496	1.3	7.8	$2,970
St. Albans	19,452	5.5	68	$14,647	1.6	7.1	$2,668
St. Johnsbury	12,842	4.8	69	$15,534	1.7	8.0	$3,243
White River Jct.	22,571	5.0	69	$15,865	1.5	7.8	$3,148
Vermont Total	**275,508**	**5.5**	**69**	**$15,641**	**1.7**	**7.7**	**$2,837**

Hospitalizations for HEART & CIRC. DX, Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	2,707	3.8	71	$7,437	2.2	2.5	$1,957
Central Vermont	4,449	3.4	72	$8,859	1.6	2.9	$2,606
Copley Hospital	1,783	3.3	71	$5,579	1.7	2.6	$1,691
Fletcher Allen Health Care	33,508	4.9	65	$19,223	2.7	3.1	$3,923
Gifford Memorial Hospital	1,329	3.2	74	$6,411	1.3	2.9	$2,004
Grace Cottage	304	2.8	79	$3,328	2.6	3.1	$1,189
MT. Ascutney	670	3.3	75	$6,109	1.1	3	$1,851
North Country Hospital	3,372	2.5	70	$6,952	1.2	3.7	$2,781
Northeastern Vermont Regional Hospital	2,246	3.2	72	$7,910	1.9	3.1	$2,472
Northwestern Medical Center	3,682	3.2	70	$6,234	1.2	2.6	$1,948
Porter Hospital	2,100	3.4	71	$7,026	2.2	2.8	$2,067
Rutland Regional Medical Center	8,526	3.9	71	$9,778	1.6	3	$2,507
Southwestern Medical Center	6,285	3.5	71	$8,414	2.2	2.7	$2,404
Springfield Hospital	3,698	2.9	71	$6,802	1.2	3.1	$2,346
Veteran's Administration Center	2,894	4.5	68	n/a	1.4	2.5	n/a
NH-Dartmouth Hitchcock Hospital	17,534	4.8	66	$24,537	3	3.3	$5,112
NY-Albany Medical Center	1,402	7.2	63	$45,688	3.8	3.2	$6,346
Vermont Total	**96,489**	**4.3**	**68**	**$15,296**	**2.3**	**3.0**	**$3,595**

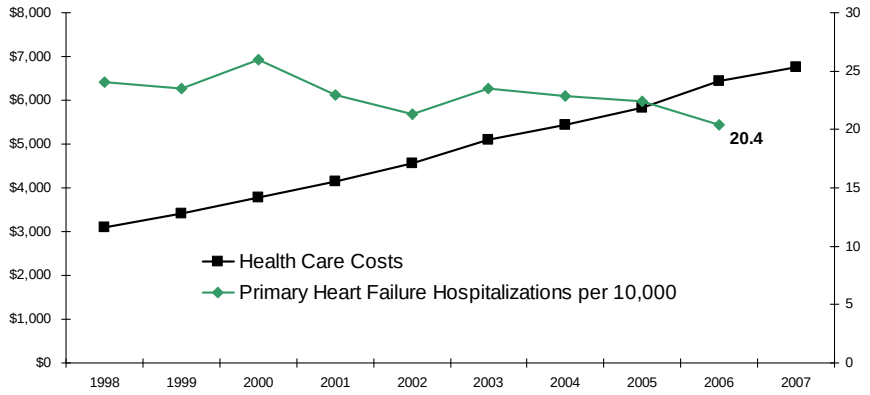
HEART & CIRCULATORY DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	9,216	4.2	68	$17,584	2.3	7.4	$4,187
Bennington	9,407	4.3	69	$16,808	2.6	6.2	$3,909
Brattleboro	4,862	4.3	68	$15,186	2.2	6.4	$3,532
Burlington	20,217	4.7	66	$17,261	2.6	7.4	$3,672
Middlebury	4,471	4.5	67	$15,819	2.7	7.1	$3,515
Morrisville	4,019	4.2	67	$15,299	2.4	6.7	$3,643
Newport	5,861	3.5	68	$13,899	1.6	9.3	$3,971
Randolph	2,593	4.1	70	$16,054	1.9	7.2	$3,916
Rutland	13,026	4.5	68	$15,455	1.9	7.4	$3,434
Springfield	7,016	3.8	68	$14,186	1.5	7.6	$3,733
St. Albans	7,974	4.3	66	$15,179	2.0	6.7	$3,530
St. Johnsbury	4,625	4.0	68	$16,719	2.2	7.7	$4,180
White River Jct.	7,883	4.3	68	$17,846	2.0	7.5	$4,150
Vermont Total	**101,170**	**4.3**	**68**	**$16,192**	**2.2**	**7.3**	**$3,764**

Heart Failure

Per Capita Health Care Costs and Heart Failure Hospitalizations



$R^2 = 0.97$; Sig < 0.001



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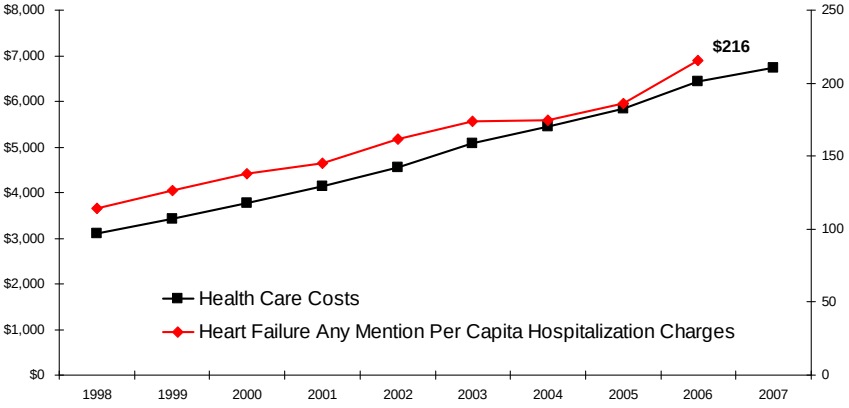

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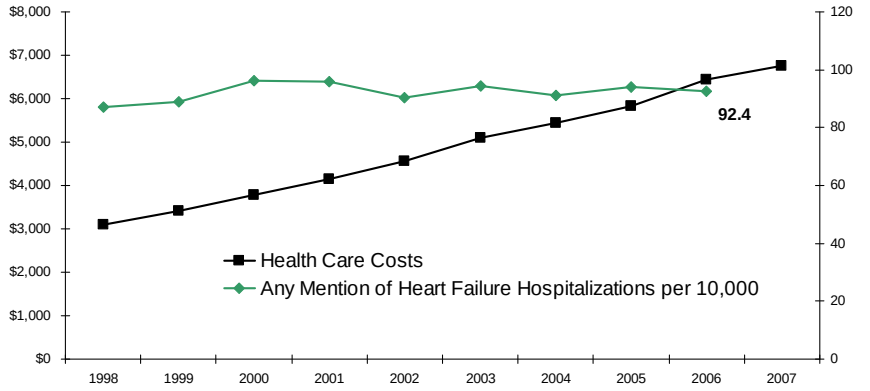
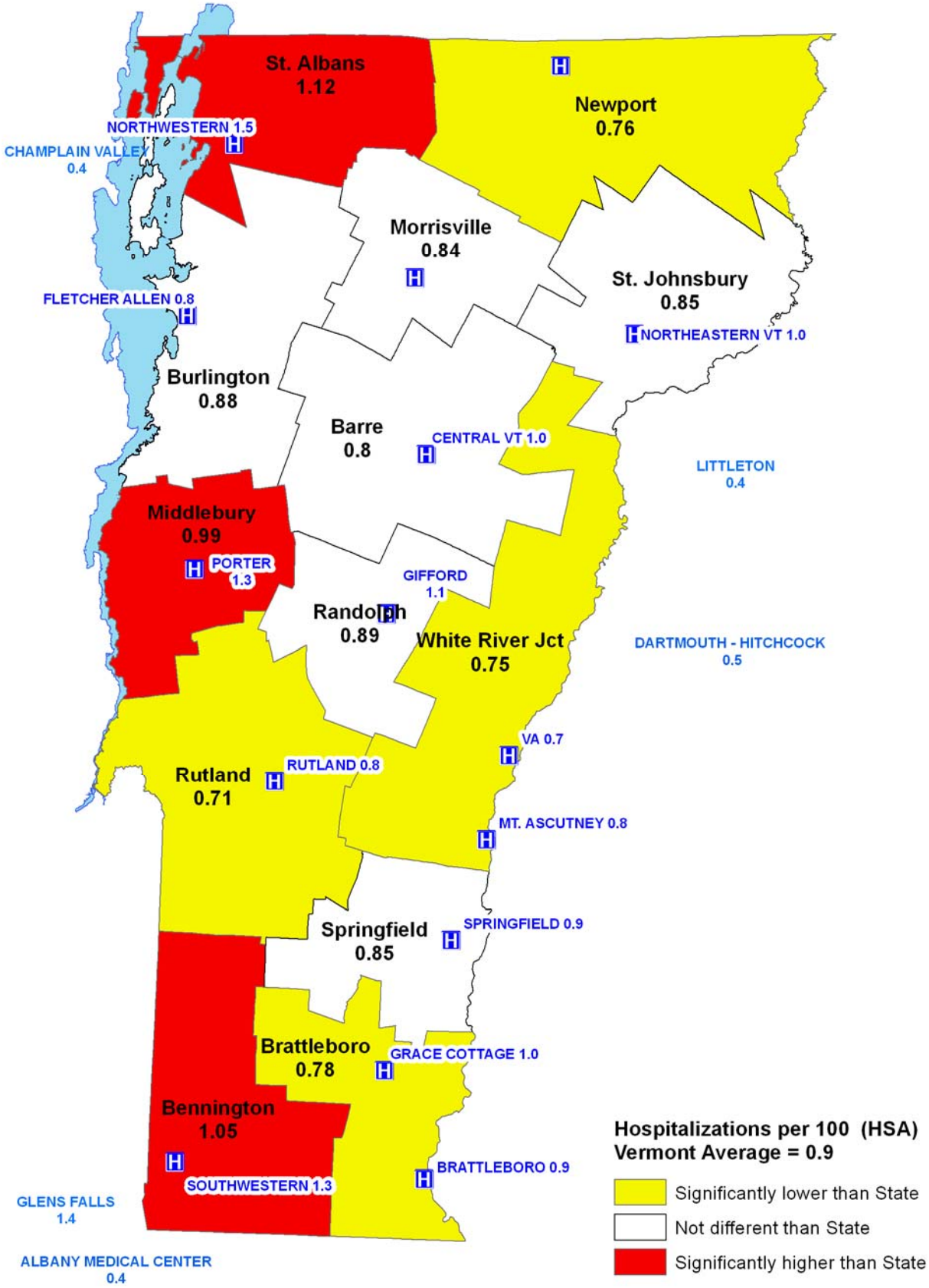


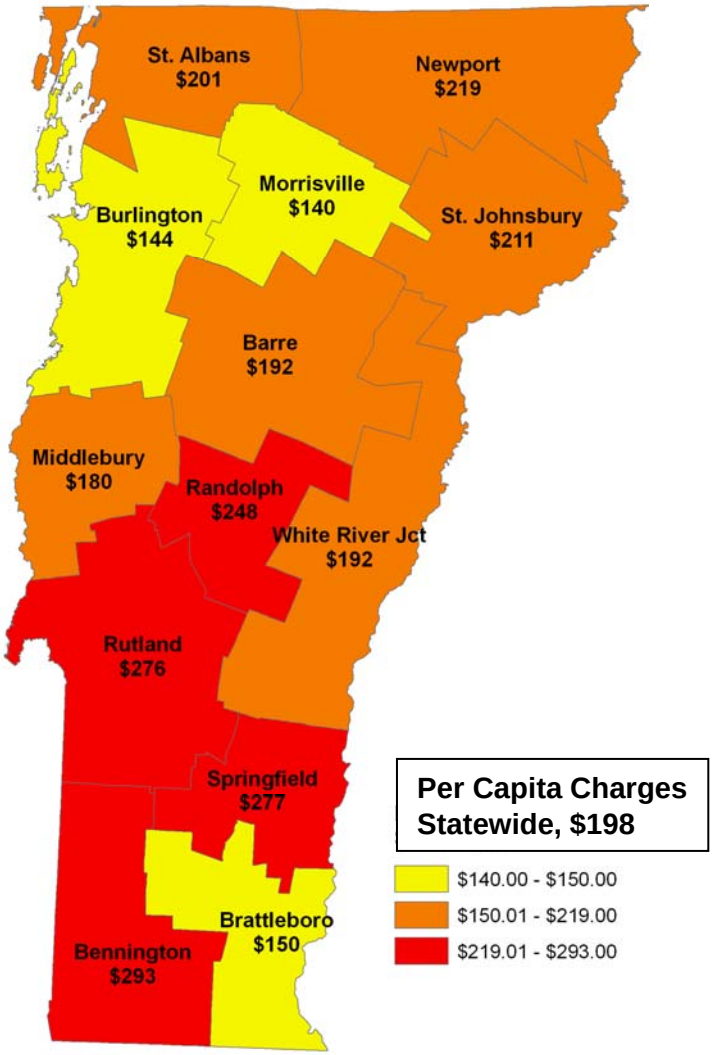
$R^2 = 0.62$; Sig = 0.01

Heart Failure Diagnosis (Primary) per 100 Hospitalizations By Hospital Service Area and Hospital

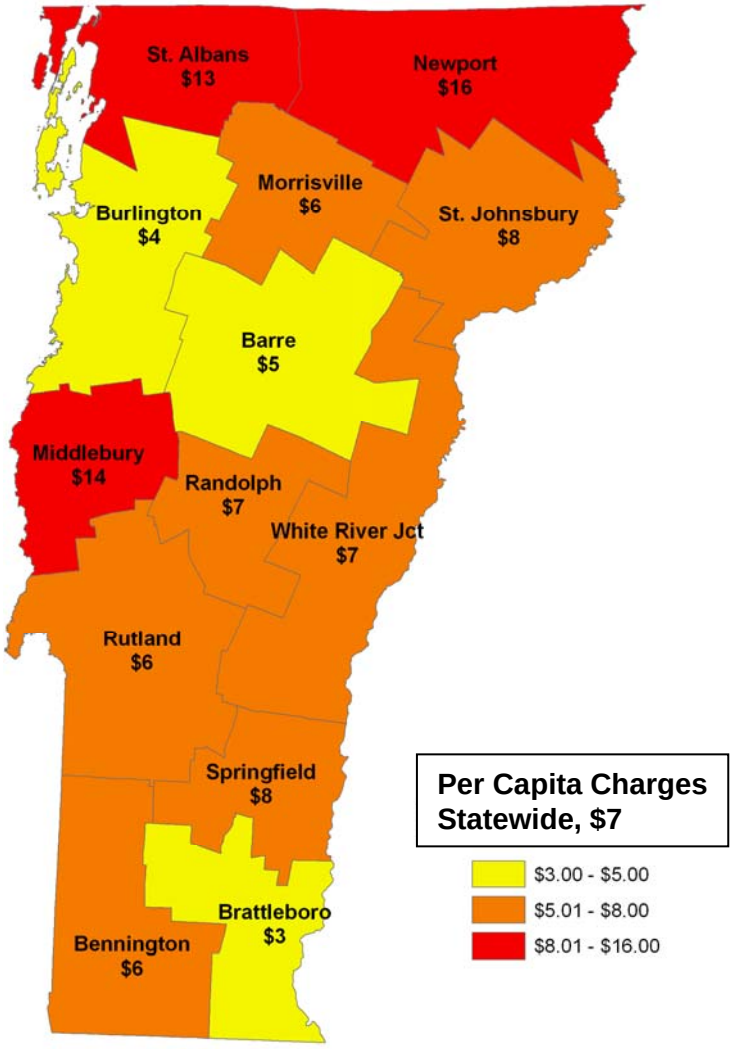


Note: Data Age and Severity Adjusted, 1997-2006 Combined

Heart Failure Related Charges, by HSA

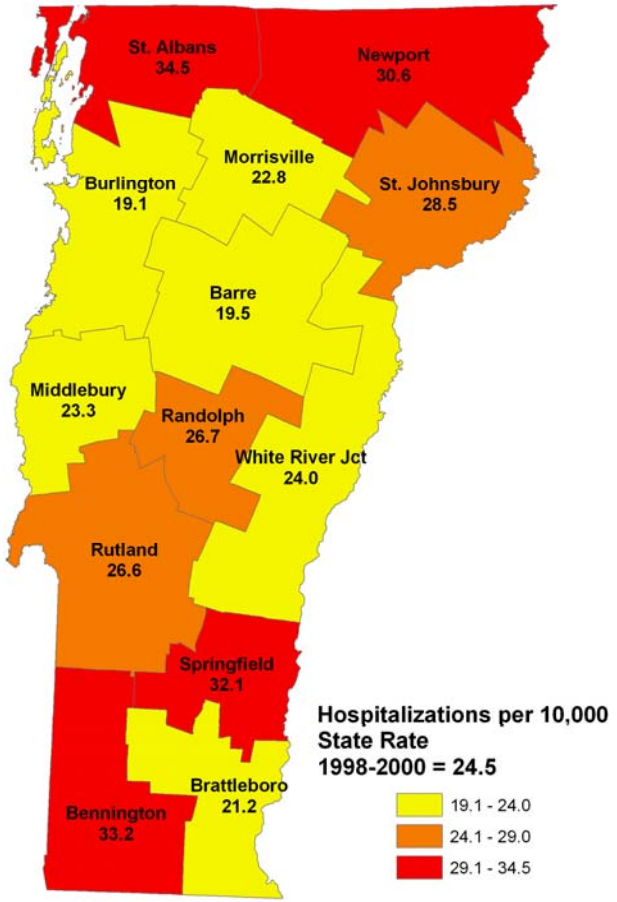


Hospitalization Charges, 2004-2006

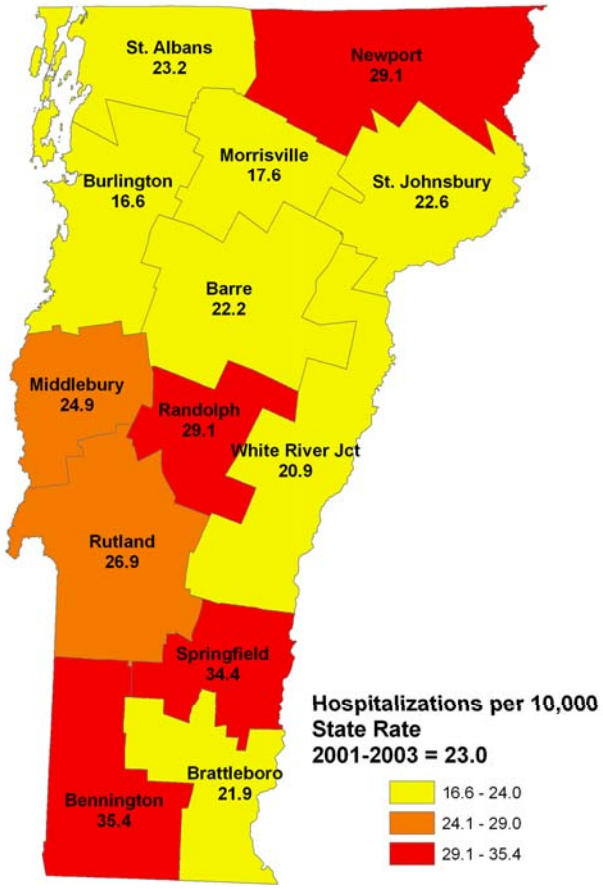


ED Visit Charges, 2004-2006

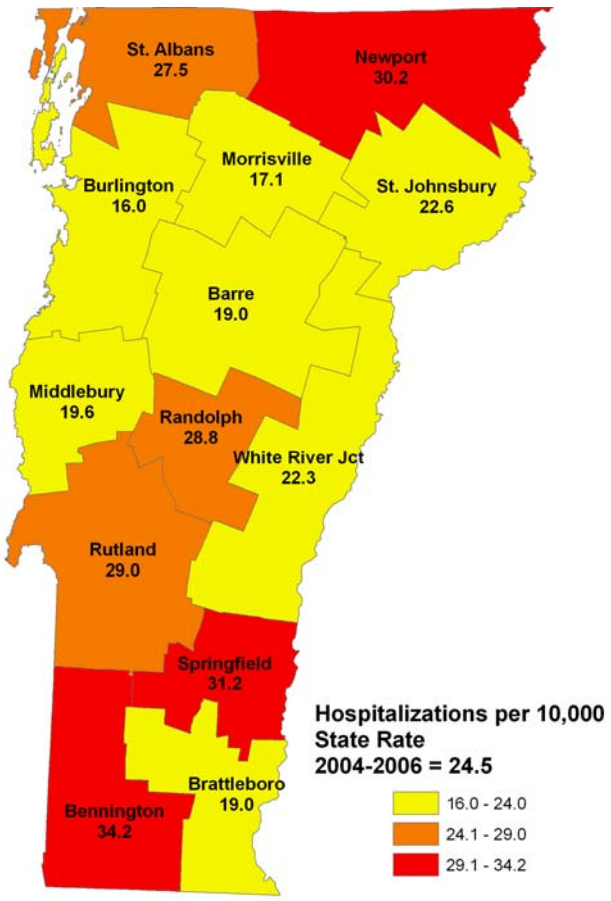
Average Annual Heart Failure Hospitalization Rates – Primary DX, by HSA



1998-2000

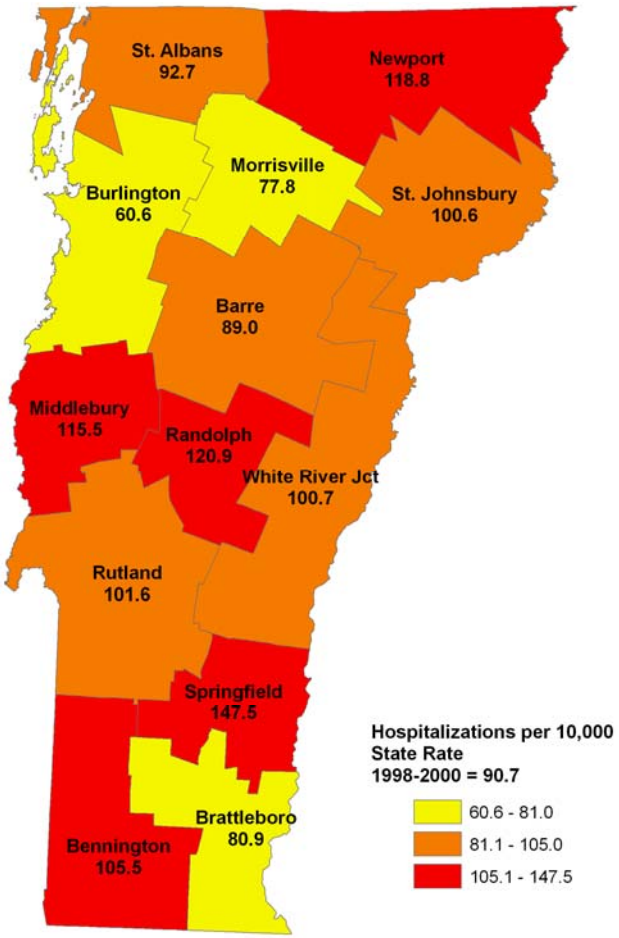


2001-2003

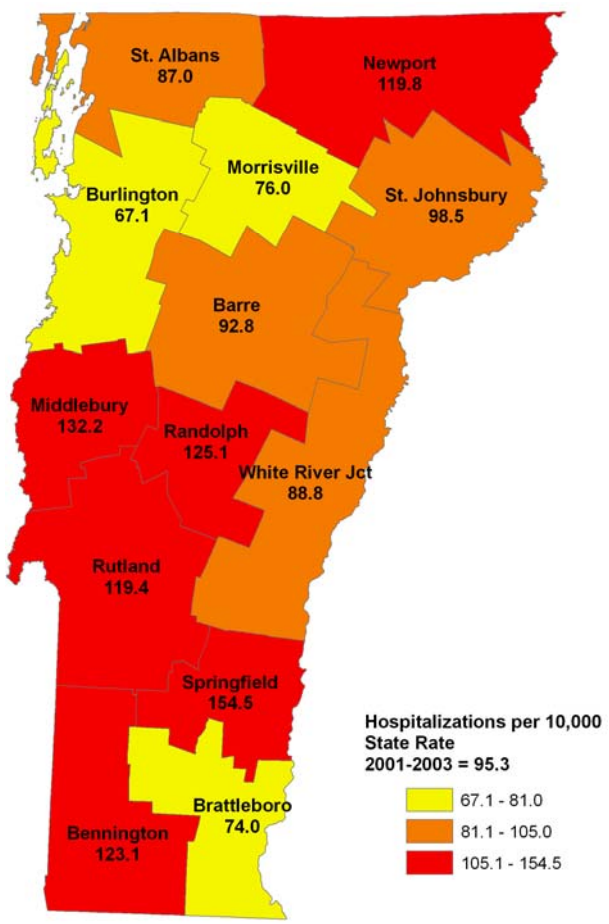


2004-2006

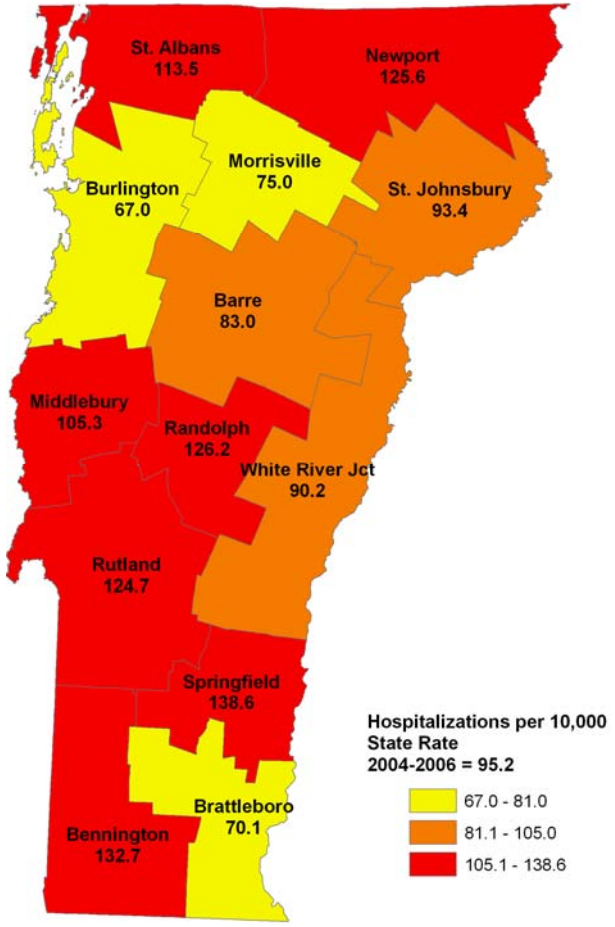
Average Annual Heart Failure Hospitalization Rates – Any Mention DX, by HSA



1998-2000

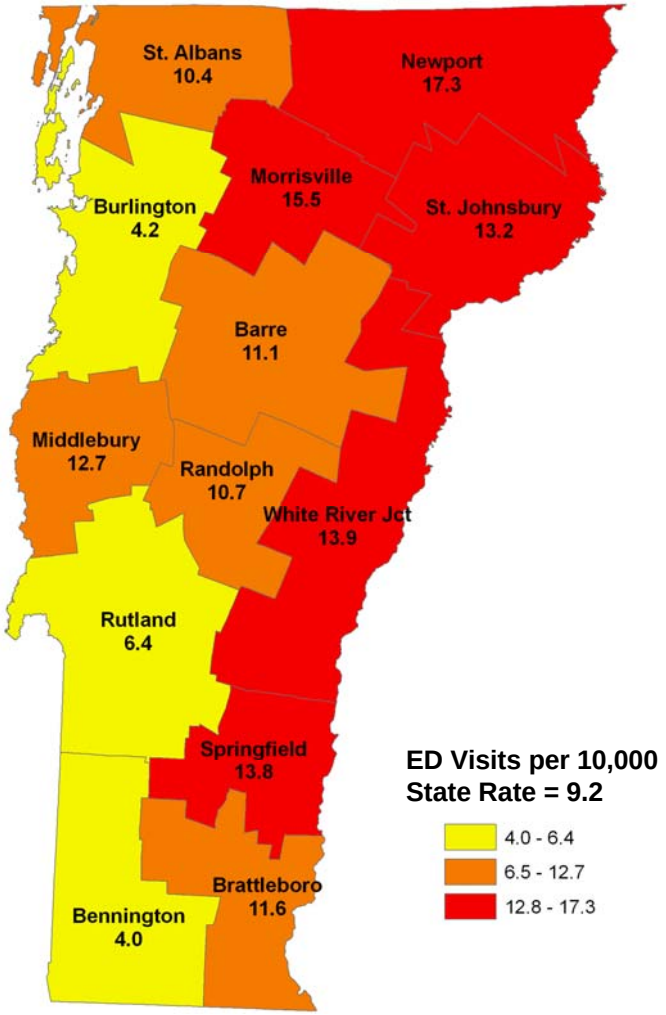


2001-2003

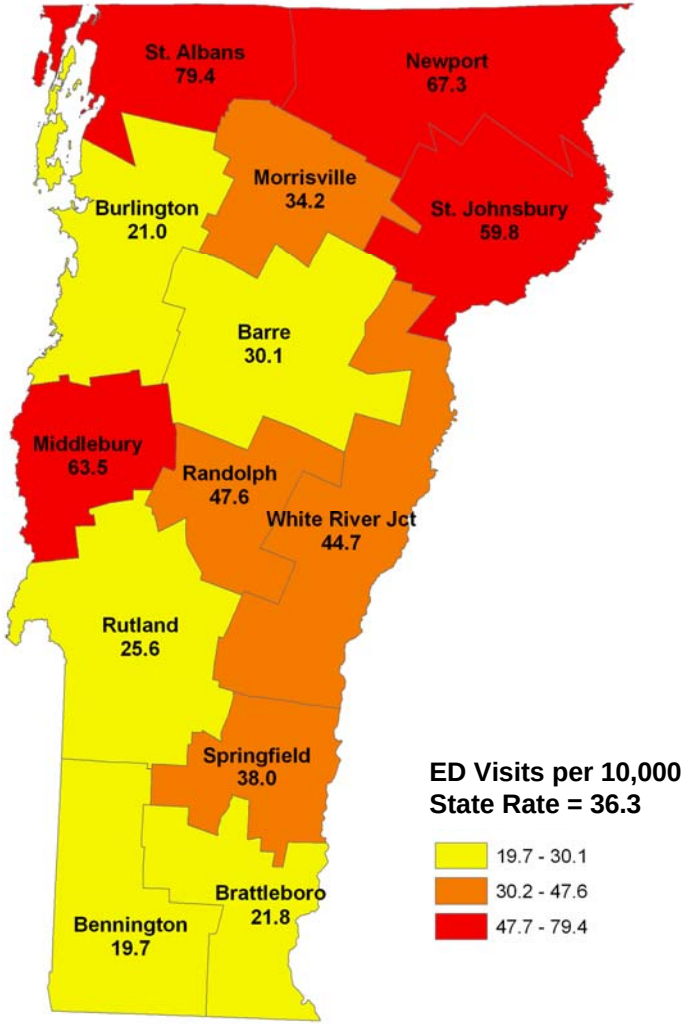


2004-2006

Average Annual Heart Failure ED Visit Rates, 2004-2006, by HSA



Primary DX



Any Mention DX

Hospitalizations for Heart Failure Primary Diagnosis, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	448	5.3	78	$8,122	1.5	6.4	$1,532
Central Vermont	1102	4.6	77	$10,084	0.8	8.2	$2,192
Copley Hospital	355	4.4	75	$6,623	0.9	6.5	$1,505
Fletcher Allen Health Care	3459	6.0	73	$13,741	1.4	9.4	$2,290
Gifford Memorial Hospital	365	3.9	80	$7,085	0.4	7.3	$1,817
Grace Cottage	128	3.1	80	$3,499	2.5	7.4	$1,129
MT. Ascutney	201	4.2	82	$7,051	0.2	7.6	$1,679
North Country Hospital	660	3.3	78	$8,206	0.2	12.2	$2,487
Northeastern Vermont Regional Hospital	526	3.9	78	$8,481	1.2	9.2	$2,175
Northwestern Medical Center	987	4.6	76	$7,486	0.2	6.8	$1,627
Porter Hospital	507	4.6	76	$8,232	1.3	7.7	$1,790
Rutland Regional Medical Center	1613	5.1	77	$10,032	0.7	8.8	$1,967
Southwestern Medical Center	1237	4.6	77	$8,629	1.3	6.8	$1,876
Springfield Hospital	659	3.9	77	$7,684	0.2	8.6	$1,970
Veteran's Administration Center	422	6.4	72	n/a	0.4	6.2	n/a
NH-Dartmouth Hitchcock Hospital	951	5.7	72	$18,682	1.5	9.5	$3,278
NY-Albany Medical Center	19	4.7	58	$40,059	2.5	8.5	$8,523
Vermont Total	**13,639**	**5.0**	**76**	**$10,497**	**1.0**	**8.5**	**$2,098**

Hospitalizations for Heart Failure Any Mention, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	1,383	7.1	78	$11,245	1.7	6.7	$1,584
Central Vermont	4,356	5.6	77	$12,754	1.2	8.8	$2,278
Copley Hospital	1,276	5.1	78	$8,503	1.1	7.1	$1,667
Fletcher Allen Health Care	13,886	8.6	73	$22,483	2.3	10.5	$2,614
Gifford Memorial Hospital	1,351	4.3	80	$8,903	0.6	7.8	$2,071
Grace Cottage	424	3.1	82	$3,660	2.7	7.9	$1,181
MT. Ascutney	588	4.8	81	$8,526	0.4	7.7	$1,776
North Country Hospital	2,380	3.7	77	$10,101	0.5	12.6	$2,730
Northeastern Vermont Regional Hospital	1,710	4.6	78	$11,046	1.3	9.6	$2,401
Northwestern Medical Center	2,936	5.2	77	$9,111	0.5	7.3	$1,752
Porter Hospital	2,703	5.3	78	$10,375	1.5	7.9	$1,957
Rutland Regional Medical Center	5,991	6.5	78	$14,238	1.1	9.9	$2,190
Southwestern Medical Center	3,839	5.6	78	$12,012	1.7	7.6	$2,145
Springfield Hospital	2,787	4.9	77	$10,834	0.6	8.8	$2,211
Veteran's Administration Center	1,258	7.8	72	n/a	0.6	6.8	n/a
NH-Dartmouth Hitchcock Hospital	6,705	7.1	72	$27,140	2.6	9.5	$3,823
NY-Albany Medical Center	276	13.2	68	$72,763	7.0	11.0	$5,512
Vermont Total	**53,849**	**6.5**	**76**	**$16,398**	**1.6**	**9.3**	**$2,512**

Hospitalizations for Heart Failure Primary Diagnosis, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	1323	4.9	76	$12,761	1.0	8.3	$2,604
Bennington	1403	4.8	76	$9,612	1.3	6.9	$2,002
Brattleboro	660	4.9	77	$8,873	1.6	6.9	$1,811
Burlington	2806	5.9	74	$12,672	1.2	9.2	$2,148
Middlebury	633	5.1	74	$10,472	1.4	8.3	$2,053
Morrisville	496	4.8	73	$9,378	1.2	7.6	$1,954
Newport	799	3.8	77	$9,530	0.4	11.5	$2,508
Randolph	405	4.1	78	$9,250	0.7	7.5	$2,256
Rutland	1781	5.4	76	$12,421	0.9	8.8	$2,300
Springfield	945	4.4	76	$9,930	0.5	8.4	$2,257
St. Albans	1202	5.2	74	$10,087	0.6	7.4	$1,940
St. Johnsbury	682	4.2	76	$12,416	1.2	8.9	$2,956
White River Jct.	1080	5.1	76	$11,380	0.7	8.3	$2,231
Vermont Total	**14,215**	**5.0**	**75**	**$11,172**	**1.0**	**8.4**	**$2,215**

Hospitalizations for Heart Failure Any Mention, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	5752	6.4	76	$18,116	1.7	9.0	$2,831
Bennington	4867	6.4	76	$18,052	2.1	8.0	$2,821
Brattleboro	2441	6.9	76	$15,823	2.1	7.6	$2,293
Burlington	10381	8.1	74	$19,438	1.8	10.2	$2,400
Middlebury	3185	6.4	76	$15,518	1.9	8.7	$2,425
Morrisville	1930	6.5	75	$16,172	1.8	8.4	$2,488
Newport	3279	4.7	75	$14,280	1.1	11.6	$3,038
Randolph	1765	5.4	77	$15,439	1.3	8.3	$2,859
Rutland	7284	6.9	76	$17,859	1.5	9.8	$2,588
Springfield	4269	5.8	75	$15,830	1.2	8.8	$2,729
St. Albans	4104	6.7	74	$15,829	1.3	8.4	$2,363
St. Johnsbury	2618	5.4	75	$17,037	1.7	9.3	$3,155
White River Jct.	4553	6.1	76	$17,316	1.3	8.7	$2,839
Vermont Total	**56,428**	**6.6**	**75**	**$17,248**	**1.6**	**9.2**	**$2,622**

Hospitalizations for HEART & CIRC. DX, Primary MDC Code, 1997-2006 By Hospital	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Brattleboro Memorial Hospital	2,707	3.8	71	$7,437	2.2	2.5	$1,957
Central Vermont	4,449	3.4	72	$8,859	1.6	2.9	$2,606
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Porter Hospital	2,100	3.4	71	$7,027	2.2	2.8	$2,067
Rutland Regional Medical Center	8,526	3.9	71	$9,778	1.6	3	$2,507
Southwestern Medical Center	6,285	3.5	71	$8,414	2.2	2.7	$2,404
Springfield Hospital	3,698	2.9	71	$6,802	1.2	3.1	$2,346
Veteran's Administration Center	2,894	4.5	68	n/a	1.4	2.5	n/a
NH-Dartmouth Hitchcock Hospital	17,534	4.8	66	$18,682	3	3.3	$3,278
NY-Albany Medical Center	1,402	7.2	63	$45,688	3.8	3.2	$6,346
Vermont Total	**96,489**	**4.3**	**68**	**$15,296**	**2.3**	**3.0**	**$3,595**

HEART & CIRCULATORY DX Primary MDC Code, 1997-2006 By Hospital Service Area	Total # Hospitalizations	Avg # Days	Avg Age	Avg Charge	Avg # Proced.	Avg # DX	Avg Charge/Day
Barre	9,216	4.2	68	$17,584	2.3	7.4	$4,187
Bennington	9,407	4.3	69	$16,808	2.6	6.2	$3,909
Brattleboro	4,862	4.3	68	$15,186	2.2	6.4	$3,532
Burlington	20,217	4.7	66	$17,261	2.6	7.4	$3,672
Middlebury	4,471	4.5	67	$15,819	2.7	7.1	$3,515
Morrisville	4,019	4.2	67	$15,299	2.4	6.7	$3,643
Newport	5,861	3.5	68	$13,899	1.6	9.3	$3,971
Randolph	2,593	4.1	70	$16,054	1.9	7.2	$3,916
Rutland	13,026	4.5	68	$15,455	1.9	7.4	$3,434
Springfield	7,016	3.8	68	$14,186	1.5	7.6	$3,733
St. Albans	7,974	4.3	66	$15,179	2.0	6.7	$3,530
St. Johnsbury	4,625	4.0	68	$16,719	2.2	7.7	$4,180
White River Jct.	7,883	4.3	68	$17,846	2.0	7.5	$4,150
Vermont Total	**101,170**	**4.3**	**68**	**$16,192**	**2.2**	**7.3**	**$3,764**

Conditions Finished:

- Asthma
- Cardiovascular Disease (including Stroke)
- Heart Failure

Future Conditions (in order of production)

- Mental Health (including Depression and Substance Abuse)
- Depression
- Substance Abuse
- COPD
- Diabetes
- Substance Abuse
- Cancer
- Hypertension
- Injury
- Arthritis and Osteoarthritis