Green Mountain Care Board: Vermont Dental Landscape Study

A report on policy considerations to improve access, quality and cost of oral health services through payment reform

Submitted by:

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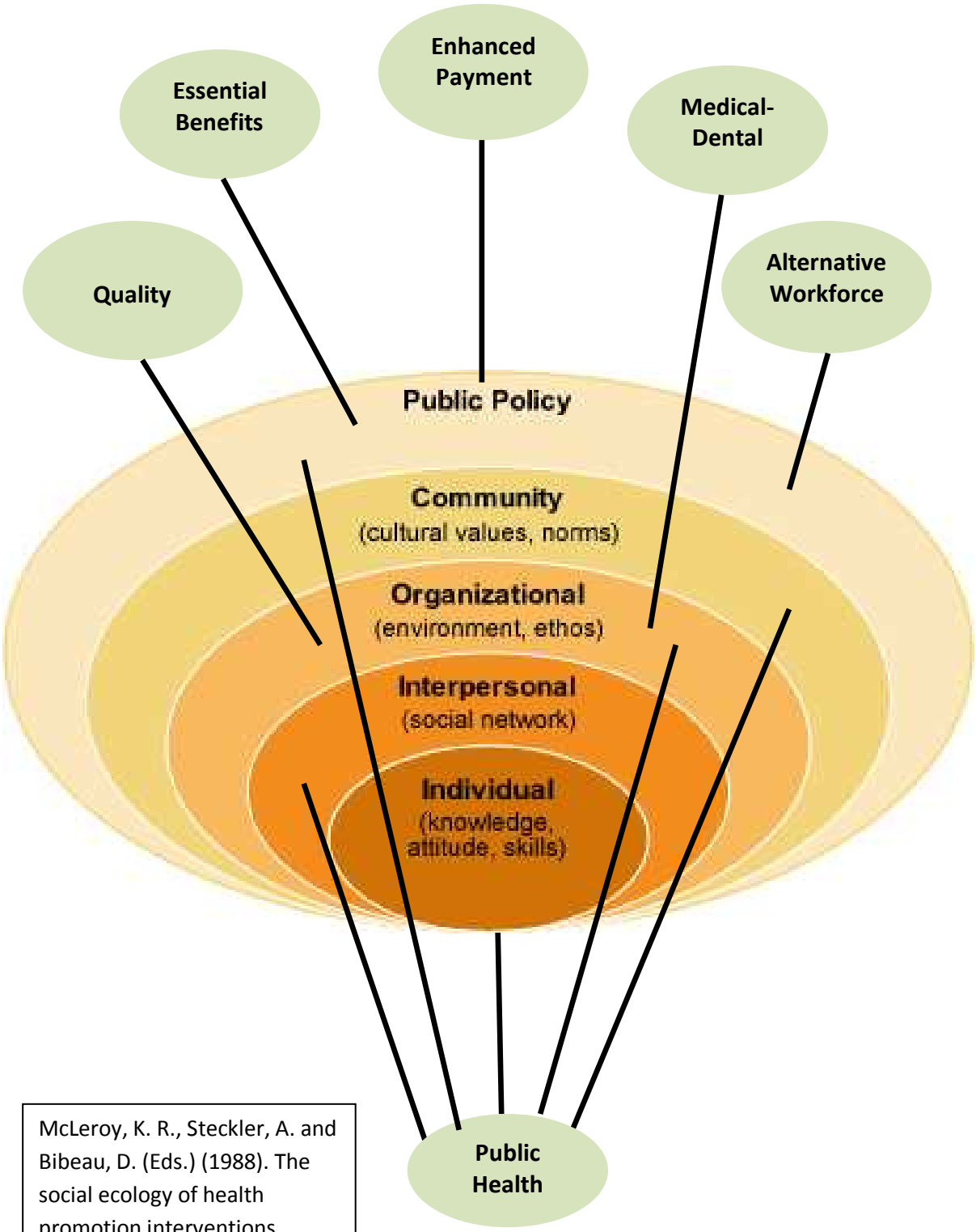
Section I: Executive Summary

Drawn from a review of current literature, interviews with national experts and guidance from an advisory committee of local oral health stakeholders, the following document discusses policy considerations intended to improve the access, quality and cost of oral health services in Vermont, a list of which is included below:

- Establish a Dental Director position in the Department of Vermont Health Access responsible for oversight of oral health payment reform activities.
- Institutionalize oral health professional participation in Green Mountain Care Board committees and planning.
- Increase Medicaid eligible utilization and dentist participation in Medicaid through rate increases.
- Adopt new workforce models which have shown to be effective and safe.
- Promote higher utilization of existing workforce models and their ability to work to the fullest extent of their scope of practice.
- Pilot a quality and systems improvement project in dentist practices.
- Pilot an oral health and diabetes initiative in a Blueprint for Health community.
- Implement Public Health Hygienists in WIC clinics to target at risk children and their families.
- Maintain adult dental benefits in the Health Exchange as currently defined in Vermont's Medicaid Program.
- Implement public health initiatives to improve the oral health status of Vermonters and reduce demand for services.

The social ecological model provides a framework from which to understand the interplay of policy considerations. No one factor solely influences health outcomes, rather it is a multiplicity of factors which create an environment where good, or bad outcomes can manifest. Figure 1 illustrates the relation of the social ecological model and oral health policy considerations discussed further in this report. As with the social ecological model, no one policy consideration will produce the desired effects, rather they are synergistic and interdependent, targeting each sphere of influence.

Figure 1: Social Ecological Model



McLeroy, K. R., Steckler, A. and Bibeau, D. (Eds.) (1988). The social ecology of health promotion interventions. *Health Education Quarterly,* 15(4):351-377.

Section II: Methodology

Under contract with the Green Mountain Care Board, JSI Research and Training Institute led the development of this report. Over the course of nine months JSI worked collaboratively with national and local stakeholders to research the potential policy considerations which if implemented hold promise to improve access, quality and cost effectiveness of the current oral health system. Stone Environmental provided expertise and staffing to develop a series of maps describing the Vermont landscape for use in the study. The resulting policy considerations set forth in this document are summarized below:

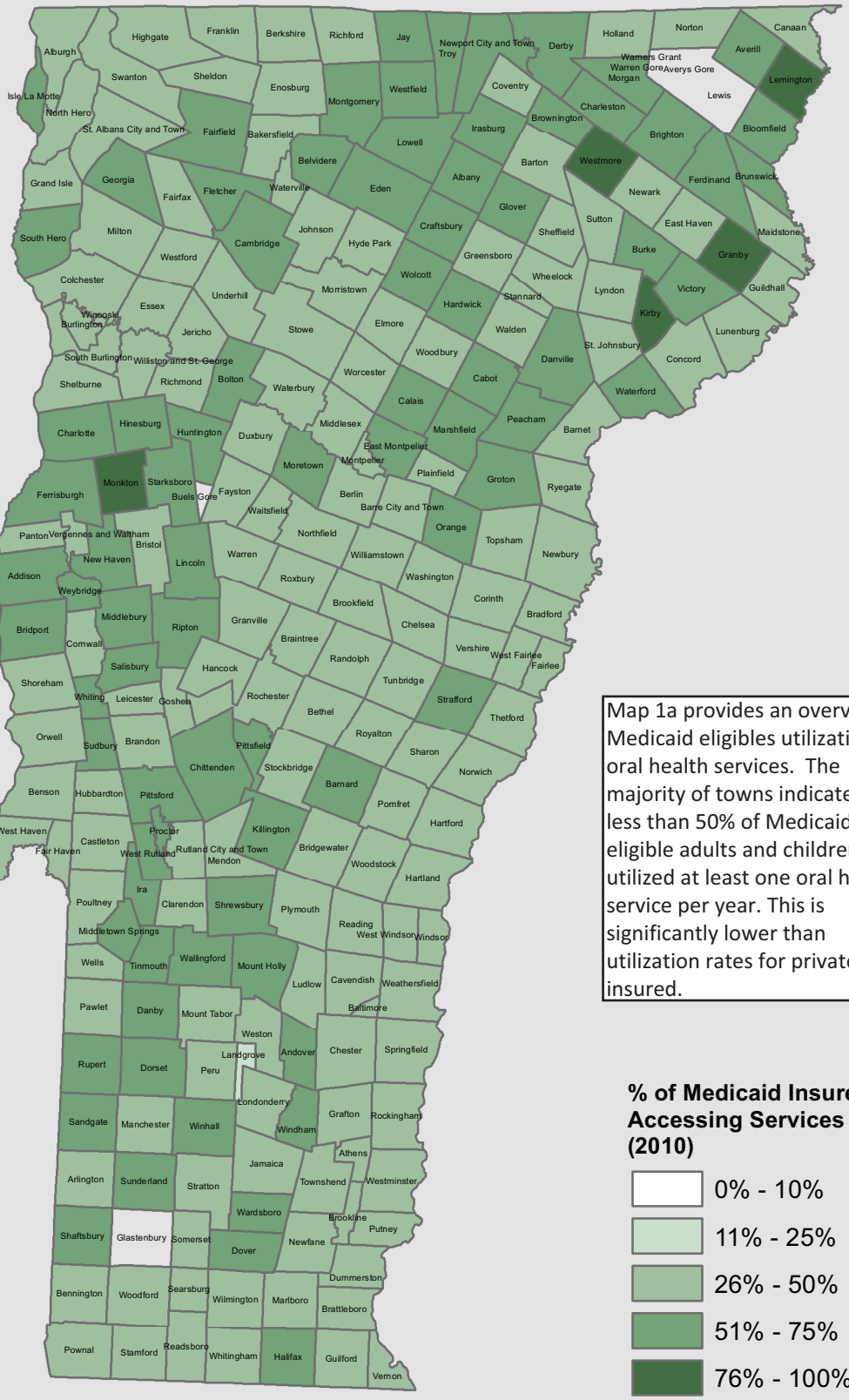
- Convene a local advisory committee to provide guidance and input into the project research and development.
- Conduct a literature and secondary source review to define the base of evidence for policy considerations and describe the Vermont oral health landscape.
- Based upon the literature and secondary source review, identify priority policy areas for consideration.
- Conduct interviews with national experts to vet and gain further insight to priority policy areas.
- Develop financial impact projections for each of the priority policy areas, given the Vermont environment.

Section III: Landscape

The following section provides an overview of the oral health environment in Vermont. While each of the associated maps assist in gaining insight to the most relevant indicators of oral health status and the strength of the system, several important themes can be drawn:

- Medicaid eligible utilization of oral health services is low as compared to utilization of oral health services by individuals with private insurance.
- While individuals with private dental health insurance utilize services at a higher rate, they are still significantly below desired levels.
- Medicaid eligibles encounter greater barriers to access than their privately insured counterparts, including a limited number of dentists willing to take new Medicaid patients.

- A significant percent of the population still remains uninsured for oral health services, with greater than half of Vermonters without oral health insurance.
- For those interested in accessing oral health services, cost of care is a barrier.
- While there is a general maldistribution of the dentist population, Vermont has significant coverage as compared to national statistics.
- Half of the primary care dentist population is age 55 or over indicating a large proportion of the Vermont dentist workforce is approaching retirement. As the dentist population shrinks, access will become more limited regardless of insurance status.
- Oral health indicators show a need for public health initiatives and payment reform to promote better access, quality and efficiency in terms of costs. Significant numbers of adults 18-64 have lost all their natural teeth to decay or disease and do not access recommended preventative services such as semi-annual cleanings.



Sources: Medicaid (2010): Vermont Medicaid Office; Town Boundaries: VCGI

Percent of Medicaid Insured Accessing Services by Town (2010)

STONE ENVIRONMENTAL INC

Utilization

Vermont's Dental Health
Green Mountain Care Board

Map #1a

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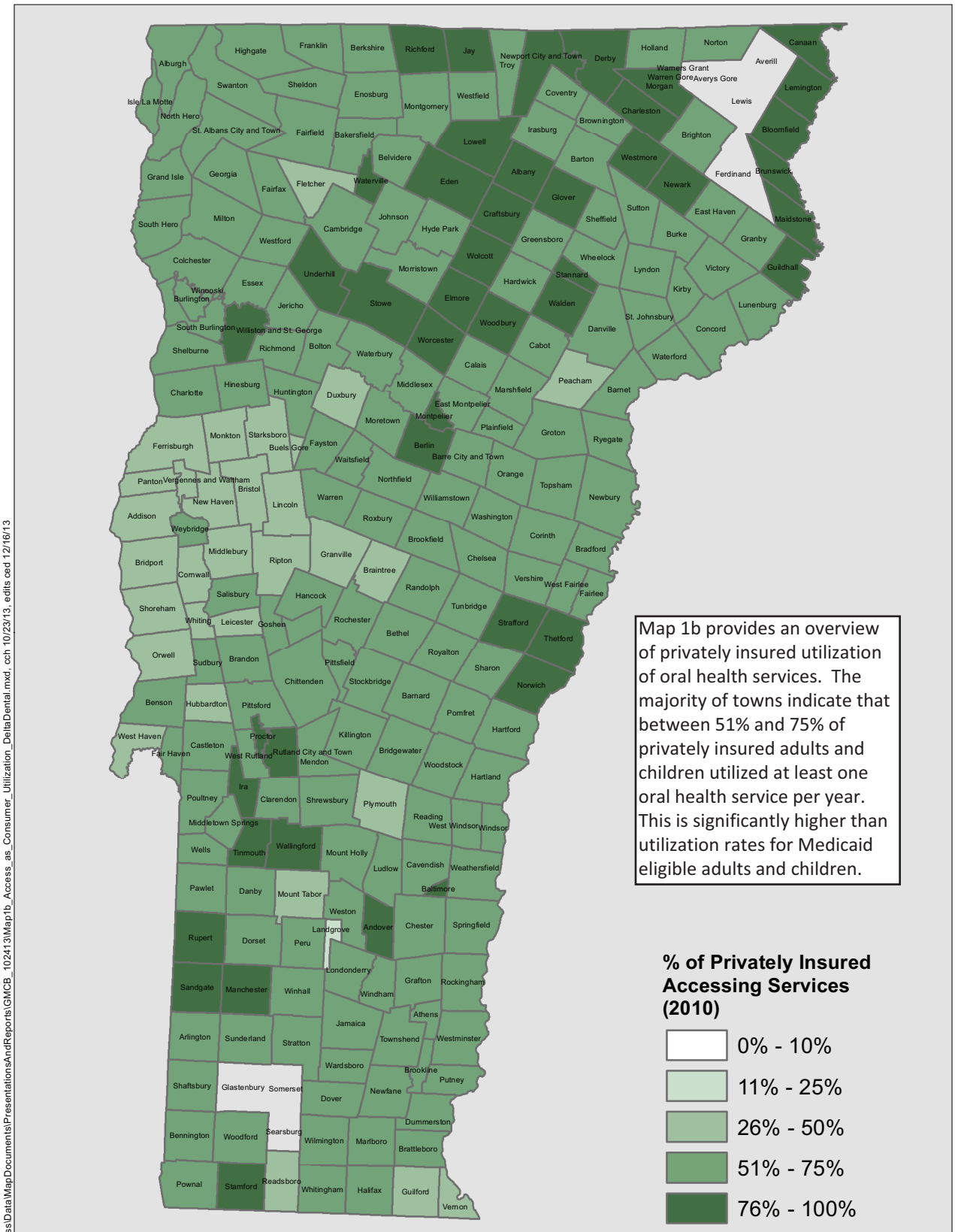

Sources: Delta Dental (2010): Northeast Delta Dental; Town Boundaries: VCGI

Percent of Privately Insured Accessing Services by Town (2010)

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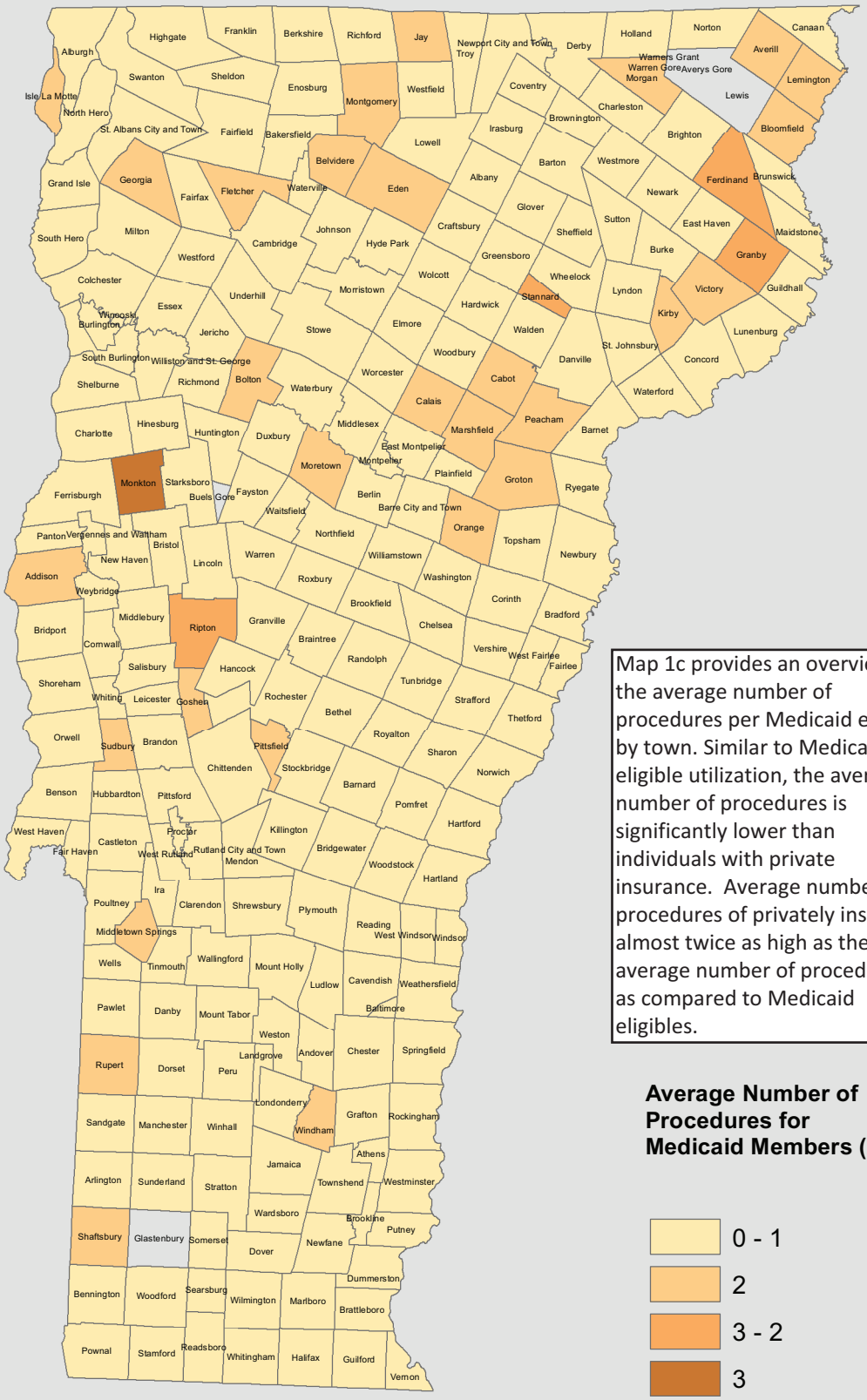
Utilization

Vermont's Dental Health
Green Mountain Care Board

Map #1b

O:\Proj-13\AIM13-052-Dental Health Access\Data\MapDocuments\PresentationsAndReports\GMCB_102413\Map1b_Access_as_Consumer_Utilization_DeltaDental.mxd, cch 10/23/13, edits ced 12/16/13



Map 1c provides an overview of the average number of procedures per Medicaid eligible by town. Similar to Medicaid eligible utilization, the average number of procedures is significantly lower than individuals with private insurance. Average number of procedures of privately insured is almost twice as high as the average number of procedures as compared to Medicaid eligibles.

Average Number of Procedures for Medicaid Members (2010)

- 0 - 1
- 2
- 3 - 2
- 3

Sources: Medicaid (2010): Vermont Medicaid Office; Town Boundaries: VCGI

Average Number Procedures for Medicaid Insured by Town (2010)

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Utilization

Vermont's Dental Health
Green Mountain Care Board

Map #1c

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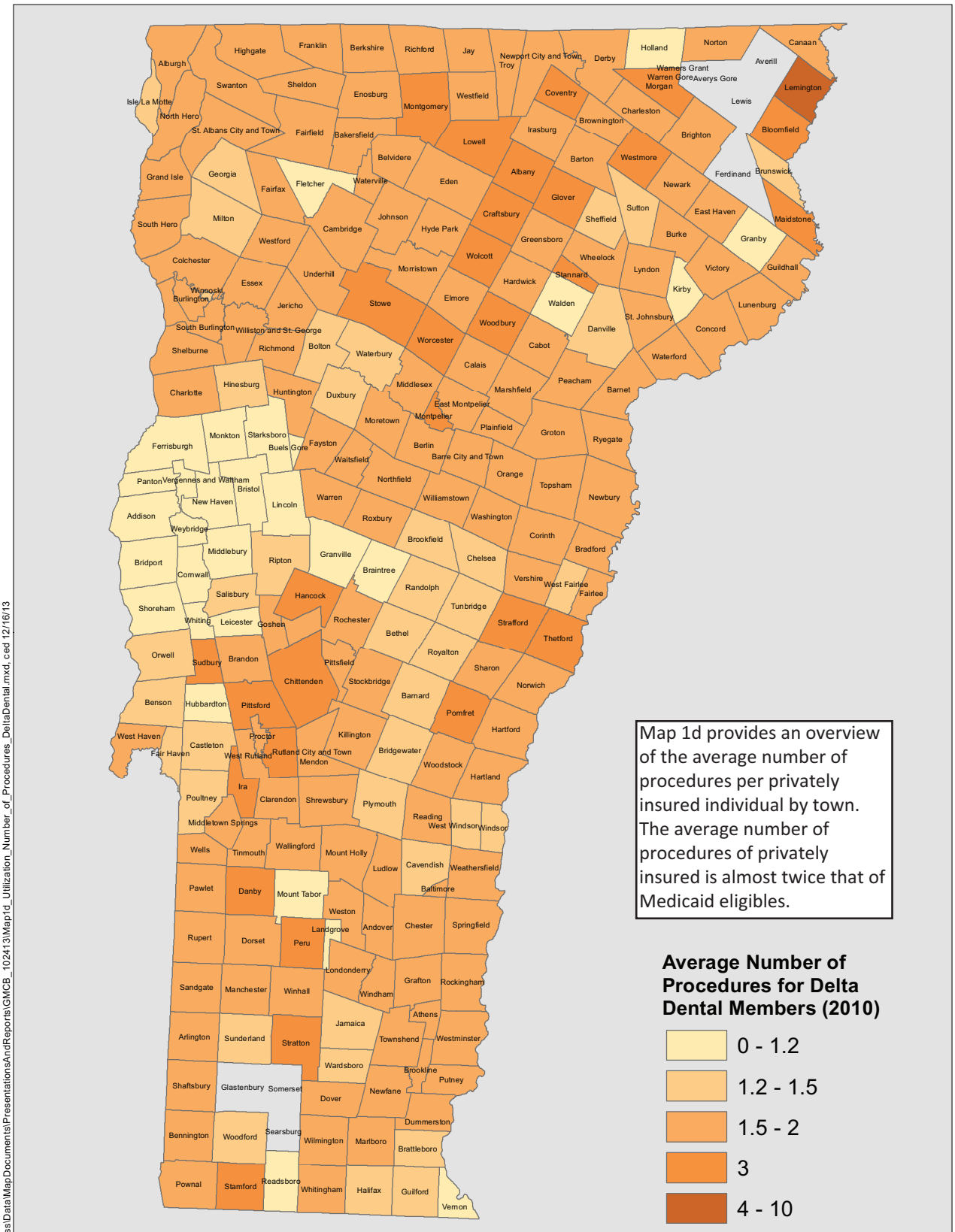

Map 1d provides an overview of the average number of procedures per privately insured individual by town. The average number of procedures of privately insured is almost twice that of Medicaid eligibles.

Average Number of Procedures for Delta Dental Members (2010)

- 0 - 1.2
- 1.2 - 1.5
- 1.5 - 2
- 3
- 4 - 10

Sources: Delta Dental (2010): Northeast Delta Dental; Town Boundaries: VCGI

Average Number Procedures for Delta Dental Insured by Town (2010)

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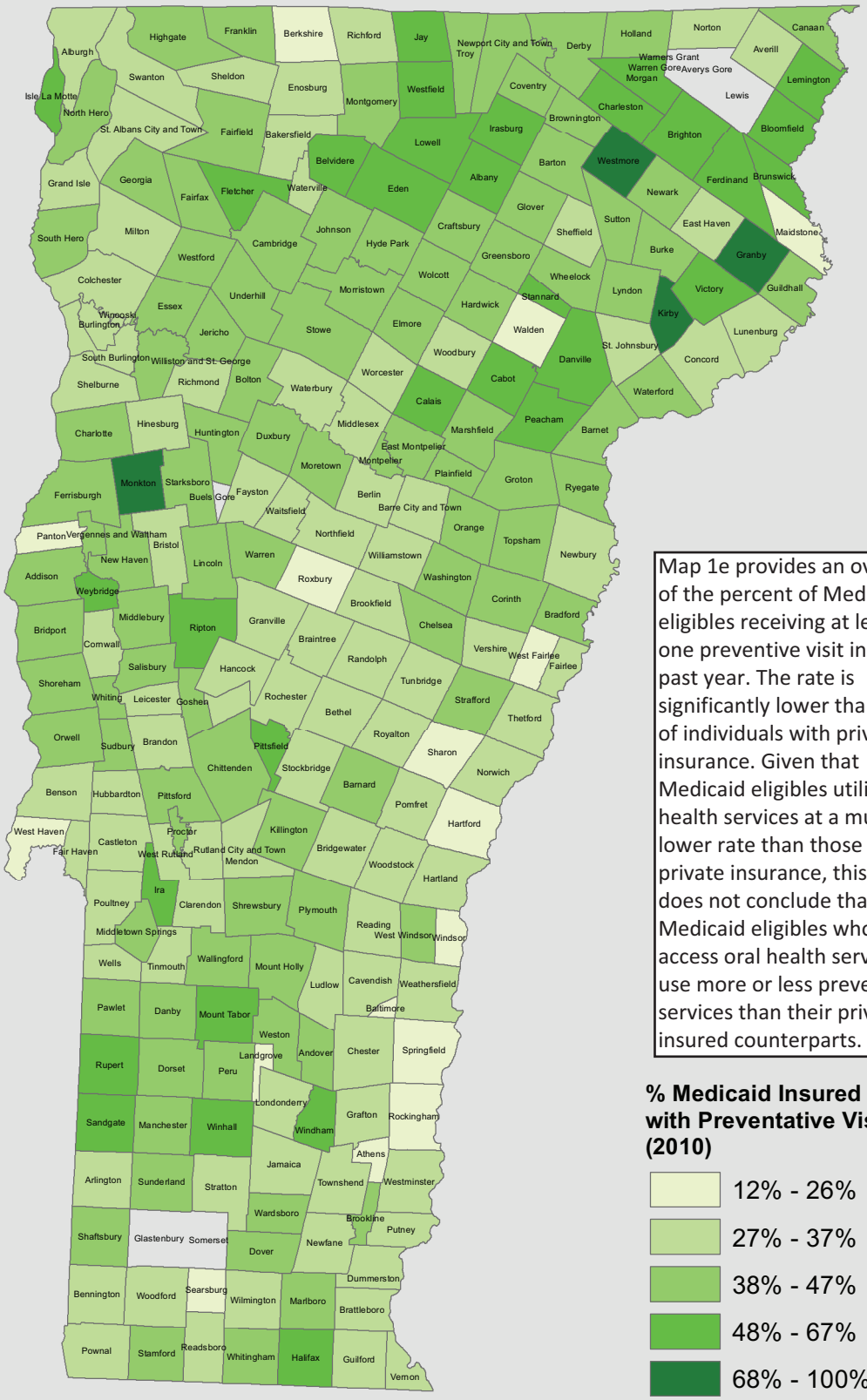
Utilization

Vermont's Dental Health
Green Mountain Care Board

Map #1d

O:\Proj-13\AIM13-052-Dental Health Access\Data\MapDocuments\PresentationsAndReports\GMCB_102413\Map1d_Utilization_Number_of_Procedures_DeltaDental.mxd, ced 12/16/13



Map 1e provides an overview of the percent of Medicaid eligibles receiving at least one preventive visit in the past year. The rate is significantly lower than that of individuals with private insurance. Given that Medicaid eligibles utilize oral health services at a much lower rate than those with private insurance, this data does not conclude that Medicaid eligibles who access oral health services use more or less preventive services than their privately insured counterparts.

% Medicaid Insured with Preventative Visit (2010)

- 12% - 26%
- 27% - 37%
- 38% - 47%
- 48% - 67%
- 68% - 100%

Sources: Medicaid (2010): Vermont Medicaid Office; Town Boundaries: VCGI

Percent Medicaid Insured with Preventative Visit by Town (2010)

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Utilization

Vermont's Dental Health
Green Mountain Care Board

Map #1e

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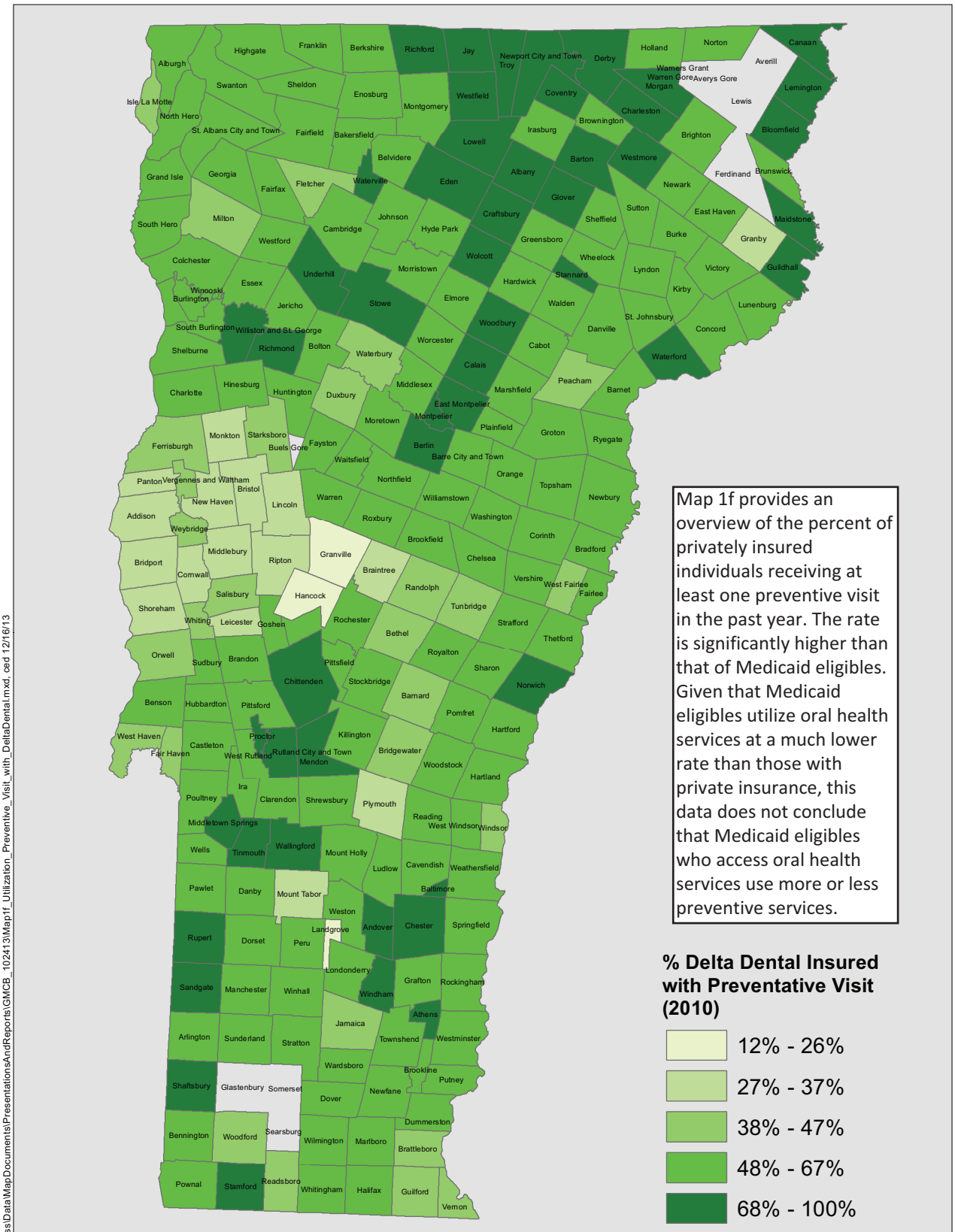

Map 1f provides an overview of the percent of privately insured individuals receiving at least one preventive visit in the past year. The rate is significantly higher than that of Medicaid eligibles. Given that Medicaid eligibles utilize oral health services at a much lower rate than those with private insurance, this data does not conclude that Medicaid eligibles who access oral health services use more or less preventive services.

% Delta Dental Insured with Preventative Visit (2010)

- 12% - 26%
- 27% - 37%
- 38% - 47%
- 48% - 67%
- 68% - 100%

Sources: Delta Dental (2010): Northeast Delta Dental; Town Boundaries: VCGI

Percent Delta Dental Insured with Preventative Visit by Town (2010)

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Utilization

Vermont's Dental Health
Green Mountain Care Board

Map #1f

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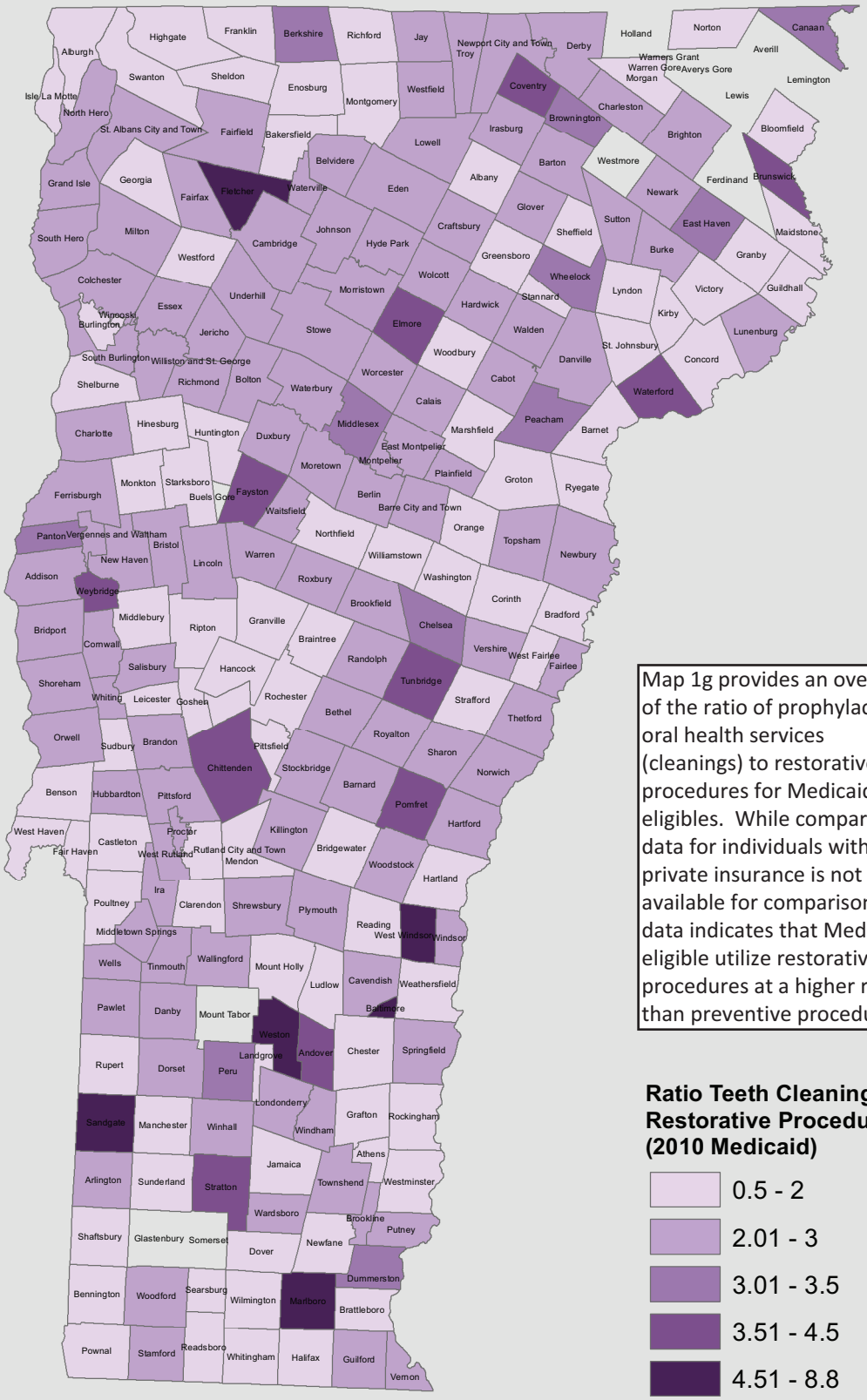

Map 1g provides an overview of the ratio of prophylactic oral health services (cleanings) to restorative procedures for Medicaid eligibles. While comparable data for individuals with private insurance is not available for comparison this data indicates that Medicaid eligible utilize restorative procedures at a higher rate than preventive procedures.

Ratio Teeth Cleaning to Restorative Procedures (2010 Medicaid)

- 0.5 - 2
- 2.01 - 3
- 3.01 - 3.5
- 3.51 - 4.5
- 4.51 - 8.8

Sources: Medicaid (2010): Vermont Medicaid Office; Town Boundaries: VCGI

Ratio of Teeth Cleaning to Restorative Procedures for Medicaid Memebers by Town (2010)

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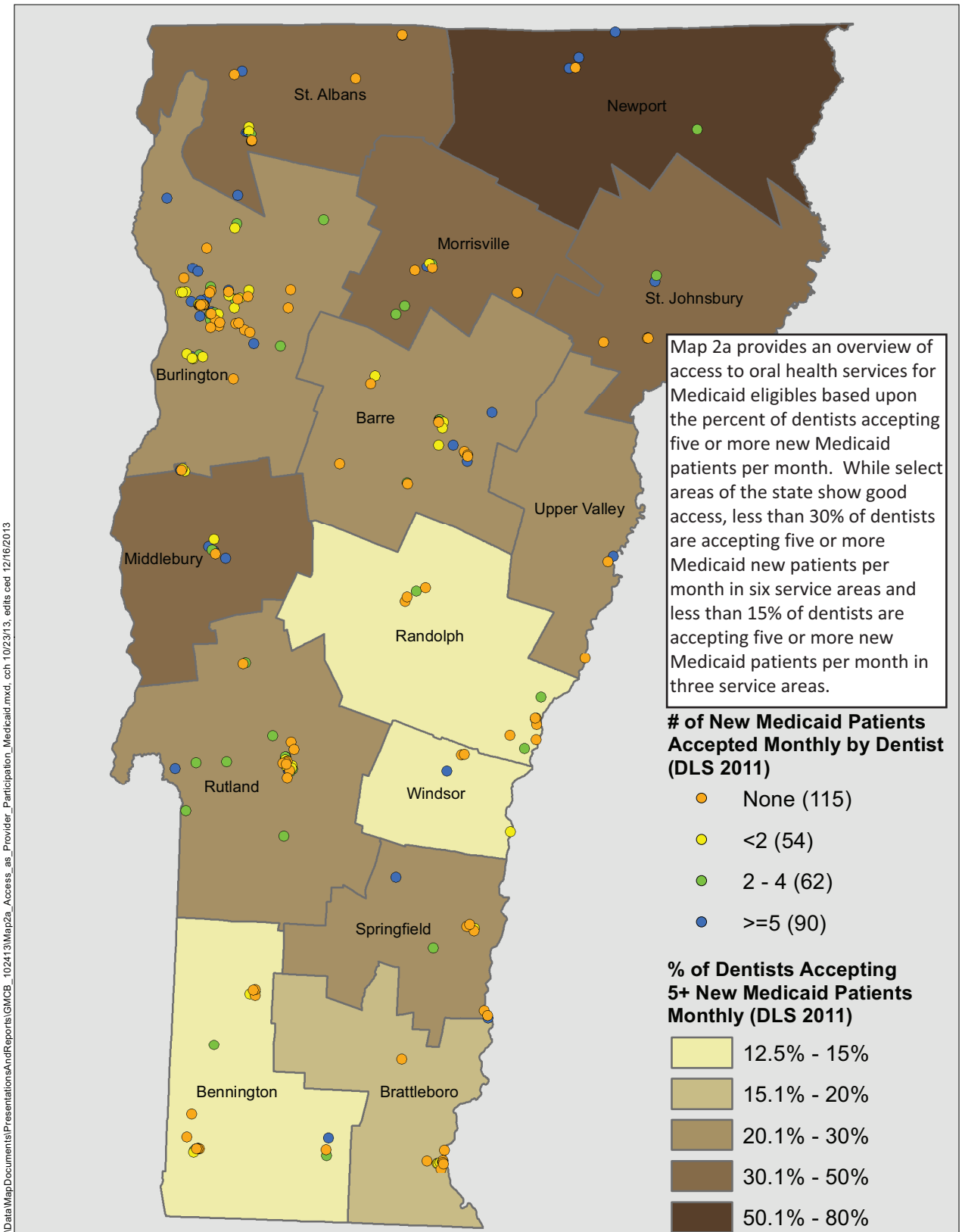
Utilization

Vermont's Dental Health Green Mountain Care Board

Map #1g

O:\Proj-13\AIM13-052-Dental Health Access\Data\MapDocuments\PresentationsAndReports\GMCB_102413\Map1g_Utilization_Restorative_Visit_with_Medicaid.mxd, ced 12/16/13



Sources: Vermont Dental Licensing Survey (DLS 2011), Health Service Area (HSA) Boundaries: Vermont Department of Health

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Medicaid Provider Participation by Health Service Area

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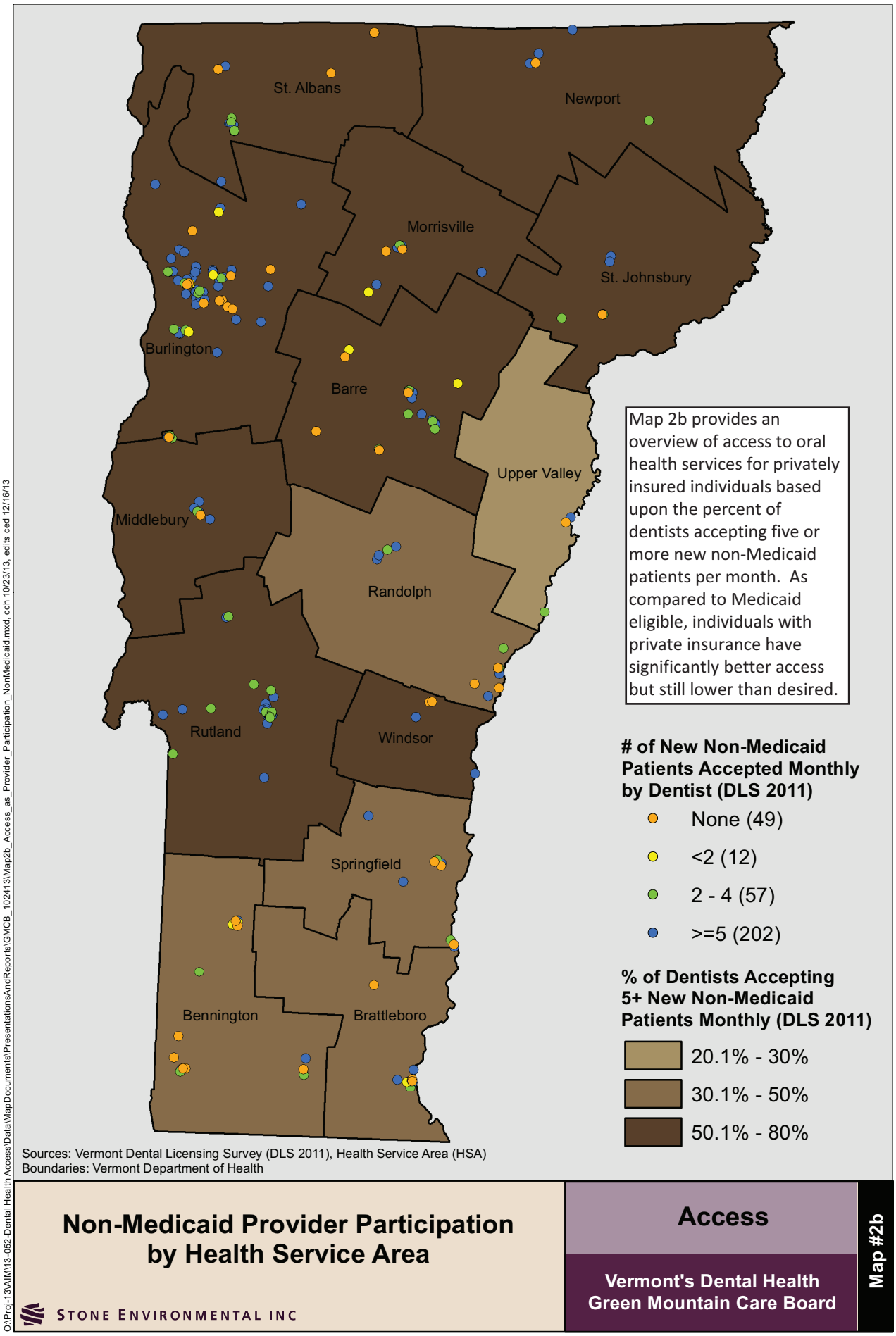
Access

Vermont's Dental Health
Green Mountain Care Board

Map #2a


St. Albans
Newport
Morrisville
St. Johnsbury
Burlington
Barre
Upper Valley
Middlebury
Randolph
Rutland
Windsor
Springfield
Bennington
Brattleboro
Map 2b provides an overview of access to oral health services for privately insured individuals based upon the percent of dentists accepting five or more new non-Medicaid patients per month. As compared to Medicaid eligible, individuals with private insurance have significantly better access but still lower than desired.
# of New Non-Medicaid Patients Accepted Monthly by Dentist (DLS 2011)
None (49)
<2 (12)
2 - 4 (57)
>=5 (202)
% of Dentists Accepting 5+ New Non-Medicaid Patients Monthly (DLS 2011)
20.1% - 30%
30.1% - 50%
50.1% - 80%
Sources: Vermont Dental Licensing Survey (DLS 2011), Health Service Area (HSA) Boundaries: Vermont Department of Health
Non-Medicaid Provider Participation by Health Service Area
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Access
Vermont's Dental Health
Green Mountain Care Board
Map #2b
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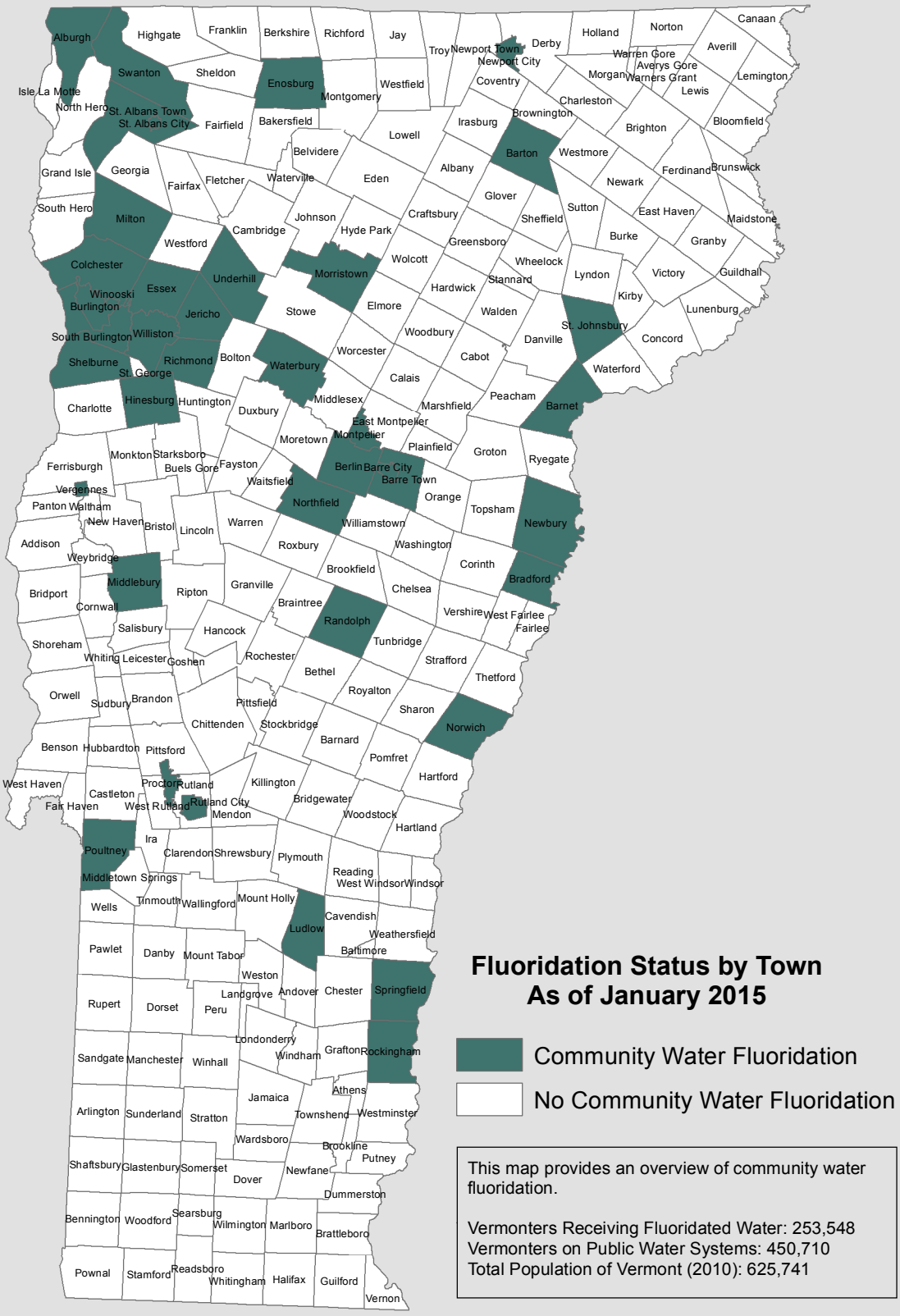

Sources: Fluoride (2015): Vermont Department of Health; Town Boundaries: VCGI.

Community Water Fluoridation

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Map #2c (Rev.)

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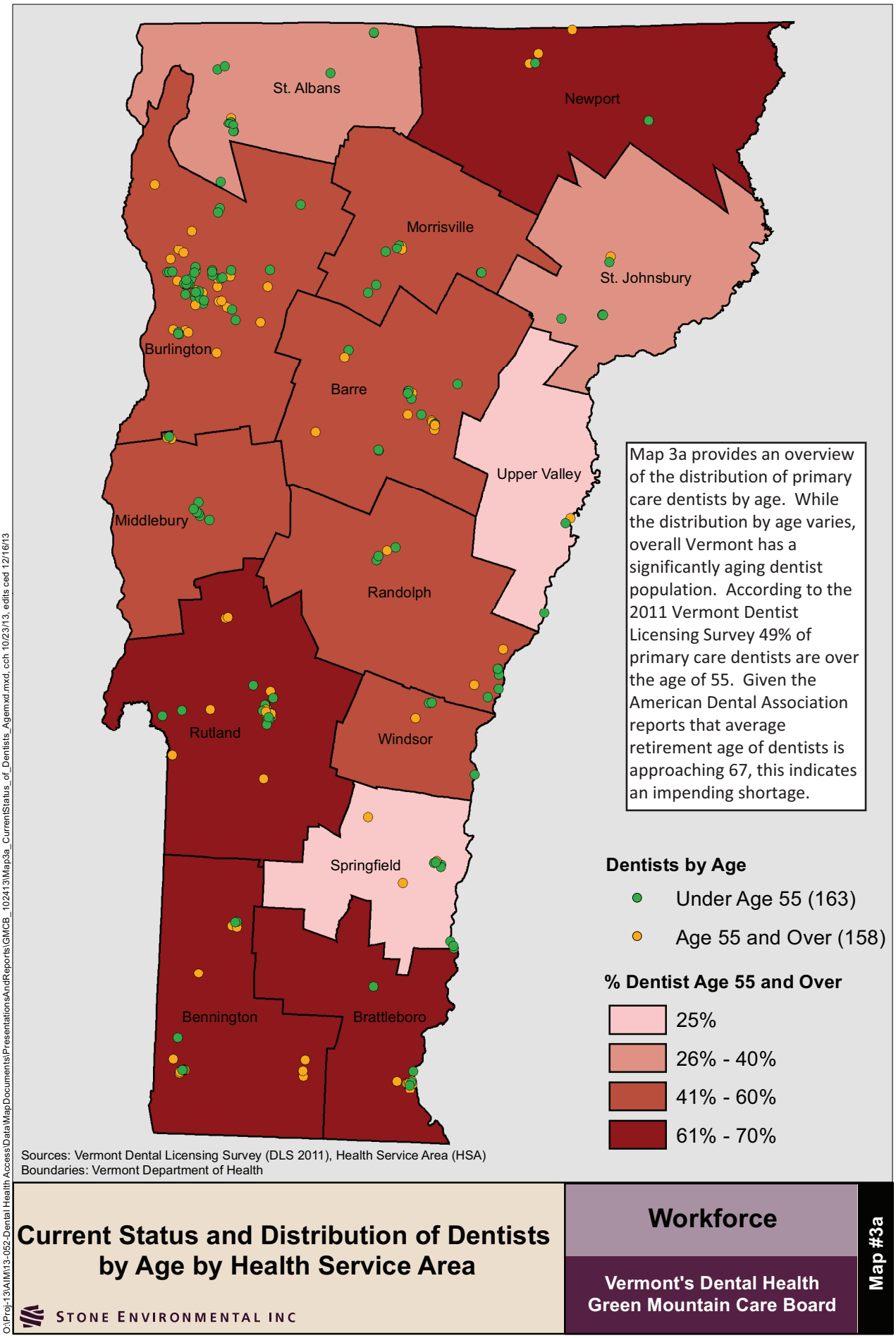

Current Status and Distribution of Dentists by Age by Health Service Area

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Workforce

Vermont's Dental Health
Green Mountain Care Board

Map #3a

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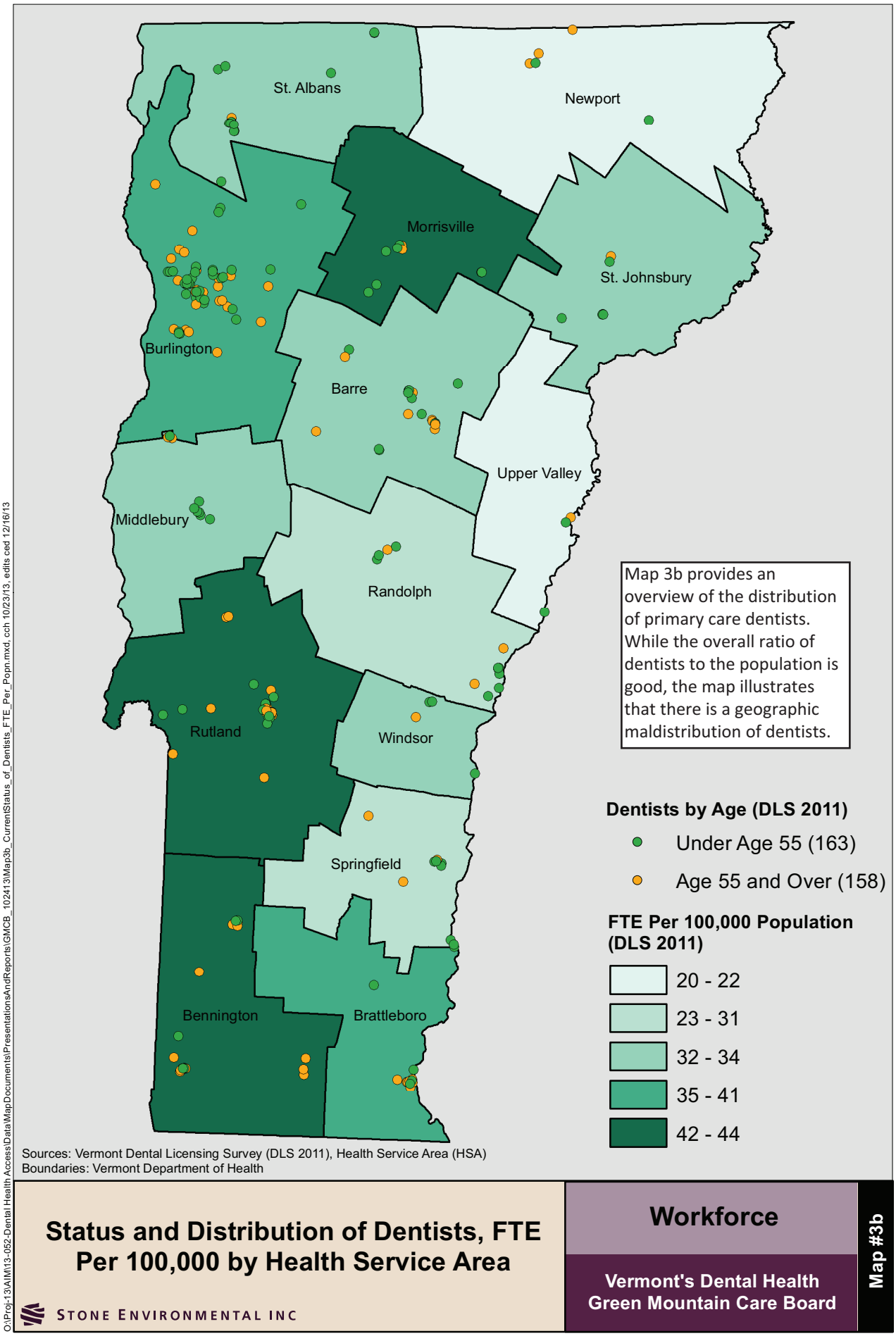
St. Albans
Newport
Morrisville
St. Johnsbury
Burlington
Barre
Upper Valley
Middlebury
Randolph
Rutland
Windsor
Springfield
Bennington
Brattleboro
Map 3b provides an overview of the distribution of primary care dentists. While the overall ratio of dentists to the population is good, the map illustrates that there is a geographic maldistribution of dentists.
Dentists by Age (DLS 2011)
Under Age 55 (163)
Age 55 and Over (158)
FTE Per 100,000 Population (DLS 2011)
20 - 22
23 - 31
32 - 34
35 - 41
42 - 44
Sources: Vermont Dental Licensing Survey (DLS 2011), Health Service Area (HSA) Boundaries: Vermont Department of Health
Status and Distribution of Dentists, FTE Per 100,000 by Health Service Area
STONE ENVIRONMENTAL INC
Workforce
Vermont's Dental Health
Green Mountain Care Board
Map #3b
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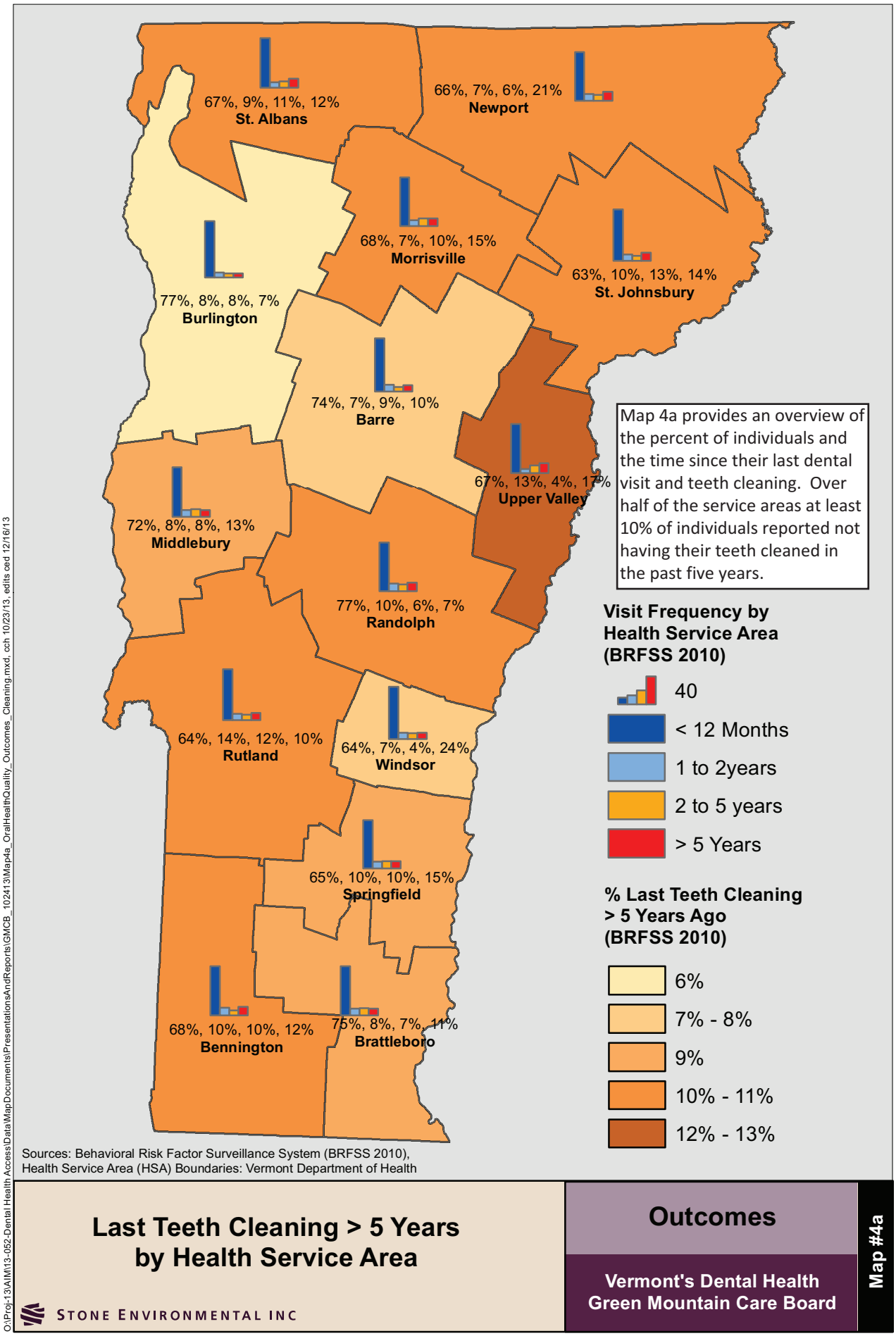

Sources: Behavioral Risk Factor Surveillance System (BRFSS 2010), Health Service Area (HSA) Boundaries: Vermont Department of Health

Last Teeth Cleaning > 5 Years by Health Service Area

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Outcomes

Vermont's Dental Health
Green Mountain Care Board

Map #4a

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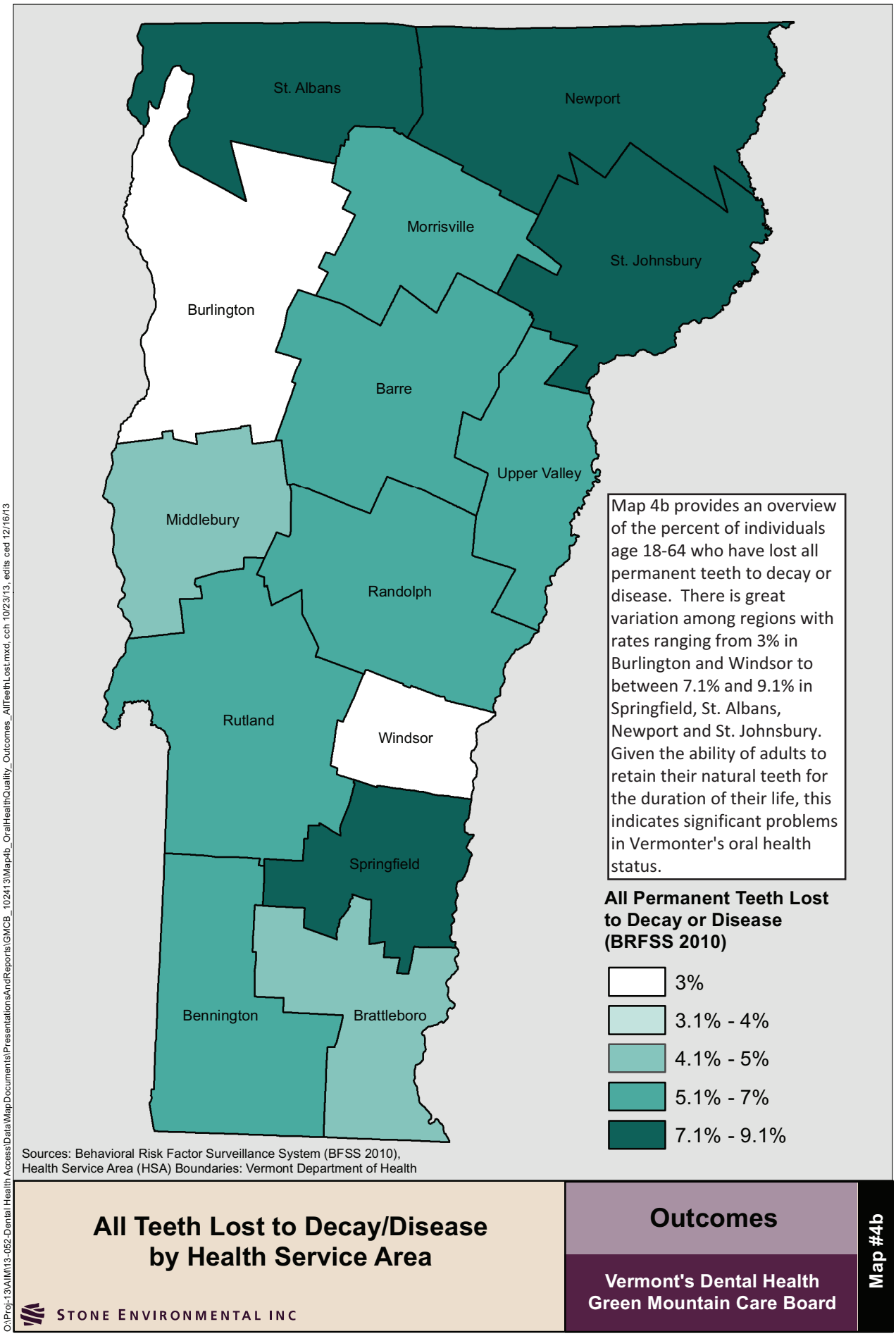
St. Albans
Newport
Morrisville
St. Johnsbury
Burlington
Barre
Upper Valley
Middlebury
Randolph
Rutland
Windsor
Springfield
Bennington
Brattleboro
Map 4b provides an overview of the percent of individuals age 18-64 who have lost all permanent teeth to decay or disease. There is great variation among regions with rates ranging from 3% in Burlington and Windsor to between 7.1% and 9.1% in Springfield, St. Albans, Newport and St. Johnsbury. Given the ability of adults to retain their natural teeth for the duration of their life, this indicates significant problems in Vermonter's oral health status.
All Permanent Teeth Lost to Decay or Disease (BRFSS 2010)
3%
3.1% - 4%
4.1% - 5%
5.1% - 7%
7.1% - 9.1%
Sources: Behavioral Risk Factor Surveillance System (BFSS 2010), Health Service Area (HSA) Boundaries: Vermont Department of Health
All Teeth Lost to Decay/Disease by Health Service Area
STONE ENVIRONMENTAL INC
Outcomes
Vermont's Dental Health
Green Mountain Care Board
Map #4b
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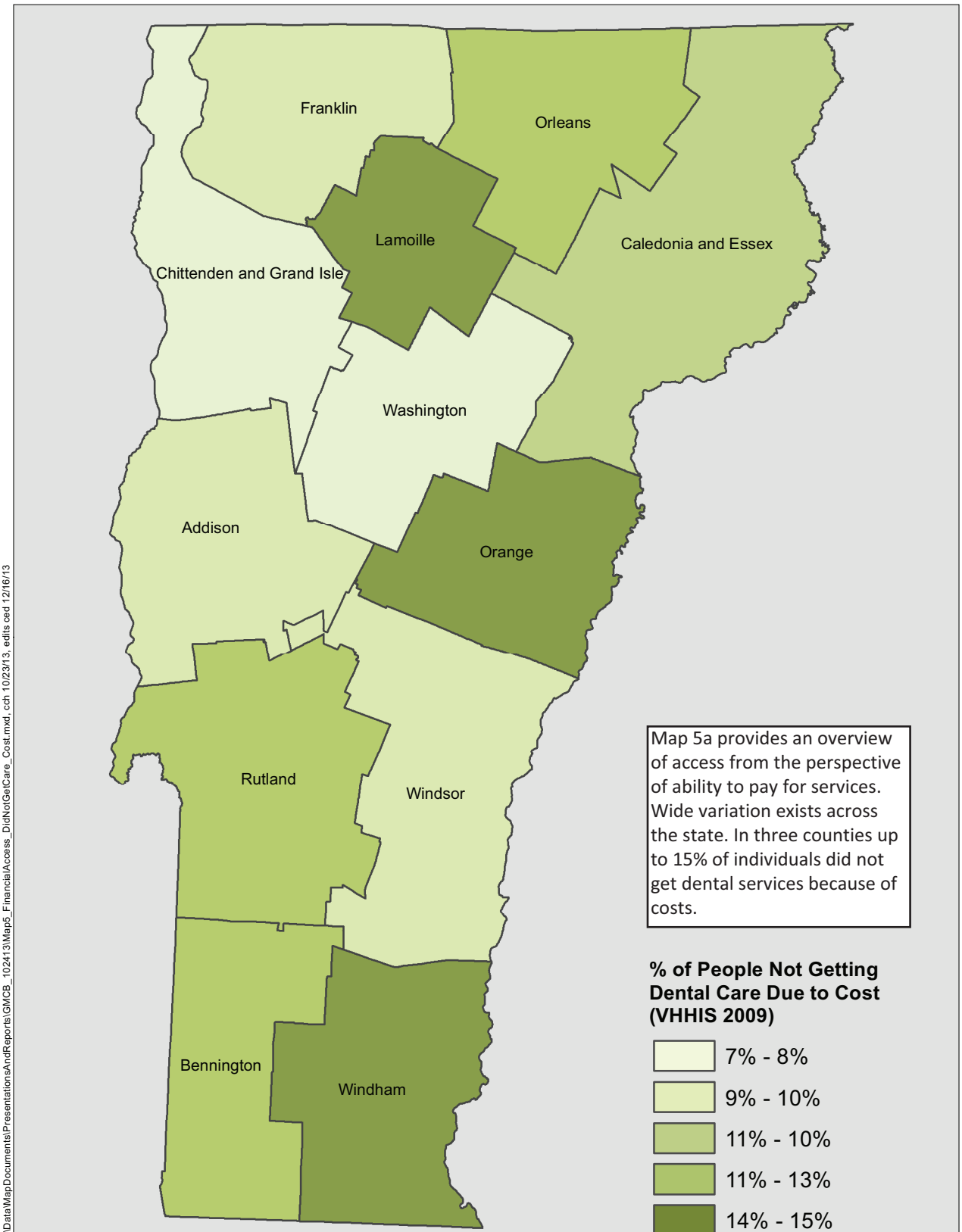

Sources: Vermont Household Health Insurance Survey (VHHIS, 2009): Vermont Department of Financial Regulation; County Boundaries: VCGI

Percent of People Not Getting Dental Care Due to Cost by County

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Financial

Vermont's Dental Health
Green Mountain Care Board

Map #5a

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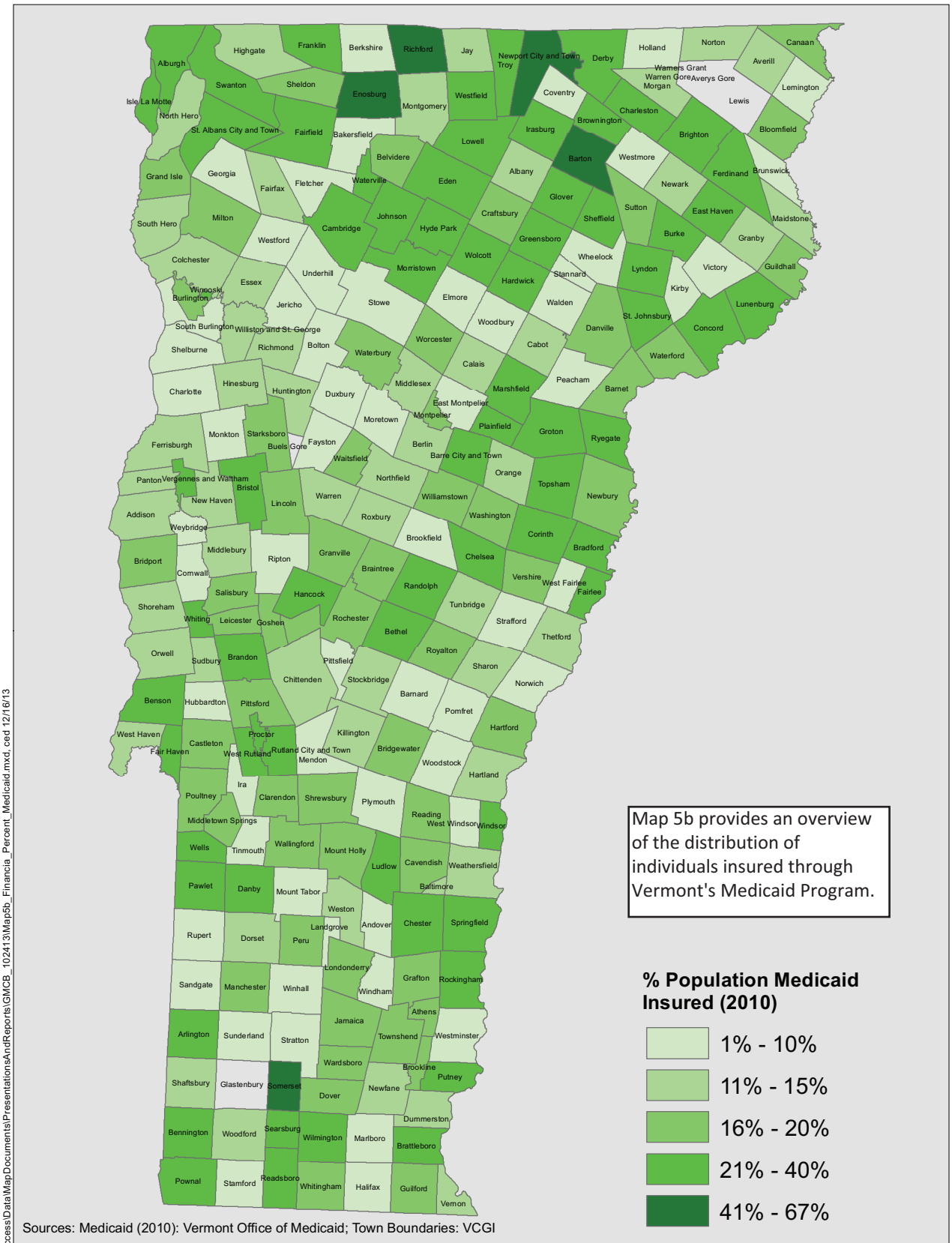

Map 5b provides an overview of the distribution of individuals insured through Vermont's Medicaid Program.

% Population Medicaid Insured (2010)

- 1% - 10%
- 11% - 15%
- 16% - 20%
- 21% - 40%
- 41% - 67%

Sources: Medicaid (2010): Vermont Office of Medicaid; Town Boundaries: VCGI

Percent of Population Insured with Medicaid by Town (2010)

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Financial

Vermont's Dental Health
Green Mountain Care Board

Map #5b

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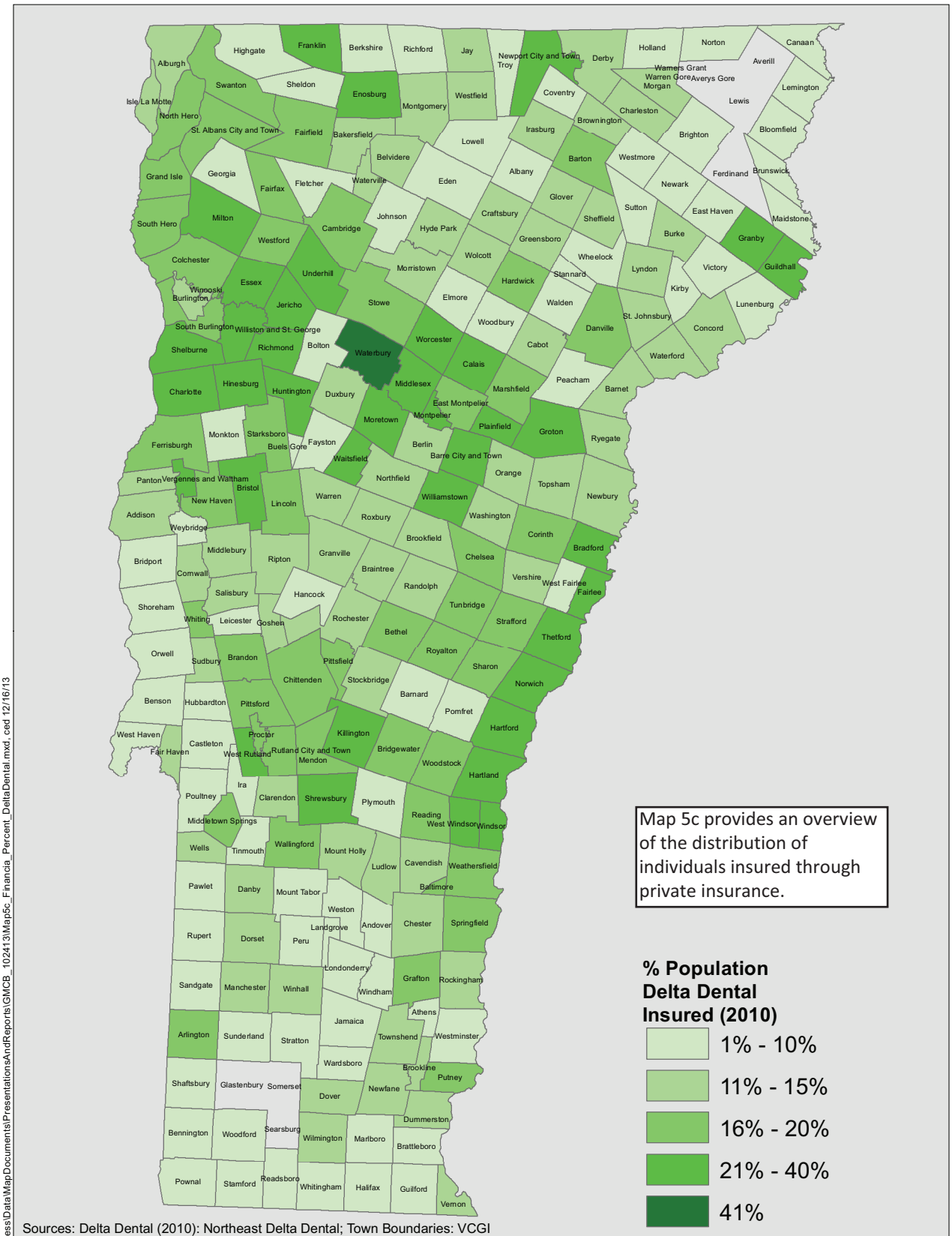

Map 5c provides an overview of the distribution of individuals insured through private insurance.

% Population Delta Dental Insured (2010)

- 1% - 10%
- 11% - 15%
- 16% - 20%
- 21% - 40%
- 41%

Sources: Delta Dental (2010): Northeast Delta Dental; Town Boundaries: VCGI

Percent of Population Insured with Delta Dental by Town (2010)

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Financial

Vermont's Dental Health Green Mountain Care Board

Map #5c

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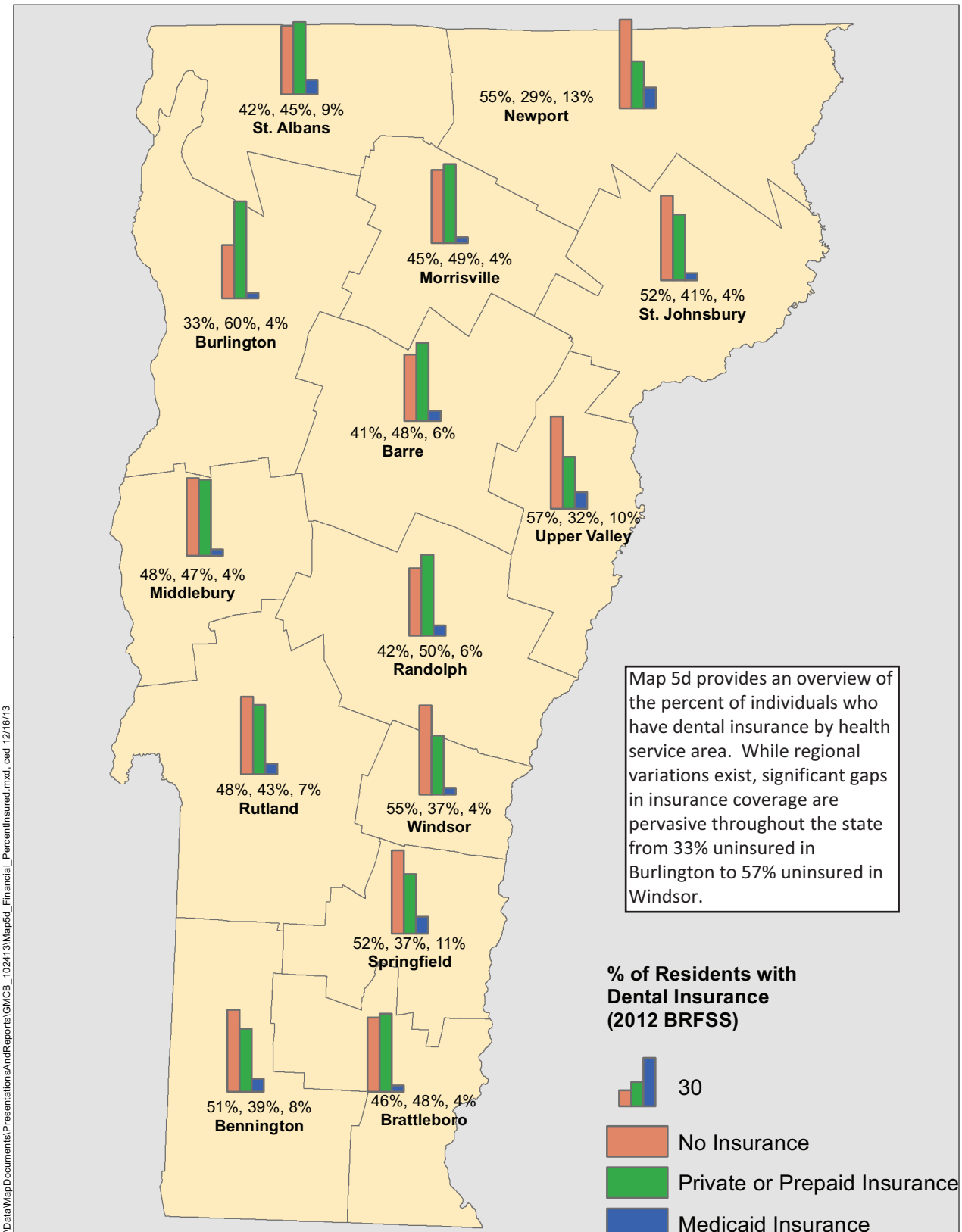

Sources: Medicaid (2010): Vermont Office of Medicaid; Delta Dental (2010): Northeast Delta Dental; Health Service Area (HSA) Boundaries: Vermont Department of Health

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Percent of Residents with Dental Insurance by Health Service Area

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Financial

Vermont's Dental Health
Green Mountain Care Board

Map #5d

Section IV: Literature Review

A literature review was conducted in order to provide the Green Mountain Care Board with informed recommendations for potential oral health care reform in Vermont. This literature review identified five primary reform topics:

1. Increasing Medicaid reimbursement rates alongside administrative simplification
2. Pay for performance and quality initiatives
3. Medical-dental collaboration and other prevention strategies
4. Alternative workforce models in dentistry
5. Essential benefits

Increasing Medicaid Reimbursement Rates alongside Administrative Simplification

Two studies demonstrate that a combination of rate reimbursement and administrative simplification is necessary to improve access to dental care for children receiving Medicaid. The first report (Borchgrevink, 2008) focuses on the reform strategies of six states throughout the late 1990s and early 2000s. A second (Beazoglou, 2013) examines the effects of increased reimbursement rates and administration simplification on dental care access among Medicaid children in Connecticut between 2006 and 2011. Borchgrevink reviewed changes to dental benefits in Alabama, Tennessee, South Carolina, Michigan, Virginia, and Washington. Benefits were either provided through state-run Medicaid programs, or through carve-out programs managed by third-party administrators. Each state increased reimbursement rates significantly. Alabama, South Carolina, and Michigan all enacted reform efforts in 2000; Tennessee in 2002, and Virginia in 2005. Increases in utilization of dental services among children ages 0-20, from the initial year of states' reform until 2006, in all five states, range from 33-76%, while increases in provider participation range from 62-150% (Washington began reform in 1995, but comparable data from before and after 1995 was available).

Beazoglou's report tracked changes in utilization rates among Medicaid enrolled children and provider participation between 2006 and 2011 in Connecticut. Following rate increases and administrative simplification that went into effect in 2007, utilization rates for children continuously enrolled in Medicaid increased from 46% to 69.5%, and private dentist participation in the Medicaid program rose from 416 dentists in 2006 to 937 in 2010. Borchgrevink and Beazoglou both indicate that the states in their studies all conducted outreach and education efforts for both patients and providers in addition to other reform strategies; they both advise that outreach and education is a necessary component of reform package, if reform is going to successfully improve access to care for young Medicaid recipients.

A third study (Snyder, 2009) describes Rhode Island's RIte Smiles program, a specialized dental program that provides enhanced care to young Medicaid-enrolled children through United Healthcare Dental. Providers who treat these patients receive higher reimbursement rates than they would traditionally receive from Medicaid; the program is paid for by funds that have been redirected from other parts of the dental care budget. In its first year, the program saw substantial increase in provider participation: "significant" providers increased from 1.3% to 39.4% (out of 550 dentists state-wide). Utilization for six year olds, the oldest group in the program, increased from 18.7% to 36.3%. At the time this report was written, not enough data had been collected to determine whether RIte Smiles was cost-effective. Nonetheless, the dramatic rise in provider participation in this first year supports the findings of both Borchgrevink and Beazoglou that increased rate reimbursement will help improve access by compelling more dentists to treat Medicaid recipients.

A study conducted on the effect of Medicaid payment rates on children's access to dental care (Buchmueller, 2013) found a positive relationship between payment rates and the likelihood that publicly-insured children have at least one dental visit in a year, as well as the likelihood that dentists serve publicly-insured patients. Buchmueller reports that a $10 increase in payment rates leads to a 2% increase in utilization. Buchmueller warns, however, that rate increases would be quite costly: because a policy change would require paying higher rates for all visits, payments for inframarginal visits would outweigh payments for additional visits the policy changed created. Buchmueller recommends that in addition to rate increases, states look into other strategies to increase access to care, including alternative dental workforce models.

Medical-Dental Collaboration and Other Prevention Strategies

A 2008 article measures the cost of dentally-related visits to Medicaid for North Carolina children who were at high risk for dental disease (Savage, 2004). Looking at children born in 1992 and continuously enrolled in Medicaid for five years, Savage also measures the age at which children received their first preventive dental visit between 1992 and 1997 to demonstrate future utilization and cost of dentally-related services for children ages 0 to 5. Of the 9,204 children who met criteria for the study, 27% had a dental visit in the study period: 0.24% before age 1, 2.7% before age 2, 5.1% before age 3, 9.9% before age 4, and 8.9% before age 5. Children whose first preventive dental visit was after age 3 had a greater number of future restorative and emergency visits. Cost to Medicaid, per child, broken down based on the age of first preventive visit is significant: cost to Medicaid for children whose first visit was between 0 and 1 was $262; children whose first visit was between 4 and 5 represent a cost of $547 during the same period of time. Savage concludes that children who receive preventive dental services earlier in life are more likely to receive future preventive, rather than restorative or emergency visits, and incur fewer dentally-related costs as a result.

A 2008 policy statement from the American Academy of Pediatrics provides recommendations on the provision of preventive oral health interventions by pediatric primary care practitioners (Hale, 2008). Data from the Medical Expenditure Panel Survey (MPES) reveals that 89% of infants and one-year-olds visit a pediatrician annually, while only 1.5% of children in that same age group visit a dentist. Hale notes it is therefore critical that pediatricians be able to provide preventive dental health interventions, including oral health risk assessments, anticipatory guidance, fluoride varnishes, and referrals to a dental provider. Hale refers to a report for the U.S. Preventive Task Force (Bader, 2004) as evidence that pediatric practitioners are able to recognize carious teeth in young children after receiving two hours of training. Children deemed to be at high risk for caries, determined by the presence of other carious teeth or by white lesions, may be candidates for higher frequencies of fluoride treatments such as varnishes, which have been shown to reduce caries by 30% to 63.2% (Bader). Furthermore, pediatric practitioners are in a good position to refer high risk children to a dental home. This evidence, Hale concludes, suggests that preventive oral health interventions can easily and successfully be incorporated into pediatric practices.

A study on the effects of practice-based intervention in pediatric clinics serving underserved populations (Kressin, 2009) supports Hale's assessment that pediatricians are in a prime position to provide preventive dental services for young children. Pediatricians and clinic nurses at a Boston pediatric clinic attended a one-hour training that focused on providing instruction on dietary counseling, dental hygiene, and tooth monitoring to parents and caregivers of children between 6 months and 5 years of age. Kressin reports that provider's early childhood caries (EEC) knowledge increased from 66% to 79% as a result of the training. Furthermore, Kressin notes that providers at the study's intervention site were between 7% and 34% more likely to provide EEC risk counseling than at the comparison site, which served a population of similar sociodemographic makeup. Finally, Kressin's findings suggest that provider counseling at the intervention site was linked to a 77% reduction of EEC incidence over time.

Two reports provide recommendations for increasing provision of preventive oral health services by medical providers. The first looks at the Medicaid reimbursement policies of five states to offer options for other states (Hanlon, 2010). The second report surveys those states that allow some level of preventive dental services by non-dental primary care providers (Sams, 2013). Hanlon tells us that states' reimbursable preventive service components may differ based on how they administer their programs. While states can use either dental or medical billing codes, Hanlon warns that having different reimbursement rates can lead to tension between the dental and medical community, which is especially significant as she finds collaboration between the two communities essential for the success of these initiatives. Hanlon also notes that few states have formal evaluation processes by which to measure the success of their reimbursement policies, and recommends that states looking to enact similar policies conduct an evaluation at the time of implementation in order to establish a baseline to track against.

In 2008, Sams conducted a survey to determine how many state Medicaid programs had initiated reimbursement policies for medical primary care providers conducting preventive oral health services. The survey findings indicate that the majority of states included fluoride varnishes as part of their initiative; that less than half included oral health screenings and counseling; and finally, that 78% of those initiatives only reimbursed providers for the fluoride varnish itself. Only 35% of those states included in Sams' final analysis offered specific guidelines or recommendations for providers delivering services, and only 50% of states required that providers undergo training before providing preventive services. Sams also notes that few states offered numbers for how many providers participated in the initiative or how many patients the initiative treated. The biggest barriers cited to implementing initiatives were lack of funding in Medicaid budgets and concern about reimbursement codes. Additionally, more than half of states responded that lack of physician participation, as well as dentist opposition, were barriers to implimentation. Sams' recommendations include: reimbursement for multiple services to attract provider participation; reimbursement be contingent on prior training; and Medicaid address the dental workforce shortage by increasing rates and looking into alternative workforce models.

Alternative Dental Workforce

A 2009 report details the training and function of dental professionals in the United States – both those currently in use and those being proposed (Edelstein). While use of alternative dental providers is a relatively new concept domestically, Edelstein notes that these models have been used internationally for decades. The table below details the training time associated with U.S. provider models. With the exception of the Community Dental Health Coordinator (CDHC), these models are all currently in use. At the time of this report, programs for the CDHC had been piloted at the University of Oklahoma and UCLA. Not included are training requirements for Expanded Function Dental Assistants (EFDA) or Expanded Function Dental Hygienists (EDHA) as these requirements vary by state. The Advanced Dental Hygiene Practitioner (ADHP) is still in the planning phase; no training programs exist.

			Course Distribution		
Provider	**Degree**	**Duration**	**Bio-medical**	**Social-Behavioral**	**Clinical**
Dentists	Doctor of Dental Surgery Doctor of Dental Medicine	4 years post-baccalaureate (8 years post high school)	18%	6%	76%
Dental Hygienists (DH)	Associate and Bachelor in Dental Hygiene	2-4 years post high school	27%	13%	60%
Dental Assistants (DA)	Diploma of Associate in Dental Assisting	1-2 years post high school	23%	10%	67%
Dental Health Aide Therapists (DHAT)	Certificate	2 years	22.5%	8.5%	69%
MN Advanced Dental Therapists (ADT)	Master of Science – Metropolitan State	26 months, BS or BA in dental hygiene	18%	26%	65%
	Master of Dental Therapy – University of MN	28 months, BS or BA in any field	Not yet determined		
MN Dental Therapist (DT)	Bachelor of Science in Dental Therapy	40 months			
Community Dental Health Coordinator (CDHC)	Certificate	18 months	~11%	~52%	~37%

Edelstein notes that while training programs for the Minnesota ADT and DT do not offer any more clinical time or experience than the DHAT program, the former are mirrored after classical dentist education programs. The DHAT program is experiential and allows its graduates to provide oral health counseling, screenings and treatment that are sensitive to the needs of their community. This is important to remember when considering the table below, which highlights the procedures that each provider model is allowed to perform.

Categories of Intraoral Procedures (ordered from most to least restrictive)				
Provider Type	Diagnosis & Treatment Planning	Basic Restorative Care	Preventive Care including Scaling and Root Planing	Preventive Care including Coronal Polishing
ADHP	X	X		X
MN ADT	X[1]	X		X
MN DT		X		x
AK DHAT	X[2]	X		X
DH			X	X
EFDH		X[3]	X	X
DA				X
EFDA		X[3]		X
CDHC				X

[1] May evaluate and assess dental disease and form treatment plan with collaborating dentist
[2] may "diagnose" caries
[3] EDFH and EFDA allowable procedures vary

For example, while ADTs may diagnose oral health conditions based on their agreement with their collaborating dentist, DHATs are only able to "diagnose" caries. Furthermore, while ADTs are trained to provide care to underserved children and adults, the scope of training for DHATs does not allow them to care for adults with severe oral health needs.

Two studies demonstrate the effects on productivity and profits when dental practices bring an alternative dental provider model onto their team. The first is a 2012 study in which Beazoglou compares the productivity and efficiency of dental practices in Colorado that expanded function dental assistants (EFDAs) against those that do not. The second is a report published by the Pew Center on the States in 2010 detailing the effects on productivity and profit that adding three different alternative dental workforce models had on three different dental practice scenarios: solo pediatric practices, solo general practices, and group practices with associate dentists.

Beazoglou surveyed 154 dentists in Colorado regarding their use of expanded function dental professionals. Nearly two-thirds of dentists surveyed – 63.6% - reported using these providers. An average of 31.4% of tasks and procedures were delegated to dental auxiliary staff, not including procedures considered diagnostic, preventive, or adjunctive in nature. Beazoglou reports that the effects of delegation are significant: when a practice delegated 40% of procedures and tasks to expanded function dental hygienists and EFDAs, they were able to see 27.1% more patients, had 22.1% higher gross billings, and had 106% higher net incomes than those with zero delegation. Similarly, at 40% delegation, net income per dentist hour also went up by 22%, as compared to those practices with no delegated tasks or procedures. Despite these figures, Beazoglou notes that the average level of delegation among practices was relatively low. Only 12.3% of practices surveyed delegated 55% of tasks, whereas 60% of practices had delegation levels of 35% or less. Beazoglou concludes that states should consider allowing dentists to add expanded function allied dental personnel to their practices, and that dental schools should add coursework and clinical experience on the use and management of these alternative workforce models.

In 2010, the Pew Center on the States published a report measuring the effects on productivity and profits when dental practices added one of three types of allied dental providers. Provider models include registered dental hygienists as well as two other models described Edelstein's comprehensive 2009 report on new dental health: the dental therapist and the dental hygiene therapist. Using a specialized Productivity and Profits Calculator developed by a California consultancy group, the study determines that adding one of each of these three provider models can have a significant impact on productivity and profits for solo pediatric and general dental practices, and group dental practices. Profits increased from between 17% to 52% when an allied dental provider was added to solo general dental practices; similarly, those practices' saw productivity increases from between 23% to 51%. The study also looks at the effect that adding

an allied dental provider has on a practice's ability to introduce 20% Medicaid patients into their patient mix. Using a baseline net pre-tax profit of $337,242.00 (no allied providers and no Medicaid clients), the study demonstrates that solo general dentists see a net profit loss of 15% when serving 20% Medicaid clients, even if Medicaid reimbursement rates were raised to 60% of private market fees. The dental hygienist-therapist was the only model that saw net profit increases with a 20% Medicaid client mix: 14% and 28%, with Medicaid reimbursement rate structures of 30% and 60%, respectively.

A third study demonstrates the economic viability of adding a mid-level provider model to dental practices (Kim, 2013). Kim assesses the revenue generated by three provider models currently employed in Alaska and Minnesota: dental health aide therapists (DHATs), dental therapists (DTs), and Advanced Dental Therapists (ADTs), to determine whether they are financially practical as part of a dental team. These models were found to be viable as part of a dental team if their total generated revenues exceeded their combined salaries. Combined salaries were measured separately for each provider, and were estimated using time of employment, full time equivalency, and estimated hourly wage. Kim uses available data from August, 2011 to December, 2012 to determine the total number of procedures carried out and revenues generated across all three provider models. Of the 38,476 procedures conducted by DHATs, DTs or ADTs during this time, the majority fell into three categories: 23.7% were restorative in nature, 32.8% were preventive in nature, and 28.2% were evaluation or assessments. Total revenue generated by these providers was $3,066,253: 46.7% of these revenues were generated for restorative procedures, 20.5% of these revenues were generated for preventive procedures, and 21.3% for evaluations and assessments. Kim reports that the combined salaries for DHATs make up 27% of their generated revenues, and salaries for DTs and ADTs are 29% of the revenues they generate. It is noted that overhead and additional costs, including midlevel provider benefits, other staffing salaries and benefits, and dentist supervision time, were unavailable at the time of this study. Kim uses key informant interviews to estimate that these costs could be as high as 60% of the revenues generated by midlevel providers. Even when adding these figures to provider salaries, revenues still exceed total cost of care by 13% for DHATs and 11% for DTs and ADTs, suggesting economic viability. Interestingly, Kim does not differentiate between Minnesota's dental therapists and the advanced dental therapists when calculating combined salary. Given the different educational requirements for these providers, the ADT will command a higher salary than the DT. This should be taken into consideration in future evaluations.

In light of these studies demonstrating that alternative dental workforce models can help dental practices increase their productivity and profits, a 2009 study commissioned by the American Academy of Dentists (ADA) and prepared by ECG Management Consultants (ECGMC) determines that three midlevel provider models are not financially sustainable as independent practitioners. The report assesses the economic viability of three existing mid-level models – dental therapists (DTs), dental health aide therapists (DHATs), and advanced dental hygienist

providers (ADPHs) – in Maine, Kansas, Washington, New Hampshire, and Connecticut. Financial sustainability is evaluated by weighing education costs, salary, estimated productivity and operating expenses against potential revenue for each model using three different payor mixes. Payor Mix A uses 75% public fee schedule and 25% sliding fee schedule; Payor Mix B uses 50% public, 25% sliding, and 25% private fee schedule; Payor Mix C uses 50% public and 50% private fee schedule. Sliding scale rates were set at 30% of private rates for evaluation purposes, and public rates were set at states' current rates, varying between 0 and 50% of private rates. Not surprisingly, Payor Mix C was found to be linked to the greatest provider revenues. Still, none of the provider models were found to be independently financially viable: only with the DHAT model did revenue exceed cost in four of the five states assessed. Net profits ranged from 4% of total costs in Kansas to 17% of total costs in Connecticut.

It warrants noting again that this study evaluates the financial sustainability of DHATs, DTs, and ADPHs operating independently, as compared to the four other studies cited here that assess various mid-level models as an addition to existing dental practices. The ECGMC report therefore cannot be used to refute findings of these models' effectiveness. Furthermore, it is not apparent that any of the midlevel models, either those currently employed or those being proposed, are intended to establish independent practices.

Quality Improvement Initiatives and Pay for Performance

To date, there are no large-scale pay-for-performance (P4P) programs in dentistry. Moreover, there exists a paucity of quality assessment and improvement measures in dentistry. There is general agreement on what features of the industry have made it difficult to establish quality improvement measure thus far, and why P4P programs will be difficult to implement in the near future.

A 2009 essay in the Journal of the American Dental Association details the challenges facing quality assessment in dentistry (Bader). Another describes the status of quality measurement and improvement in oral health (Glassman, 2011). In 2010, Voinea-Griffin published two reports assessing the barriers to implementation of P4P programs in dentistry.

Bader explains that quality assessment (QA) measures in dentistry have not seen significant change in thirty years. There are four categories of QA measures in dentistry: technical excellence of restorations, patient satisfaction, service use, and other structure and process measures. These fit into the Donabedian QA model categories of structure, process and outcome: the first two measures relate to outcomes, the second to process, and the third to structure.

Technical excellence of restorations measures evaluates a dentist's expertise with restorations, such as fitting and finishing restorative work. This is not associated with long-term outcomes, such as development of caries. Furthermore, data collection for this measure relies on subjective

criteria, which can complicate standardization. Patient satisfaction is typically assessed through questionnaires at the end of a dental visit, which means uniformity cannot be guaranteed. Bader points out that questionnaires present other problems: their language and structure can make it difficult to determine the cause of patient satisfaction. Service usage information, a process measure, is gleaned through evaluation of procedure codes. Since procedure codes do not identify the condition that the procedure was chosen to treat, they cannot be used to evaluate the appropriateness of the treatment. Other structure and process measures are used to evaluate the circumstances in which dental care is provided, such as radiographic technique. These methods vary across different assessment systems, are not evidence-based, and cannot be used to evaluate the effectiveness or appropriateness of a given treatment option.

In recent years, there has been increased emphasis on patient outcomes when talking about quality. QA that are focused on patient outcomes, Bader explains, requires evaluation of treatment outcomes, as well as an evaluation of the choice in treatment option.

Bader notes the major challenges that prevent these four QA measures from translating to meaningful quality assurance measures. First, although dentistry is transitioning from being experientially based to experience based, the apprentice-expert tradition still bears heavily on the profession. Bader tells us that dental education mimics this traditional relationship as well, as dental students are taught to trust an "expert" opinion rather than research findings. A second challenge in the way of meaningful QA are evaluation methods: clinical examinations and licensure are based on mastery of technical excellence learned in dental school and measure a dentists' mechanical expertise rather than their ability to choose appropriate treatment modalities. Bader reports that there is simply an absence of evidence about effective treatments, which makes it difficult, if not impossible, to gage the effectiveness of alternative treatment options, as well as to develop evidence-base practice guidelines for specific conditions. The last major challenge Bader describes is the lack of diagnostic codes in dentistry, since it is difficult to assess whether a particular treatment is effective or appropriate without first knowing the condition for which the treatment was prescribed. If QA measures are to be meaningful, Bader concludes, long-term action needs to be taken. In addition to the widespread implementation of diagnostic codes, Bader recommends that dental professionals must be involved in outcome research, and that payers or plan administrators de-emphasize or eliminate technical excellence QA measures.

In a report prepared for the W.K. Kellogg Foundation, Glassman reviews current quality improvement (QI) activities in oral health in order to assess what measures are lacking and what future trends will bring meaningful improvements. Quality improvement and quality assessment differ in that QI is a cyclical set of activities meant to bring improvement, while QA measures aspects of care known to represent a certain level of quality. Thus, without QA measures, is it difficult to assess QI activities. Glassman offers a pyramid, below, to describe the hierarchy of QI activities, and echoes Bader when he explains that even those activities that could be used to improve oral health quality tend to be focused on the provider, not the patient. Individual Health Records, Glassman notes, assess whether "things are done right," rather than "the right thing is done." Community Delivery Systems tend to focus on the performance of the provider, not the overall health of the community served. Finally, very few Population Health Outcomes are agreed upon in oral health.

Figure 5: Levels of Quality Improvement Activities

Glassman describes a number of oral health QI activities across the oral health industry, such as the Child Health Outcomes Project through the National Quality Forum (NQF). Of the 44 endorsed outcome measures, four relate to oral health outcomes. Health Effectiveness Data and Information Set (HEDIS) is used by more than 90% of health plans in the United States. Glassman reports that HEDIS includes one oral health measure, although only Medicaid plans use this measure to track performance.

Glassman concludes that despite many QI activities underway, what is lacking is an organized QI agenda to improve quality in dentistry on a large scale. There are multiple reasons for this: historically, dentists have been evaluated on their technical abilities rather than the health outcomes of their patients. Glassman notes that 95% of dental practices are privately owned and do not participate in QA programs. Spreading and implementing the adoption of quality standards in dentistry is challenging, since the majority of dentists are solo practitioners. Dentistry is also simply undervalued and is not regarded as a component of primary care, Glassman says.

Glassman identifies measures that will help in the development of QI activities. Electronic dental records (EDR) will make it easier to collect and analyze data. The introduction of diagnostic codes will help assess the appropriateness of treatment procedures. Integration of oral health into general health activities, as well as new workforce models, will allow more people to receive oral health

screenings, education, and early prevention. Another important measure is the development of QI activities by the dental benefits industry – although Glassman explains that the historically adversarial relationship between dentists and dental insurance companies presents a major challenge here. Finally, Pay for Performance (P4P) programs will restructure the reimbursement system so that dentists are paid for value, not volume.

In 2010, Voinea-Griffin published two papers discussing the implementation of Pay for Performance (P4P) programs in dentistry. Challenges facing the widespread implementation of P4P programs are presented, and two small-scale dental P4P programs are detailed. Voinea-Griffin categorizes challenges through the Donabedian model of structure, process and outcome. Structural challenges include the fact that the majority of dentists operate in private practices; P4P initiatives coming from the public sector will have little impact on this group. Furthermore, the combination of the number of dental practices, the number of dental insurance carriers, and the large percentage of adults who pay for dental care out-of-pocket, diminishes the bargaining power of payers to push for P4P reimbursement models. Voinea-Griffin notes that the predominance of solo dental practices makes it difficult to establish quality improvement measures. The author cites a position statement on P4P published in 2006 by the ADA, which reflects dentists' desire to maintain decision-making control without payer's interference. The ADA represents 69% of US dentists.

Challenges with process include variations in care and evidence-based practices. Voinea-Griffin reports considerable variation in treatment modalities across the profession. For example, although dentists have promoted use of dental sealants since 1976, only 50% of children receive this service. The author notes that despite a good deal of published research, most topics lack hard evidence that come from controlled trials. Of the 159 evidence-based practice reports on the Agency for Healthcare Research and Quality (AHRQ) webpage, only one is related to dentistry and the evidence is deemed inadequate to recommend its implementation.

The majority of dentists do not document clinical information related to chronic dental disease, making it difficult to establish clinical markers in dentistry. Furthermore, standardized diagnostic codes are not used in the profession, as compared to medicine – making the development of outcome measures difficult. Voinea-Griffin also suggests that electronic dental records, which are costly to implement, should not be introduced until clinical documentation for outcome assessment has become standard practice.

Voinea-Griffin cites two P4P programs initiated by dental benefits payers. The first was a payment incentive offered by HealthPartners Dental Group, based in Minneapolis, MN, for dentists who completed caries risk assessments on 90% or more of their exams. Prior to implementation of the program in 1998, risk assessments were conducted in 25-30% of exams. Results from one year following implementation showed that risk assessments were being

conducted in 98% of exams. Although the initiative was defunded in 2004, recent reports demonstrate that caries risk assessments are still conducted with the same frequency.

In 2007, Kaiser Permanente Dental Care Program (KPDCP) implemented a National Institutes of Health (NIH)-funded tobacco cessation program. Dental-hygienist teams were trained to provide tobacco cessation counseling to patients who smoked and to encourage these patients to speak to a health educator, via phone, either at their homes or at the dental clinic. 2008 program data showed that 98% of smokers received a referral attempt from these providers. Unfortunately, while the incentive appears to have been successful, the rate of referral acceptance remained consistent with rates prior to the program (7.3%).

Medically Necessary Dental Care – Dental Care and Diabetes

There is mounting evidence that oral health is linked to systemic disease, including diabetes. A report suggests that diabetics are at greater risk for periodontal disease than people without diabetes because of the differences in immunoinflammatory response to bacteria between these two groups (Mealey, 2006). Mealey reports that the function of cells involved in immunoinflammatory response is often altered in people with diabetes, including the impairment of neutrophils and the upregulation of macrophages and monocytes. These altered cell functions may prevent the destruction of bacteria that lead to damage of the periodontium. Furthermore, Mealey notes that altered periodontal wound healing is common among diabetics, as fibroblasts do not function properly in high-glucose conditions. While it is clear how symptoms of diabetes can lead to periodontal inflammation and disease, there is a growing body of research suggesting that treatment focused on eliminating periodontal disease may have a positive impact on glycemic control.

A clinical study demonstrates the statistically significant effect of periodontal treatment on both periodontal and metabolic factors in patients with type 2 diabetes (Kiran, 2005). Forty-four patients who met study criteria either received oral hygiene instruction and full-mouth scaling and root planing in the treatment group, or received no such treatment in the control group. Data collected at the end of the three-month study was compared against baseline data to indicate that non-surgical periodontal treatment resulted in improved periodontal factors – including plaque index, gingival index, pocket probe depth, and bleeding on probing – for the treatment group. Furthermore, Kiran reports that the treatment group saw a significant decrease in glycated hemoglobin (HbA1c) over the three-month study period, while HbA1c levels in the control group increased slightly over this period. Kiran notes that reduction in the treatment group's HbA1c levels did not last once the study concluded, and determines therefore that non-surgical periodontal treatment may contribute to glycemic control in patients with type 2 diabetes.

A second study assesses the relationship of periodontal disease and metabolic control among patients with poorly controlled type 1 diabetes (Miller, 1992). Nine patients with moderate- to

severe periodontitis were selected to participate in this study. Patients received oral hygiene instruction, scaling and root planing, and were placed on doxycycline for 14 days. Patients received prophylaxis two weeks after scaling and planing, and were evaluated four and eight weeks after treatment. Miller reports that bleeding on probing (BOP) decreased in seven of the nine study subjects, while BOP increased in two patients. Among those seven patients with reductions in BOP, mean BOP prior to treatment was 29.3% ± 20.9, and BOP post-treatment was 11.0% ± 4.7. Miller notes that five of these patients saw consistent improvements in BOP when assessed four and eight weeks after periodontal treatment, while two had inconsistent responses to this therapy. As for metabolic parameters, Miller reports that among the five patients with consistent reductions in BOP, HbA1c levels decreased from 8.7% pre-treatment to 7.8% post-treatment; HbA1c levels either did not change or increased in those patients with no consistent improvement in BOP. Miller concludes that despite the small sample size, the study demonstrates the association between improved periodontal parameters and improved metabolic control among type 1 diabetics.

A study conducted in Washington demonstrates that diabetic and non-diabetic patients access and receive oral health services in different ways (Chaudhari, 2012). Using dental claims data over a five-year period, Chaudhari compares dental care utilization between these two groups. The sample size for this study was 49,023 individuals, of which 4,083 had diabetes. Chaudhari reports that adults with diabetes were less likely to receive dental services than adults who did not have diabetes (84% compared to 88%). Furthermore, diabetic adults that did receive dental services were less likely to receive preventive services including prophylaxes than non-diabetics, but were more likely to receive periodontal care for the treatment of active oral disease or maintenance of stabilized oral disease. These study results suggest that diabetic adults receive more episodic dental care than individuals without diabetes. Given the evidence that diabetes is associated with oral health complications, Chaudhari's findings indicate a significant prevention gap in oral health services for the diabetic population. Chaudhari notes that while some of the statistically significant differences between the diabetic and non-diabetic study groups were small, even small statistically significant differences are likely to have a considerable effect on population oral health, especially considering the increasing prevalence of diabetes in the United States.

Other research suggests that receipt of dental care is associated with a reduction in diabetes-specific medical visits (Mosen, 2012). In a retrospective study, Mosen compared 493 diabetic patients who had accessed regular dental care within the 36-month observation period against 493 diabetic patients who had not accessed dental care. Regular dental care was defined as two or more prophylactic or periodontal treatments, or both, each year in 2005, 2006 and 2007. Medical utilization measures included one or more versus no diabetes-specific emergency department (ED) visits, and one or more versus no diabetes-specific hospital admissions. Mosen reports that regular receipt of dental care was associated with improved glycemic control in a

bivariate analysis, but not in a multivariate analysis. However, regular receipt of dental care was determined to be independently associated with both diabetes-specific ED visits and hospital admissions. Mosen concludes that regular receipt of dental care reduces diabetes-specific health care utilization.

Mosen's conclusion is echoed by statistics from Blue Cross Blue Shield of Massachusetts (BCBSMA) detailing the impact of dental care on medical costs. In a PowerPoint presentation given at the National Oral Health Conference in 2010, BCBSMA reports 2009 claims data demonstrating that medical costs for diabetic members receiving prophylactic or periodontal services were $67 lower per member per month than diabetic members who did not seek these treatments. This represents 6.6% of members' overall medical costs. Furthermore, 2007 claims data offered in this presentation indicates that claims costs per member per month are 20% lower for diabetic members who received periodontal services than diabetic members who received no dental services. Given the demonstrated effect that receipt of oral health services has on overall medical costs for diabetic members, BCBSMA suggests that enhanced dental benefits for at-risk members, in addition to education and outreach, are necessary for improved overall health of this population.

Section V: Interviews with National and Local Stakeholders

Administrative Simplification

While national experts listed several administrative simplification recommendations, Vermont-based stakeholders had an overall positive outlook. Stakeholders reported that administration of the Vermont Medicaid program has undergone improvements over time and important issues such as timely reimbursement of claims and prompt pre-authorization of procedures was improved. Stakeholders indicated that improvements still could be made. Specifically, the provider database available through the Department of Vermont Health Access, the program which administers Medicaid, could be improved. The current provider database does not report the provider specialty, making referrals to specialist dentists difficult. While the database reports whether dentists are taking new patients, the dynamics of a dental practice are such that whether a practice is taking new patients may vary and that the database may become outdated rapidly.

Medicaid Reimbursement

Given the body of knowledge which indicates increased Medicaid reimbursement results in increase dentist participation and consumer utilization, it is not surprising that experts and stakeholder supported this concept to improve access to oral health services. While increased Medicaid reimbursement rates to 75% of commercial were recommended, several cautions and

caveats were also deemed important. Of major concern was how Medicaid reimbursement increases would be structured. While the overall rate increase to 75% of commercial rates was supported, it was not recommended to increase every procedure to this level; rather rate increases should be weighed more heavily towards improving access and prevention. These include weighing:

- Preventive procedures
- Procedures associated with specialists for which access is difficult (such as oral surgery)
- Adding procedure codes which provide higher reimbursement for targeted populations such as children below the age of 1 year, pregnant women and individuals with chronic conditions.

Furthermore, stakeholders and experts highlighted issues such as direct reimbursement of Public Health Dental Hygienists, assuring equity in terms of reimbursement of both dentists and physician codes for the same services, and promoting consistency among private and public insurers in terms of which oral health procedures are reimbursed when performed in a physician office setting. Caution was provided in terms of the expected increase in provider participation and resulting Medicaid eligible utilization. While studies indicate improved access with increased Medicaid reimbursement, the extent of the increase in any particular state is unknown. Dentist behavior and response to increased rates have shown to vary greatly state by state and the extent of the impact in Vermont will not be known until actually implemented.

Medical-Dental Collaboration

Given the rates at which children see their pediatrician and the likeliness that individuals with chronic disease will visit a physician, stakeholders and experts alike see coordination among the medical and dental community as increasingly important to facilitate entry into systems of care which improve overall health through a whole body approach. Collaborative relationships between the medical and dental professional community have a longstanding history, with guidelines or criteria for medical-dental collaborations established by professional organizations. While these recommended guidelines exist experts and stakeholders were quick to underscore that they have not been incorporated into payment systems which has hindered institutionalizing improvements in systems of care. As a result, the overall tenor has been to develop pilot programs which examine how medical-dental collaboration is operationalized as well as to study the payment mechanisms which best promote existing guidelines. Vermont's Blueprint for Health was recognized as an existing medical home model within which piloting medical-dental collaboration could occur. While national experts discussed the importance of a good working, collaborative relationship between the Medicaid Medical Director and the Medicaid Dental Director, local stakeholders were quick to point out that Vermont does not have a Medicaid Dental Director and there is a significant lack of leadership top oversee such initiatives.

Other issues highlighted included assuring that Medicaid reimbursement for medical and dental providers were equitable as to not create disparities for professionals engaged in similar scope of work and providing continuing education to bring medical and dental professionals together as well as improve their knowledge to engage in this work.

Alternative Dental Workforce

Experts and stakeholders did not challenge alternative dental workforce models from a safety or quality perspective. While the majority of those interviewed supported the development and licensing of new workforce models, those that disagreed believed that the use of alternative models was not the right approach for Vermont and other public health-focused approaches to reduce oral health demand should be employed instead. All agreed that existing workforce should be used more widely and to the full scope of practice as allowed by licensing bodies. Specifically stakeholders referred to the underutilization of Expanded Function Dental Auxiliaries (EFDAs) and Public Health Dental Hygienists (PHDHs).

In planning and implementing alternative workforce models, several considerations were given by experts and stakeholders including:

- Be cautious when developing educational capacity to develop new workforce professions. The initial uptake of these new professions will be relatively slow, we do not want to produce too many professionals for whom employment will be difficult but we do not want to enroll, educate and train so few that the cost per person to the educational institution, or as reflected in tuition, is too high. As a result Vermont should consider developing the educational and training capacity for New England. This would mean working regionally to assure educational requirements are in line with state licensing and reciprocal licensing agreements across states could occur.

- Vermont may need to incentivize the uptake of new professions through loan repayment to new professionals and loans or grants to practices who wish to add a professional but need to expand their physical plant capacity.

- While studies show the economic viability, practices will be concerned regarding new dental workforce professions under Vermont's payment systems.

- Practices will be concerned regarding how to integrate a new type of profession into their existing workflow to maximize efficiency.

- Continuing education may be a catalyst and assist in the change management and informational gaps existing among the dental community today.

Quality and Payment Systems

Draft quality measures have been developed for discussion, however to date there still lacks consensus as to how to measure and promote quality in oral health care. Quality improvement, or moving practices towards treatment and management approaches which promote positive oral health outcomes, is not an implicit process within dental practices at this time. Consequently there also lacks an understanding of how to organize payment systems to promote and institutionalize a focus on outcomes and quality. If Vermont wants to move forward on this issue, it would be well positioned to pilot a quality project. While a vision of a payment system which promotes and rewards positive oral health outcomes and population-based care is the end goal, we will need to take incremental steps to reach that goal given the complexity of the topic and lack of current evidence-based or best practices.

Adult Essential Benefits

A review of state Health Exchanges produced no examples of where dental coverage for Medicaid eligible adults was provided and as a result no interviews were conducted with representatives from Health Exchanges. National experts confirmed the lack of examples however indicated to watch a key state, California, which may be considering inclusion. National experts also recognized that there was no consensus on what an adult oral health benefit should look like in a Health Exchange between national organizations. Even within national organizations consensus often could not be found. Furthermore, experts provided no examples, nor insights, as to how to move oral health payment systems towards population-based approaches.

Section VI: Findings

Administrative Simplification

Finding #1: The perceived administration of Vermont's Medicaid Program among dental providers is good, with the potential for small improvements to be made.

While the overall opinion is that Vermont's Medicaid Program is administered well, dental providers find it difficult to make appropriate specialist referrals because the Medicaid provider database does not identify specialties. In addition, the database indicates whether a dental practice is accepting new patients however the data is not always current. Dentist practices manage their patient panels and their willingness to take new patients or new Medicaid patients can vary within a short period of time, making real time accuracy challenging. Finally, dental providers find it difficult to understand the process by which they are enrolled, the timeframe and the manner in which they are notified that they are enrolled.

Potential Approaches:

Provider specialties are available from the Vermont Department of Health Dentist Licensing Survey. Specialties can be matched to provider name or license number and added to the database. Given the Licensing Survey is completed every two years there may still be gaps given provider recruitment or attrition.

To obtain a more real time, ongoing database of dentists actively accepting new patients or new Medicaid patients would be challenging. Given the effort that would be required for a staff member to contact and monitor practices it would be more feasible to develop and implement a web based self-reporting system where dental practices could update their willingness to take new patients real time. It would be difficult to assuring dental practices keep this information up to date.

To improve the understanding of the Medicaid provider enrollment process a fact sheet which provides dentists information on how to enroll, the notification process and timeframes for enrollment could be developed.

Financial Impact: $25,000

Primarily, the web based self-reporting would require additional resources to purchase or develop.

Medicaid Reimbursement

Finding #2: Increasing Medicaid reimbursement rates to 75% of commercial rates can significantly increase access for Medicaid eligibles.

Finding #3: Targeted reimbursement strategies focusing on priority populations, preventive care procedures and hard to access specialty care will have the greatest impact to increase access and reduce avoidable costs.

Locally and nationally dentists cite low Medicaid reimbursement rates as reasons for lower participation and accepting new Medicaid patients, the evidence-base in the literature similarly supports this premise. While each state which increased reimbursement rates in the existing studies was cited as providing significant increases, the amount of increase to elicit the optimum outcome – improved access – is unclear. The American Dental Association estimates that overhead costs of dental practices exceed 60%-65% and as a result, Medicaid reimbursement rates should be targeted to 70%-75% of commercial rates to make them appealing to dentists. Raising Vermont's Medicaid reimbursement rate to 75% of commercial rates represents a 50% increase from the state's current reimbursement rates.

The literature demonstrates a positive impact of increased reimbursement within the states studies. The extent of impact, as measured by increased dentist participation and Medicaid eligible utilization, varies and may not be used to predict the actual impact increased reimbursement will have in Vermont. The impact on utilization varied widely with increases of 33% to 76%.

Stakeholders and experts supported the concept of increased reimbursement. Strategically increasing reimbursement can elicit gains in increasing access for priority populations, targeting prevention strategies and increasing access to specialty services. Across the board increases would not be considered strategic; rather a review of specialty, procedure and population codes and tags would need to be reviewed to determine the best approach to targeted reimbursement. Additionally, the adult cap would need to be increased. Increases in reimbursement without an increase in the current adult cap would result in lower utilization of dental procedures for the adult population.

Potential Approaches:

If adopted as a strategy, an advisory board consisting of policymakers, state staff and oral health professionals could be convened to review rate increases. Rate increases should be targeted versus "across the board" in particular higher rates could be used to target:

- Preventive services to encourage establishment of a dental home, higher use of prevention services and avoid higher cost restorative services.
- Specialty services to increase utilization of hard to access dentist specialties.
- Priority populations including:
    - Children under the age of 5. Research shows that early entry into a dental home significantly reduces oral health expenditures, with high cost savings in establishing a dental home for children under one year of age.
    - Pregnant women. Because oral health has been linked to pregnancy outcomes.
    - Individuals with chronic diseases. Evidence has indicated that chronic disease such as diabetes and the management thereof is linked to oral health.

Financial Impact: $4,252,800 – $13,821,600 in state dollars above current state expenditures

Assumptions:

- Current State/Federal match is 40/60

- Increased utilization is estimated at 25%, 50% and 75% above current utilization (other state experiences ranged from 33%-76% increase in utilization)
- The current adult cap would be doubled (on average Vermont's Medicaid eligible population utilizes half the number of procedures as privately insured)
- Vermont Medicaid rates are at approximately 50% of commercial rates (equating to an estimated 50% increase in order to bring them up to 75% of commercial)

Projected Medicaid Dental Budget With Increased Reimbursement and Participant Utilization

Scenario	Total	State Share
2014 Medicaid Budget	$21,264,000	$8,505,600
Projected Medicaid Budget at 75% of Commercial Rate	$31,896,000	$12,758,400
Projected Budget: 25% Increase in Utilization at 75% of Commercial Rate	$39,870,000	$15,948,000
Projected Budget: 50% Increase in Utilization at 75% of Commercial Rate	$47,844,000	$19,137,600
Projected Budget: 75% Increase in Utilization at 75% of Commercial Rate	$55,818,000	$22,327,200

Medical-Dental Collaboration

Finding #4: Research indicates that medical-dental collaborations can result in dual, synergistic medical and oral health outcome improvement.

Finding #5: While collaborations between medical and dental professionals provide opportunities to improve overall health and wellness, significant gaps in terms of how to operationalize such an approach in payment systems and workflow exist.

The concept of medical-dental collaborations is not new. The American Academy of Pediatrics and the American Academy of Pediatric Dentistry have released guidance regarding recommended elements of effective medical-dental collaboration in the provision of care to children. Similarly, research on adults with Type 2 diabetes demonstrates the potential to improve oral health as well as metabolic outcomes (lowering of Hemoglobin A1c, an indicator of

blood sugar control). Anecdotally, stakeholders and experts report that practice or implementation often lags significantly behind research and accounts for the lack of examples or insight as to how to operationalize this concept in a meaningful, effective manner.

As a result, while stakeholders were encouraged with Vermont's interest in exploring the role and implementation of medical-dental collaborations they recognized that this would be difficult work. Understanding the integration, implementation and funding of such an approach would entail an incremental and thoughtful long term work plan. Two potential opportunities were identified to begin an incremental approach to building medical-dental collaboration systems; integration into the Blueprint for Health and integration of Public Health Dental Hygienists into regional WIC Clinics.

The Blueprint for Health among other things represents a team based approach to medical care. It was noted that a pilot medical-dental collaboration in a Blueprint community would be part of an incremental strategy to understand both the implementation in a team based environment and to develop relevant payment strategies. Given the experience of individuals from both the state and community participating in the Blueprint, the expertise exists to engage in such a pilot. As a parallel approach Public Health Dental Hygienists could be placed within Local Offices of Health WIC Clinics. Here hygienists can identify at risk children and families, provide oral health screenings and education, administer preventive services and assist in the connection of families with community dentists.

Potential Approaches:

<u>Overarching</u>

Provide continuing education regarding medical-dental collaboration to both medical and oral health professionals jointly. In addition to increasing skills and knowledge regarding the connection between medical and oral health, professionals attending jointly will have an opportunity for networking and beginning to develop collaborative relationships.

<u>Medical-dental Collaboration in the Blueprint for Health</u>

- Provide a grant to a Blueprint Community Health Team to contract with or hire a half time oral health professional such as a Public Health Dental Hygienist. The Community Health Team can engage in a workflow analysis to determine how to best integrate a Public Health Dental Hygienist with a focus on targeting individuals with diabetes. Within the Community Health Team the hygienist can work to identify adults with diabetes and participate with the team to provide assessment, screening, preventive services, facilitate access to a dental home and coordinate the exchange of information between the dental home and Community Health Team.

- Collect data to assist in short and long term evaluation of the medical-dental integration. Qualitative data such as interviews with members of the Community Health Team, patients and community oral health professionals will help better understand how well the team and relationships function. Quantitative data such as patient-level medical and oral health data, medical and dental procedures and claims data will provide important inputs to developing reimbursement strategies and understanding outcomes.

- A workgroup of the Green Mountain Care Board consisting of evaluators, medical and dental professionals and public and private insurers can be convened to review data, track progress, realign the pilot as needed and develop further recommendations to operationalization and payment strategies.

Medical-dental Collaboration in WIC Clinics

- Employ a half time oral health professional such as a Public Health Dental Hygienist in each Office of Local Health WIC Clinics.

- Provide training to WIC Clinic staff, such as the Smiles for Life curriculum developed by the American Dental Association.

- Conduct a workflow analysis to determine how Public Health Dental Hygienists will be integrated into WIC Office workflow.

- The Public Health Dental Hygienist can work with staff of the WIC Clinic to provide children and their family assessment, screening, preventive services, facilitate access to a dental home and coordinate the exchange of information between the dental home, WIC and community physicians.

- Collect data to assist in short and long term evaluation of the medical-dental integration. Qualitative data such as interviews with members of the WIC Clinic, families and community oral health and medical professionals will help better understand how well the relationships function. Quantitative data such as family or individual-level oral health data, dental procedures and claims data will provide important inputs to developing reimbursement strategies and understanding outcomes.

- A workgroup of the Green Mountain Care Board consisting of evaluators, medical and dental professionals and public and private insurers can be convened to review data, track progress, realign the project as needed and develop further recommendations to operationalization and payment strategies.

Financial Impact: $700,000

Medical-dental Collaboration Blueprint for Health

.5 FTE Public Health Dental Hygienist = $50,000 inclusive of salary, fringe benefits and overhead.

$25,000 contracted services for evaluation design and qualitative data collection.

Medical-dental Collaboration in WIC Clinics

.5 FTE Public Health Dental Hygienists in each of 12 Local Health Office WIC Clinics = $600,000 inclusive of salary, fringe benefits and overhead.

$25,000 contracted services for evaluation design and qualitative data collection.

Alternative Dental Workforce

Finding #6: Attrition resulting from retirement of dentists will create gaps in accessing oral health services.

Finding #7: Existing workforce models such as Public Health Dental Hygienists and Expanded Function Dental Assistant are underutilized.

Finding #8: Vermont will have to employ alternative dental workforce models to bridge access gaps created by an aging dentist workforce even with the implementation of other strategies.

Finding #9: Alternative models have been studied which may provide solutions to Vermont's impending workforce issues.

According to the Vermont Department of Health 2011 Dentist Licensing Survey 68% of primary care dentists are accepting 5 or more new non-Medicaid patients per month, 29% are accepting 5 or more new Medicaid patients per month. The survey also reports that 49% of dentists are over the age of 55. As presented in the maps earlier in this document utilization rates of privately insured reach nearly 80%, while Medicaid eligible utilization is dramatically lower. Given the lower than desired utilization, low acceptance of new patients in dental practices and the aging dentist population, current access issues will continue to be exacerbated as dentists move towards retirement. This assumption regarding the continued decline in access because of dentist attrition was not agreed upon by all stakeholders and experts. It was reported by some that improvements in public health approaches would remedy dentist shortfalls. While there was consensus regarding the use of public health approaches (including community water fluoridation, education etc.) the potential of losing half of primary care dentists in the state will still demand alternative workforce approaches in addition to increased public health approaches.

In contemplating alternative dental workforce models, several considerations were used to identify alternative dental workforce models including: safety and quality, financial viability, local need and whether the state has, or anticipates to have, education and training capacity for the alternative models. According to these criteria, literature, stakeholder and expert opinion

there are three models which hold potential for implementation in Vermont, as described in the literature review. These include the Alaska model, American Dental Association Model and the Minnesota model. The scope of practice of these models vary from a focus on case management and education to clinical care. Given that the variability of the practice of dentistry, in terms of how workforce is organized within a dental practice, each of these three models present as viable workforce models within Vermont.

While new workforce models offer hope to bridge the access gap, particular attention should also be given to the maximization of existing dental workforce, particularly Public Health Dental Hygienists and Expanded Function Dental Assistants. Both of these existing dental professions can help expand access to oral health services yet the penetration within the state is still low. Efforts to proliferate the uptake of existing as well as new dental workforce models is key to successfully maintaining and expanding current levels of dental service utilization.

Potential Approaches:

The State's role is relatively limited in this area. The single pivotal decision by the State is to allow licensing and practice of new workforce models when advocacy groups and stakeholders request them. If desired, the state can incentivize the development and use of new and existing workforce models through grants or loans. The primary burden and risk to developing new workforce models is placed on education and training institutions, the students which attend them and the dental practices which employ new professions.

Financial Impact: $300,000

To accelerate and promote the development and adoption of new dental workforce models the State of Vermont can make the following investments:

Additional loan repayment and scholarships: $50,000

Grants to build capacity and infrastructure within dental practices: $200,000

- These funds can assist with workflow analysis, financial analysis and expansion of the physical capacity of dental practices.

Financial analysis of alternative workforce models under Vermont's reimbursement structure: $50,000

Quality and Payment

Finding #10: Payment system models promoting quality outcomes in oral health do not currently exist.

Finding #11: There is not yet national consensus on quality indicators for oral health.

The December 2011 report of the W.K. Kellogg Foundation Oral Health Quality Improvement in an Era of Accountability reported that while expenditures for dental care are greatly shadowed by medical care expenditures, trends show dental care expenditures, as a percent of expenditures, rising more quickly. The document also reported that there was not a relationship between the number of procedures provided and outcomes. In other words whether a patient received one procedure versus five procedures the outcomes weren't different. This is not surprising given quality in oral health has primarily focused on the quality of procedures versus outcomes. Given this information, the Kellogg report is a call to action in the development of quality indicators for oral health and the development of payment systems which promote and reward good outcomes. While the medical field has been working in the arena of payment and quality for decades, it is still often a struggle to assure that the payment systems and quality expectations are aligned and function synergistically. It is not surprising then that there is a paucity of information regarding oral health and quality in the literature and stakeholders and experts alike were not able to hold up any examples of payment systems working to promote oral health quality. There still lacks consensus on the national level regarding oral health outcome indicators, however recently draft indicators have been distributed for discussion. It is Vermont's challenge then to be at the forefront of this issue to explore the relationship of payment and quality in the absence of good literature and promising models. Having said this, there then is an opportunity to explore grant funding for such purposes for pilots in Vermont of this nature.

Potential Approaches:

Develop a small scale quality improvement pilot project in dentists practices to understand quality improvement in dental care systems, test oral health quality measures and their evaluability, understand the relationship between oral health procedures and quality measures and explore the link between payment systems and oral health quality. This may entail:

- Identify a quality indicator from the proposed draft list of quality indicators (e.g. sealants)
- Engage in conventional quality improvement approach:
    - Collect baseline information regarding indicators
    - Engage in PDSA cycle to improve implementation of procedures anticipated to impact indicator
    - Review change from baseline
    - Convene payors, providers and state staff in a workgroup to discuss payment reform to promote QI

Financial Impact: $150,000

This work is based upon the development of a Dental Learning Collaborative and the costs are reflective of medical collaboratives of the same scope and nature.

Adult Essential Benefits

Finding #12: Examples of including adult dental benefits in Health Exchanges do not exist.

Finding #13: There lacks consensus regarding the scope of adult benefits to include in Health Exchanges.

Finding #14: There lacks models for dental benefits which incorporate a population-based approach.

Children's dental benefits are included in Health Exchanges the scope of which has been defined by the ACA, adult dental benefits are not included. No other states to date have included adult benefits in their Health Exchange, although it was anticipated that California may be a state to do so. In defining an adult benefit to be included in the exchange national experts reported that there was not consensus on what to include. One key problem with dental benefits and how they are currently structured is that many have limitations on the scope and amount of services, for example Vermont's adult Medicaid Program limits adults to two cleanings per year and a cap of $495. These types of approaches to dental benefit packages are pervasive. Examples of how to construct a benefit package that takes a population-based approach and leaves flexibility for individualized treatment plans similarly aren't available, e.g. a population may need an average of two cleanings per year per person, however individualized treatment plans may identify people who need one cleaning and others that need three. The current design of benefit plans is too rigid because we understand that a one size fits all approach to health care does not work, it doesn't in dental either.

There are no examples of best practices from which to define the ideal adult Medicaid benefits, as a result there is no justification to revise Vermont's current package of dental benefits at this time. To understand the impact of including adult dental benefits in Vermont's Health Exchange several assumptions were made to calculate the financial implications including:

- Vermont's current adult dental benefits remain the same.
- Utilization, given the removal of the current $495 cap would result in utilization levels equal to commercial utilization.
- Calculations are made with both the current rate of reimbursement as well as at a rate of 75% of commercial reimbursement.

- Calculations are made assuming uptake of benefits by: current Medicaid eligible adults, Medicaid eligible adults and adults covered under commercial insurance (Delta Dental) and, all adults age 18-64.

Scenario #1	
Average procedures per member = Delta Dental Procedure per Member = 3.67	3.67
Average cost per procedure = current average cost per Medicaid procedure = $51.25	$ 51.25
Uptake = Total adult Medicaid eligibles = 84,406	84406
Total Scenario #1	$ 15,875,713.53

Scenario #2	
Average procedures per member = Delta Dental Procedure per Member = 3.67	3.67
Average cost per procedure = enhanced average cost per Medicaid procedure = $76.87	$ 76.87
Uptake = Total adult Medicaid eligibles = 84,406	84406
Total Scenario #2	$ 23,812,021.44

Scenario #3	
Average procedures per member = Delta Dental Procedure per Member = 3.67	3.67
Average cost per procedure = current average cost per Medicaid procedure = $51.25	$ 51.25
Uptake = Total adult Medicaid eligibles plus Delta Dental enrollees = 141,731	141731
Total Scenario #3	$ 26,657,829.46

Scenario #4	
Average procedures per member = Delta Dental Procedure per Member = 3.67	3.67
Average cost per procedure = enhanced average cost per Medicaid procedure = $76.87	$ 76.87
Uptake = Total adult Medicaid eligibles plus Delta Dental enrollees = 141,731	141731
Total Scenario #4	$ 39,984,143.43

Scenario #5	
Average procedures per member = Delta Dental Procedure per Member = 3.67	3.67
Average cost per procedure = current average cost per Medicaid procedure = $51.25	$ 51.25
Uptake =Total 18-64 population	405430
Total Scenario #5	$ 76,256,315.13

Scenario #6	
Average procedures per member = Delta Dental Procedure per Member = 3.67	3.67
Average cost per procedure = enhanced average cost per Medicaid procedure = $76.87	$ 76.87
Uptake =Total 18-64 population	405430
Total Scenario #6	$ 114,377,033.05

Public Health Initiatives

Vermont Oral Health Plan (http://healthvermont.gov/family/dental/documents/oral_health_plan.pdf)

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