



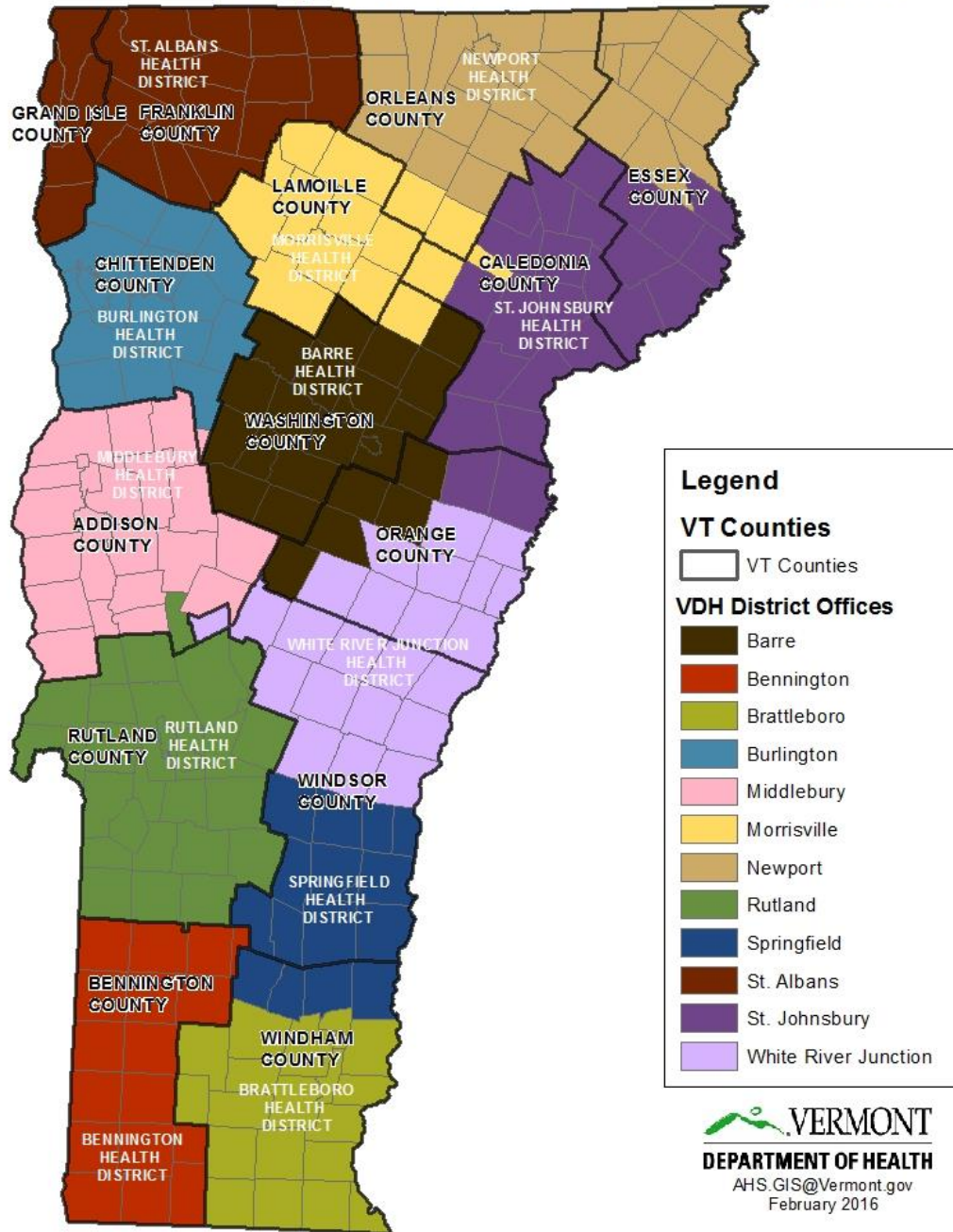
# Oral Health in Vermont and Vermont's Offices of Local Health:

Preventive and Access to Care, Risk Factors, and Outcomes

# Data by State and Offices of Local Health

- Unless stated otherwise, all data are calculated for residents living within the areas served by Vermont Department of Health's Offices of Local Health (or VDH District Offices).

Vermont Department of Health District Offices



# Oral Health Data – Vermont's Offices of Local Health

**Preventive and Access to Care:** How many Vermonters are accessing oral health care? Receiving preventive services? How many dentists are in the area? What percentage of the population on public water systems have fluoridated water?

**Risk Factors:** How many Vermont high school students have an increased risk of oral health problems due to risky behaviors?

**Oral Health Outcomes:** How are Vermonters doing in terms of oral health outcomes?

# Preventive and Access to Care

## Indicators

- Dental insurance
- Dental visits
- Preventive dental services
- Number of dental providers
- Community water fluoridation
- Water consumption

## Data Sources

- Behavioral Risk Factor Surveillance Survey (BRFSS)
- Medicaid claims
- Dentist Census
- Water Fluoridation Reporting System
- Youth Risk Behavior Survey (YRBS)

# Behavioral Risk Factor Surveillance Survey (BRFSS)

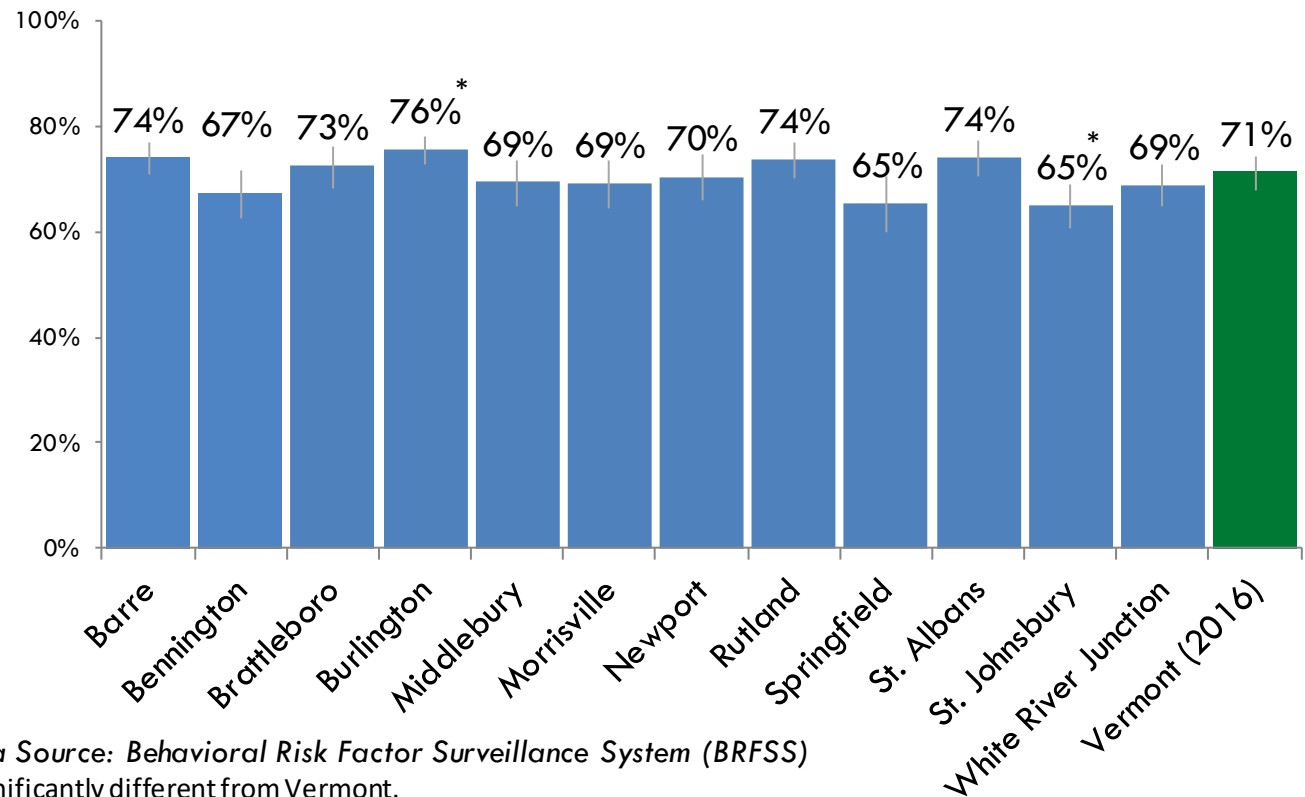
- Telephone survey of adults
- Typically between 6,000 and 7,000 Vermont adults (18 or older) are interviewed as part of the Vermont BRFSS each year
- Self-reported data
- Conducted by the Vermont Department of Health in collaboration with the Centers for Disease Control and Prevention (CDC)
- Additional information can be found on the VDH and CDC websites:
  - <http://healthvermont.gov/research/brfss.aspx>
  - <http://www.cdc.gov/brfss/>

# Access to Care – Dental Visits Among Adults (BRFSS)

In 2016, 71% of Vermont adults saw their dentist for any reason during the previous year.

*The Healthy Vermonters 2020 goal is 85%.*

### Percent of Adults Who Visited the Dentist in the Last Year (2014, 2016)



Data Source: Behavioral Risk Factor Surveillance System (BRFSS)

\*Significantly different from Vermont.

Age-adjusted based on the proportional age breakdowns of the U.S. population in 2000.

# Dental Insurance

- 44% of Vermont adults reported they did not have dental insurance in 2012 (BRFSS).
- Some variation exists by Office of Local Health, but there are not large differences.

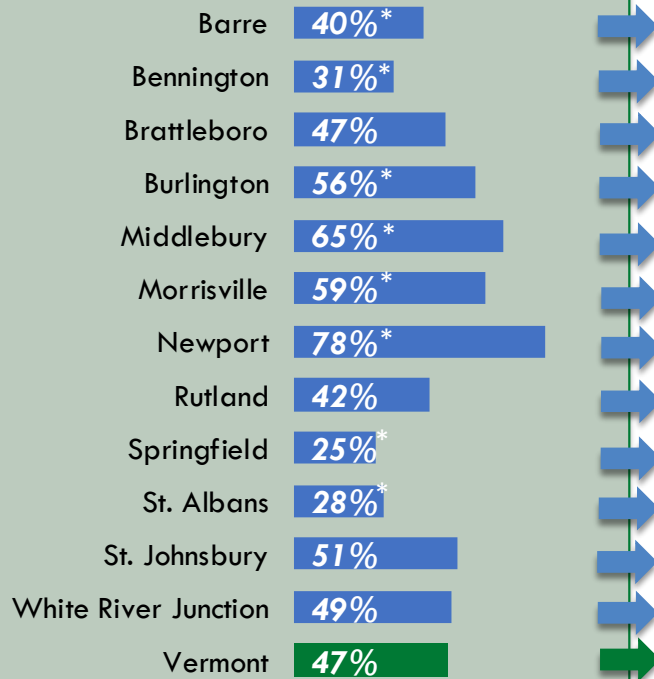
# Medicaid Claims Data

- These data are not representative of all Vermonters.
  - These data only include those who sought care, and does not include those who needed care but did not seek care.
  - These data do not include those who have commercial insurance or do not have dental insurance.

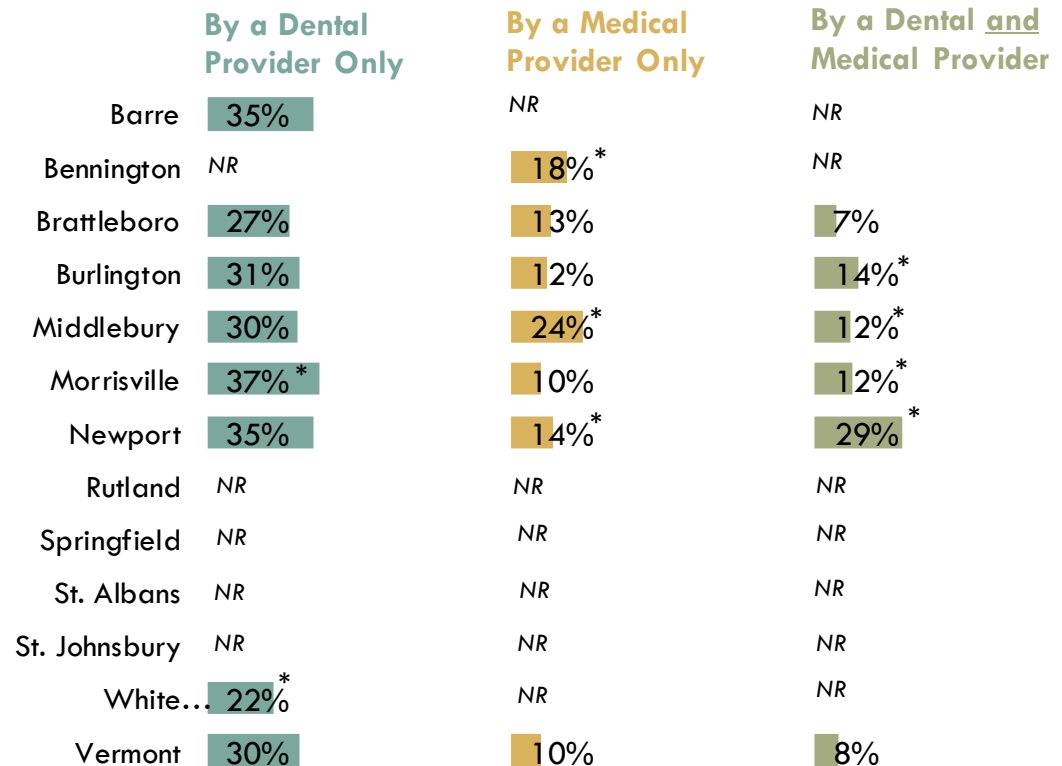


# Access to Care: Dental Services Among Medicaid-Enrolled Children by Their 2<sup>nd</sup> Birthday

**47%** of Vermont Medicaid-enrolled children born in 2015 received **any dental services by their second birthday.**



**By type of provider, percent of Medicaid-enrolled children born in 2015 who received any dental services by their second birthday:**



Data Source: Medicaid Claims Data

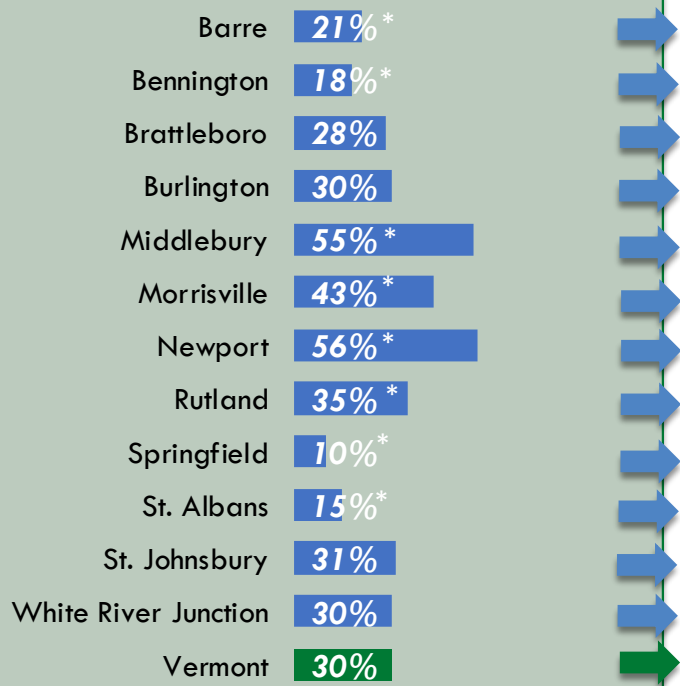
NR = Not reported due to a small number seen by one or more types of providers.

\* Significantly different from the rest of Vermont.

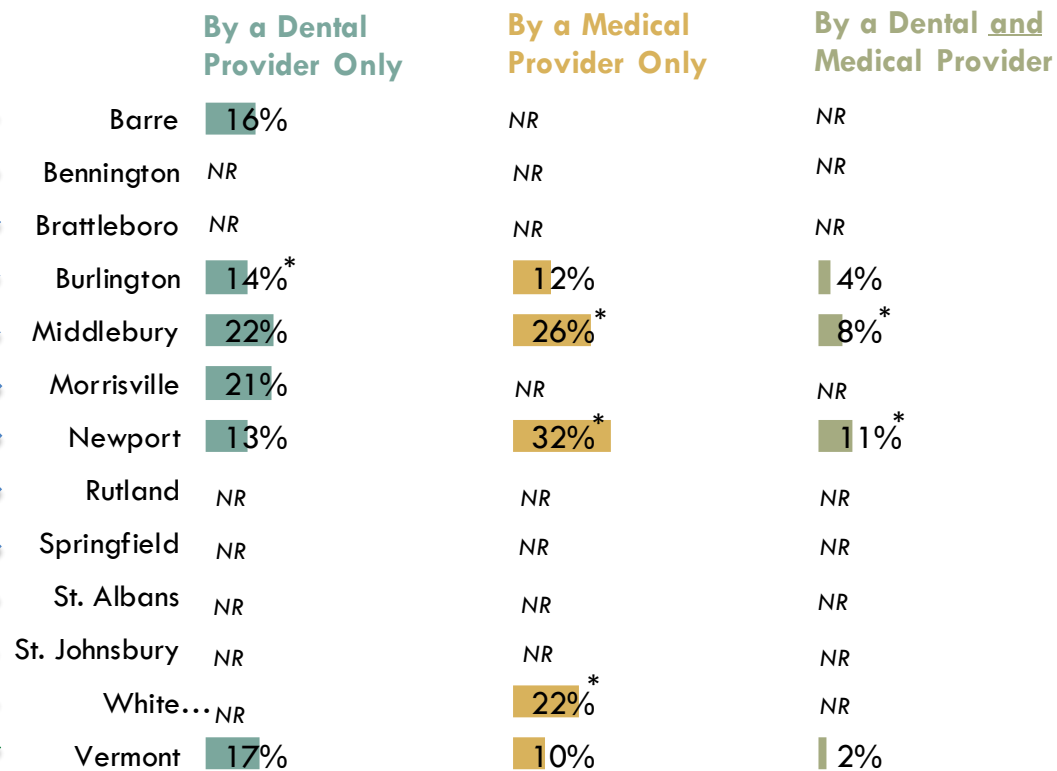
Percentages by provider type are rounded to the whole number, but the overall total takes into account the full percentages.

# Access to Care: Dental Services Among Medicaid-Enrolled Children by Their 2<sup>nd</sup> Birthday

**30%** of Vermont Medicaid-enrolled children born in 2015 received an **Oral Evaluation and Counseling** by their second birthday.



**By type of provider**, percent of Medicaid-enrolled children born in 2015 who received an Oral Evaluation and Counseling by their second birthday:



Data Source: Medicaid Claims Data

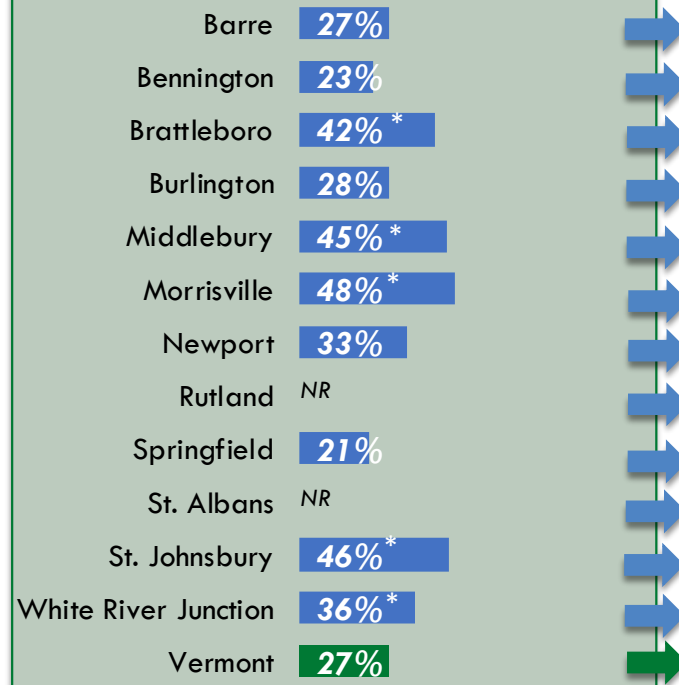
NR = Not reported due to a small number seen by one or more types of providers.

\* Significantly different from the rest of Vermont.

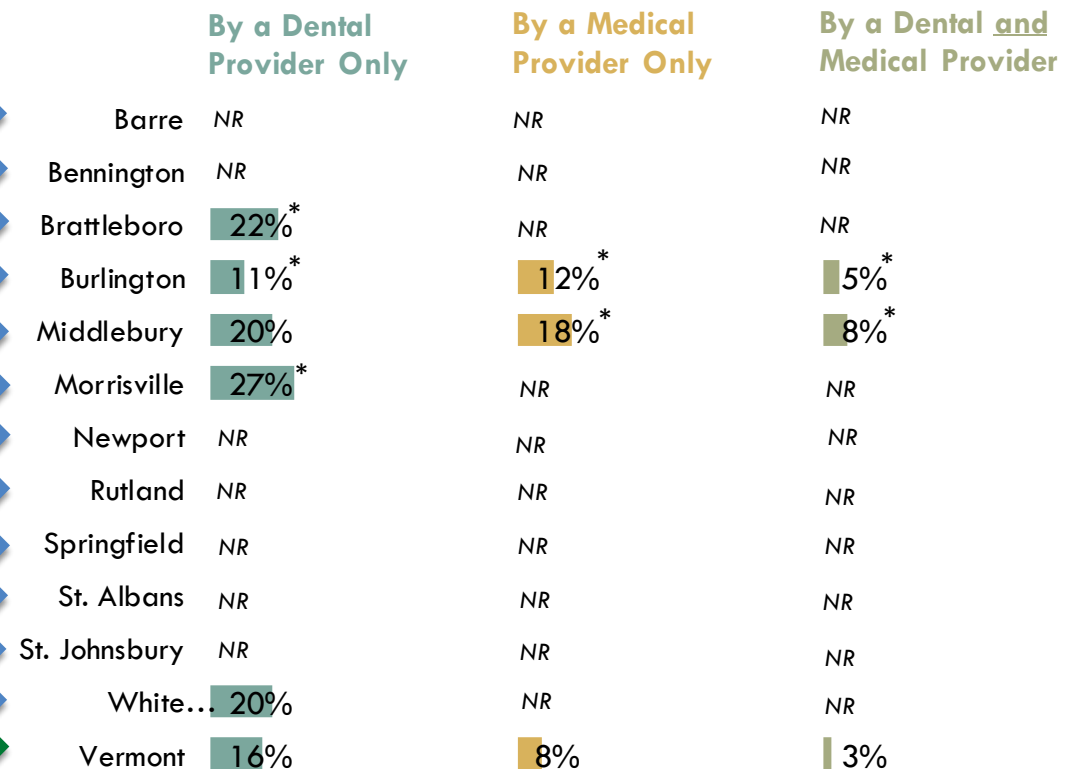
Percentages by provider type are rounded to the whole number, but the overall total takes into account the full percentages.

# Access to Care: Dental Services Among Medicaid-Enrolled Children by Their 2<sup>nd</sup> Birthday

**27%** of Vermont Medicaid-enrolled children born in 2015 received a fluoride application by their second birthday.



**By type of provider**, percent of Medicaid-enrolled children born in 2015 who received a fluoride application by their second birthday:



Data Source: Medicaid Claims Data

NR = Not reported due to a small number seen by one or more types of providers.

\* Significantly different from the rest of Vermont.

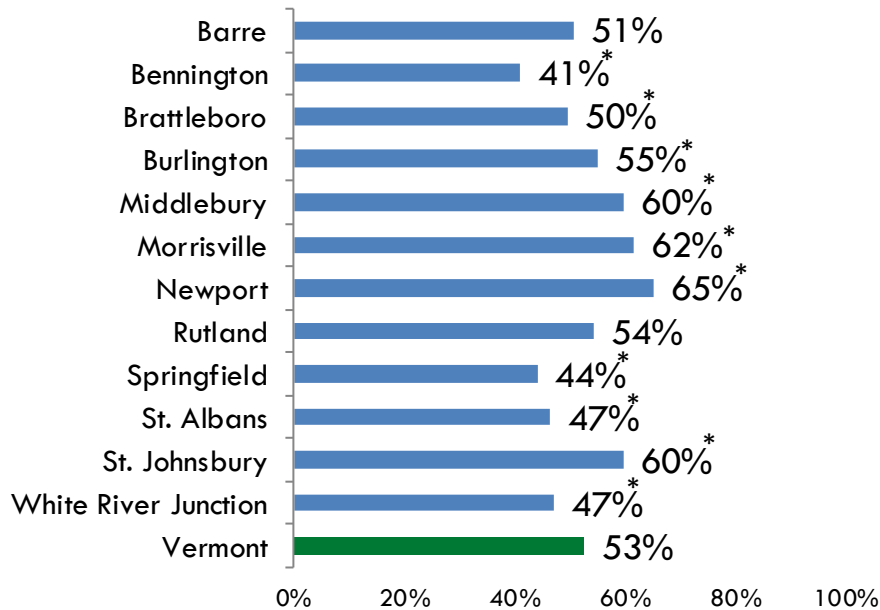
Percentages by provider type are rounded to the whole number, but the overall total takes into account the full percentages.

# Access to Care: Dental Services Among Medicaid-Enrolled Children Aged 2-5

53% of Vermont Medicaid-enrolled children aged 2-5 received preventive dental services in 2017.

56% of Vermont Medicaid-enrolled children aged 2-5 received any dental services by a dental provider in 2017.

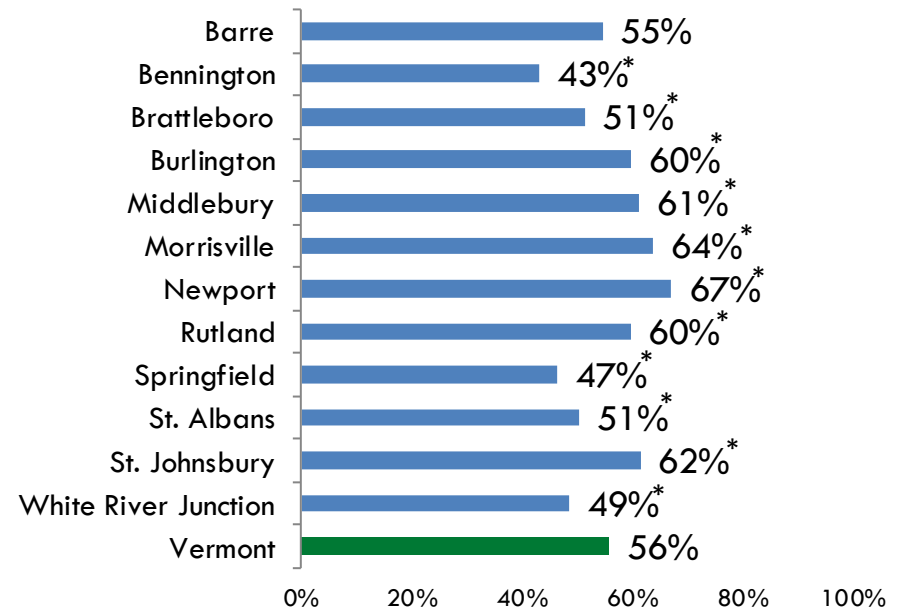
**Percent of Medicaid-Enrolled Vermonters Aged 2-5 Receiving Any Preventive Services in 2017**



Data Source: Medicaid Claims Data

\*Significantly different from the rest of Vermont.

**Percent of Medicaid-Enrolled Vermonters Aged 2-5 Receiving Any Dental Services in 2017**



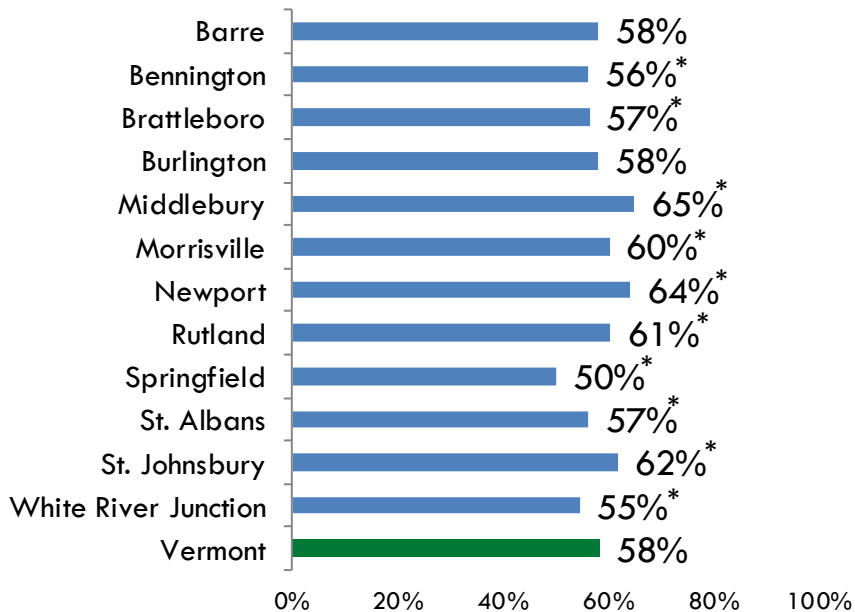
Data Source: Medicaid Claims Data

\*Significantly different from the rest of Vermont.

# Access to Care: Dental Services Among Medicaid-Enrolled Vermonters Aged 6-20

58% of Medicaid-enrolled Vermonters aged 6-20 received preventive dental services in 2017.

**Percent of Medicaid-Enrolled Vermonters Aged 6-20 Receiving Preventive Dental Services in 2017**

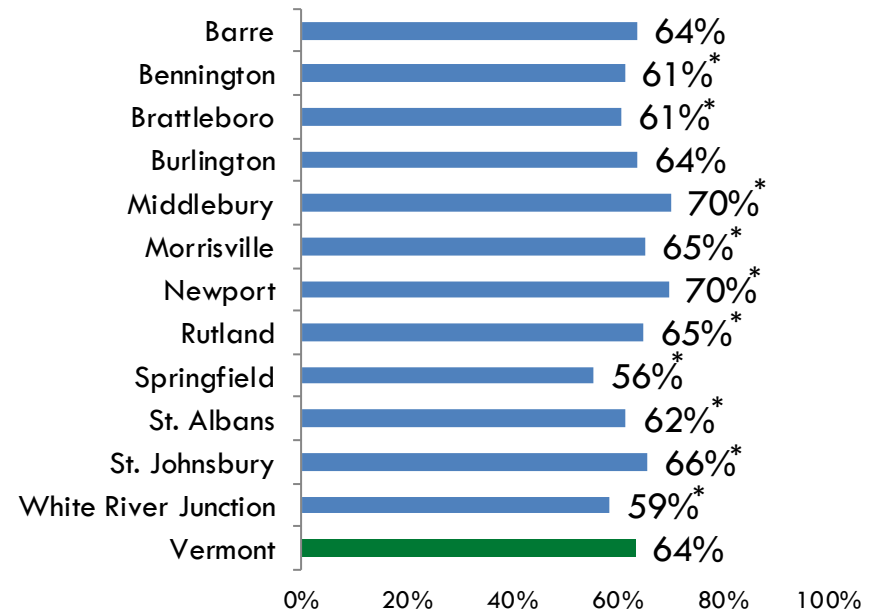


Data Source: Medicaid Claims Data

\*Significantly different from the rest of Vermont.

64% of Medicaid-enrolled Vermonters aged 6-20 received any dental services by a dental provider in 2017.

**Percent of Medicaid-Enrolled Vermonters Aged 6-20 Receiving Any Dental Services in 2017**



Data Source: Medicaid Claims Data

\*Significantly different from the rest of Vermont.

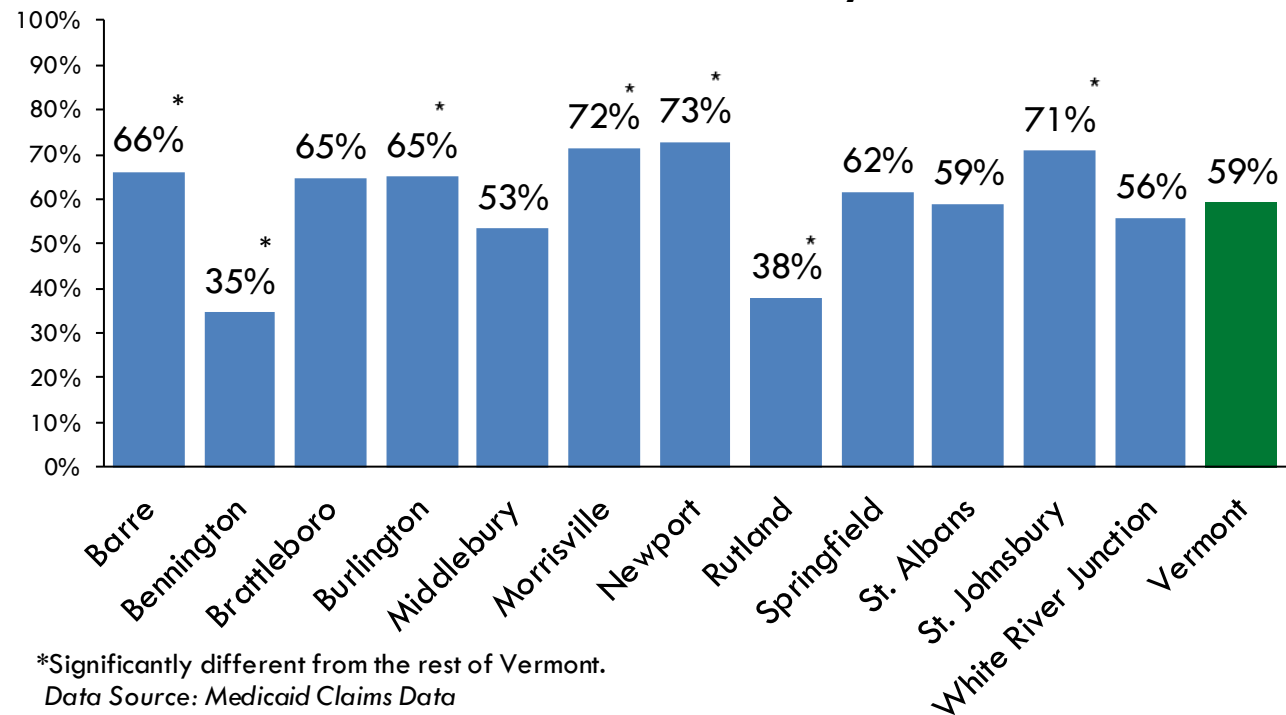
**The Healthy Vermonters 2020 goal for the percent of people in grades K-12 who use the dental care system each year is 85%.**

# Preventive Services: Dental Sealants Among Medicaid-Enrolled Children

Of Medicaid-enrolled 9-year-old Vermonters, 59% received at least one permanent sealant in the last 3 years.

These percentages in Offices of Local Health ranged from 35% to 73%.

### Percent of Medicaid-Enrolled 9-year-olds in 2017 who Received a Permanent Sealant Between their 6th and 9th Birthday



\*Significantly different from the rest of Vermont.

Data Source: Medicaid Claims Data

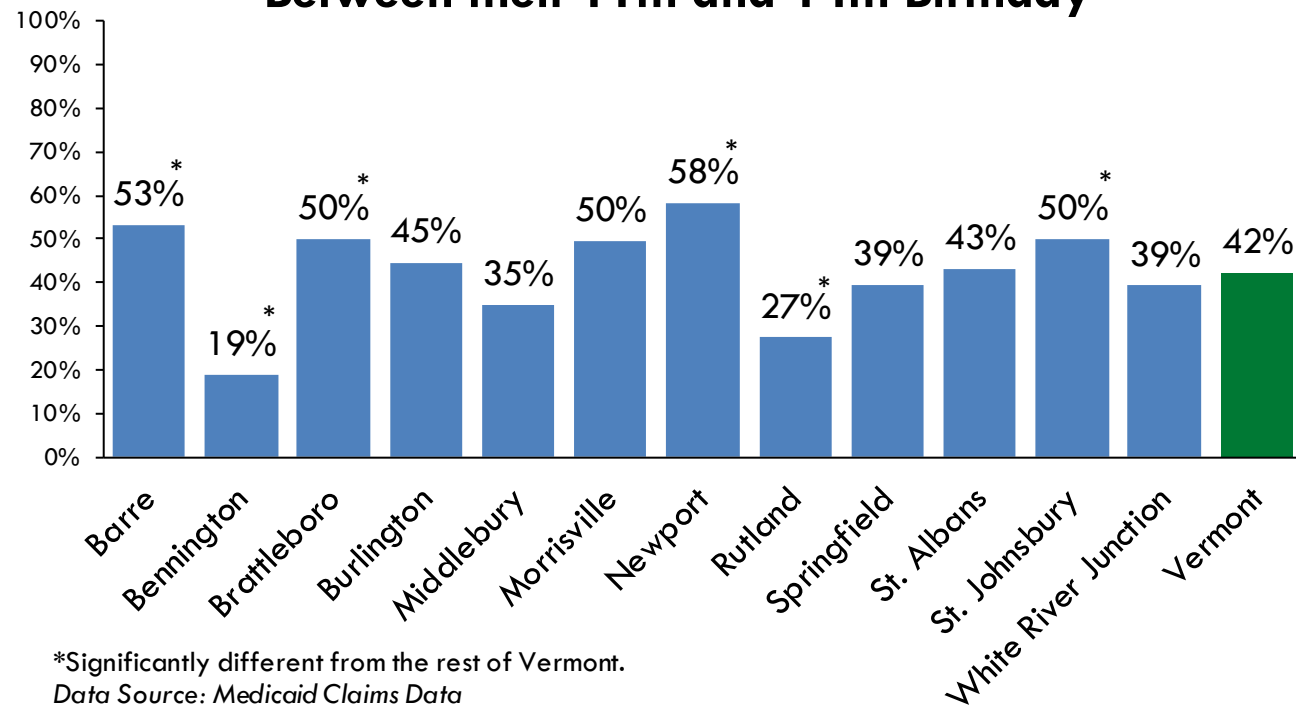
These data only include children who were Medicaid-enrolled for at least 95% of the time in the three years. About 38% of Vermont 9-year-olds are represented in these data.

# Preventive Services: Dental Sealants Among Medicaid-Enrolled Children

Of Medicaid-enrolled 14-year-old Vermonters, 42% received at least one permanent sealant in the last 3 years.

These percentages in Offices of Local Health ranged from 19% to 58%.

## Percent of Medicaid-Enrolled 14-year-olds in 2017 who Received a Permanent Sealant Between their 11th and 14th Birthday



\*Significantly different from the rest of Vermont.

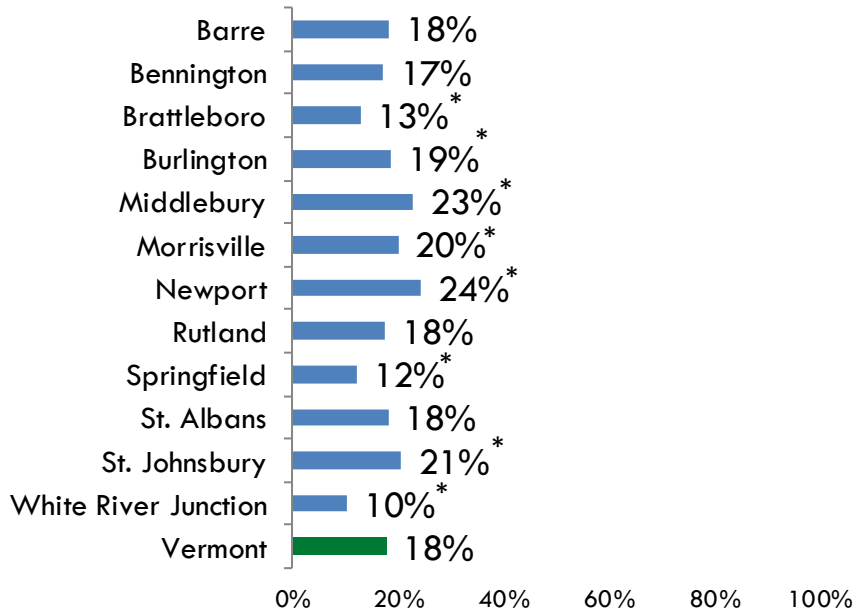
Data Source: Medicaid Claims Data

These data only include children who were Medicaid-enrolled for at least 95% of the time in the three years. About 33% of Vermont 14-year-olds are represented in these data.

# Access to Care: Dental Services Among Medicaid-Enrolled Adults Aged 21-64

18% of Vermont Medicaid-enrolled adults aged 21-64 received preventive dental services in 2017.

**Percent of Medicaid-Enrolled Vermonters Aged 21-64 Receiving Preventive Dental Services in 2017**

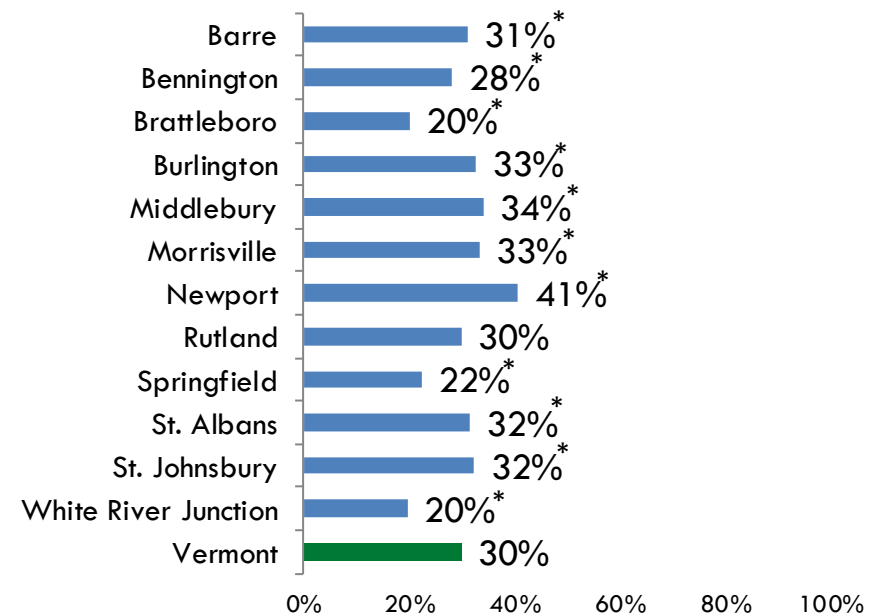


Data Source: Medicaid Claims Data

\*Significantly different from the rest of Vermont.

30% of Vermont Medicaid-enrolled adults aged 21-64 received any dental services by a dental provider in 2017.

**Percent of Medicaid-Enrolled Vermonters Aged 21-64 Receiving Any Dental Services in 2017**



Data Source: Medicaid Claims Data

\*Significantly different from the rest of Vermont.

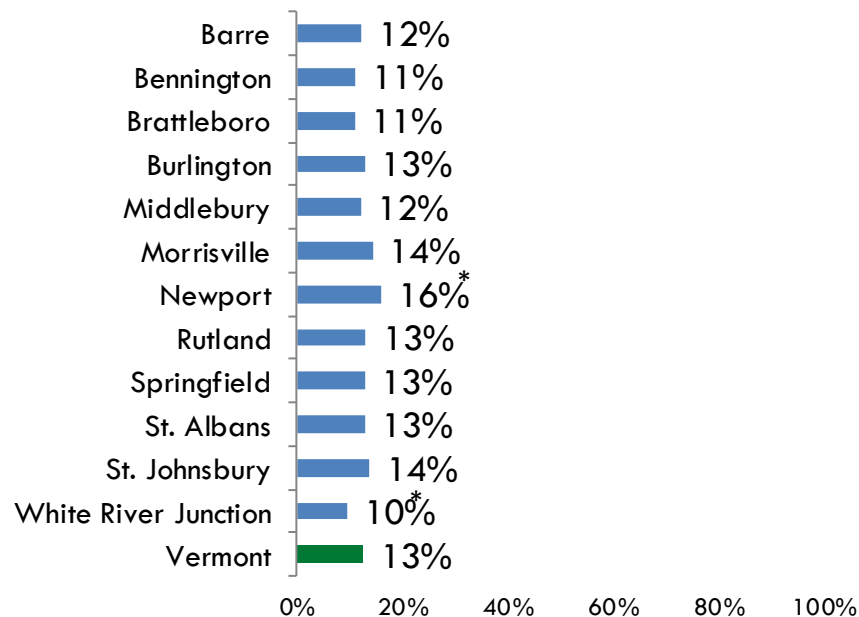
**The Healthy Vermonters 2020 goal for the percent of people age 18+ who use the dental care system each year is 85%.**



# Access to Care: Dental Services Among Medicaid-Enrolled Adults Aged 65+

13% of Vermont Medicaid-enrolled adults aged 65+ received preventive dental services in 2017.

**Percent of Medicaid-Enrolled Vermonters Aged 65+ Receiving Preventive Dental Services in 2017**

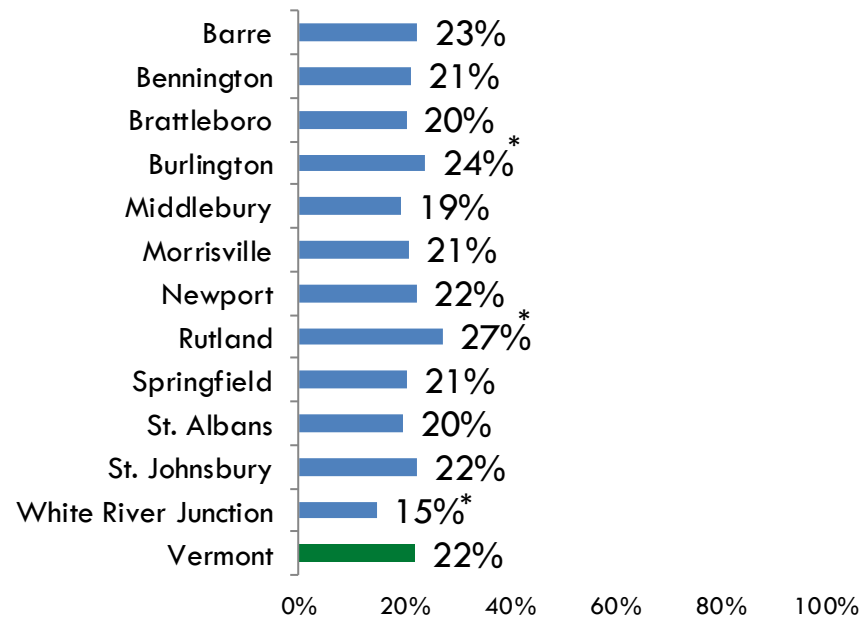


Data Source: Medicaid Claims Data

\*Significantly different from the rest of Vermont.

22% of Vermont Medicaid-enrolled adults aged 65+ received any dental services by a dental provider in 2017.

**Percent of Medicaid-Enrolled Vermonters Aged 65+ Receiving Any Dental Services in 2017**



Data Source: Medicaid Claims Data

\*Significantly different from the rest of Vermont.

**The Healthy Vermonters 2020 goal for the percent of people age 18+ who use the dental care system each year is 85%.**

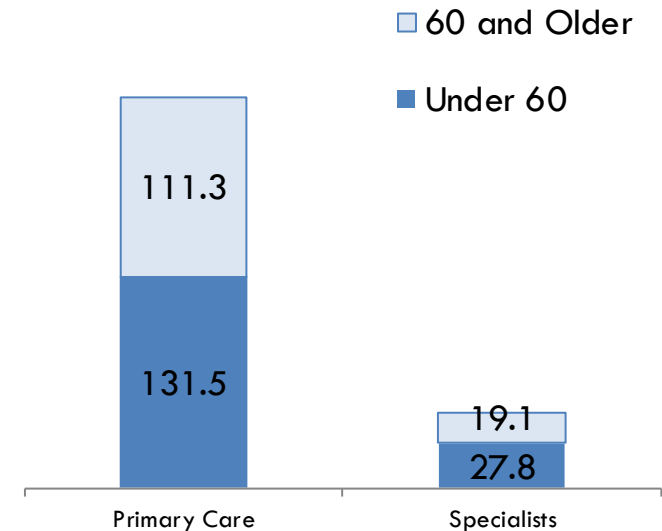
# 2017 Dentist Census

- ❑ Completed with license renewal August-September 2017.
- ❑ Self-reported data.
- ❑ The final response rate was 100%.
- ❑ Included in this report are dentists who provide patient care in Vermont.
- ❑ 14 dentists who reported fewer than 2 patient care hours per week on the average were excluded.

# Access to Care – Oral Health Care Providers

- In 2017, Vermont had 242.7 full-time equivalent (FTE) primary care dentists and 46.9 FTE specialists.
  - ▣ Primary care dentists include general practice and pediatric dentistry.
  - ▣ Specialist dentists include:
    - oral surgery (14.8 FTE),
    - endodontics (7.7 FTE),
    - orthodontics (16.7 FTE),
    - periodontics (5.6 FTE),
    - prosthodontics (1.1 FTE),
    - and other specialties (1.0 FTE).
- Almost half of primary care dentists (45%) and specialist dentists (46%) are 60 and older.

**Full-Time Equivalent Dentists by Specialty and Age in Vermont (2017)**

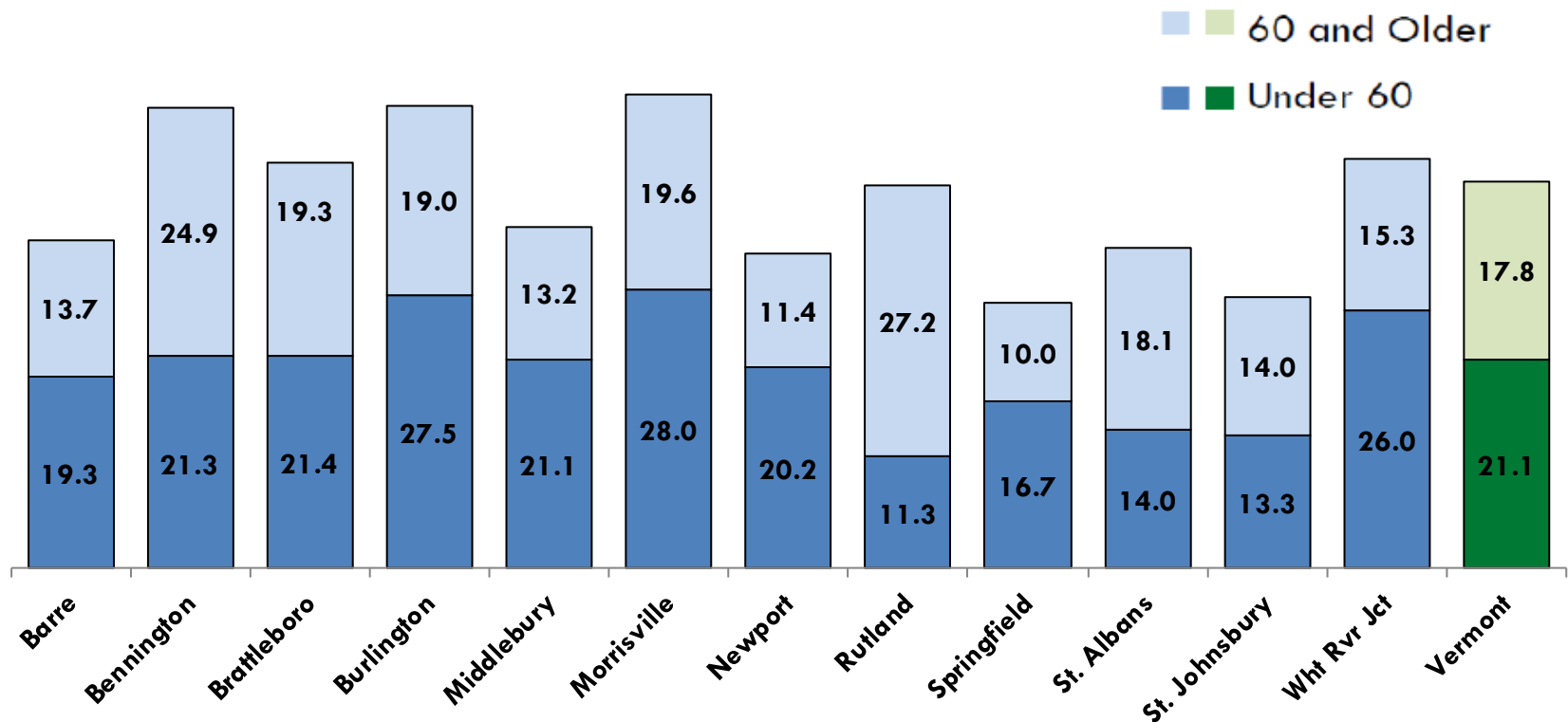


*Data Source: 2017 Dentist Census  
Percentages by specialty and age are rounded, but the overall total takes into account the full percentages.*

# Access to Care – Oral Health Care Providers

In 2017, Vermont had 38.9 full-time equivalent primary care dentists per 100,000 Vermonters.

## Primary Care Dentists Full-Time Equivalency per 100,000 Residents by Age of Dentists (2017)



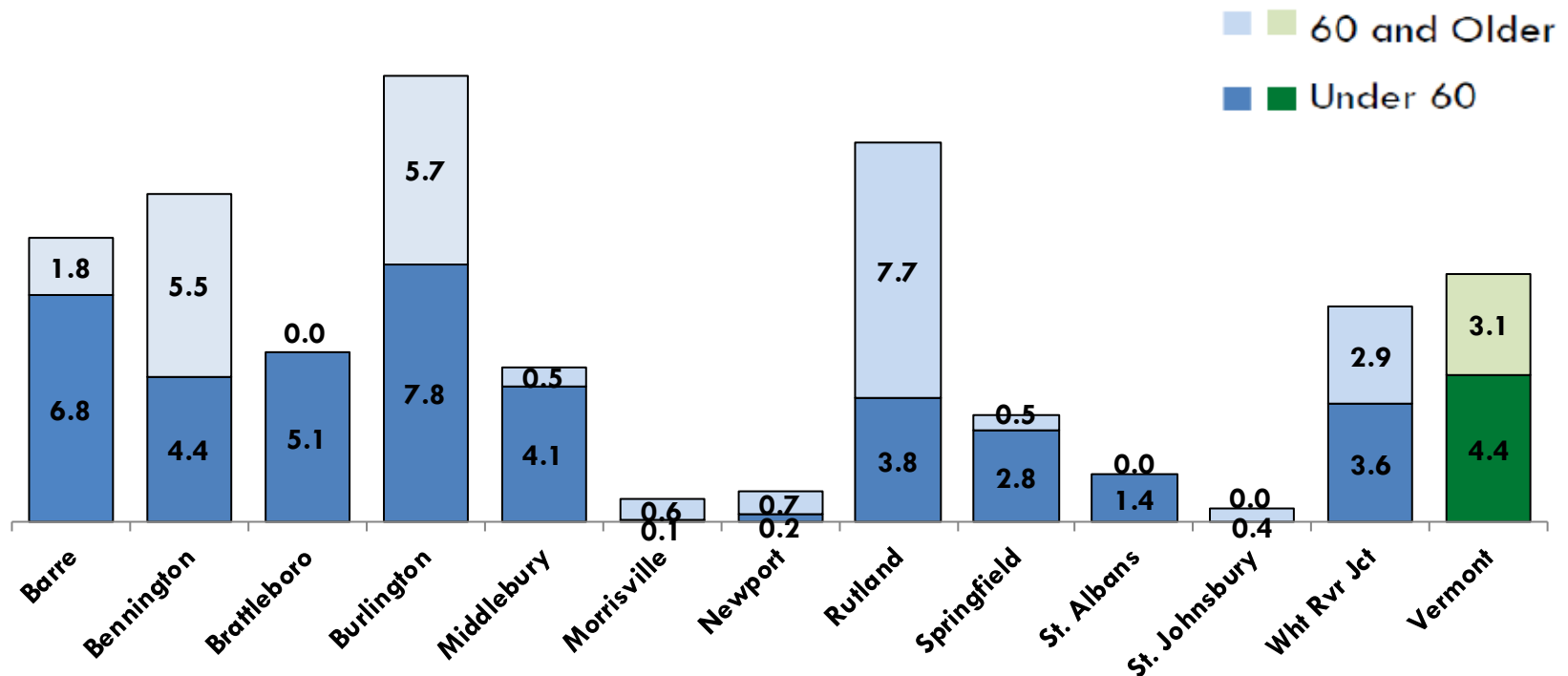
Data Source: 2017 Dentist Census

Ratios by specialty and age are rounded, but the overall total takes into account the full ratios.

# Access to Care – Oral Health Care Providers

In 2017, Vermont had 7.5 full-time equivalent specialist dentists per 100,000 Vermonters.

## Specialist Dentists Full-Time Equivalency per 100,000 Residents by Age of Dentists (2017)



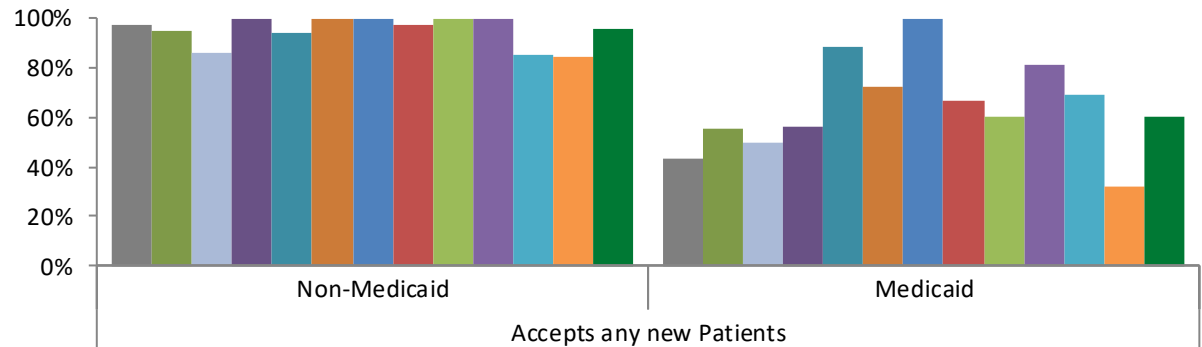
Data Source: 2017 Dentist Census

Ratios by specialty and age are rounded, but the overall total takes into account the full ratios.

# Access to Care – Primary Care Dentists Accepting New Patients

96% of primary care dentists in Vermont were accepting new non-Medicaid patients, but only 60% were accepting new Medicaid patients in 2017.

**Percent of Primary Care Dentists Accepting New Patients in 2017**



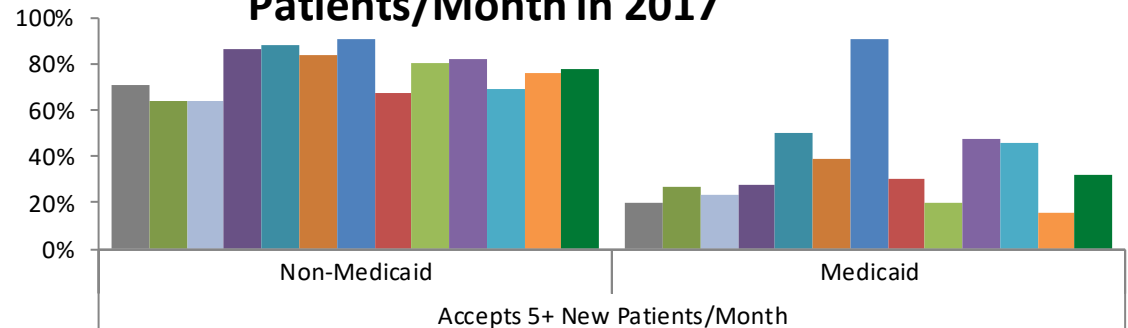
	Accepts any new Patients	
	Non-Medicaid	Medicaid
■ Barre	97%	43%
■ Bennington	95%	55%
■ Brattleboro	86%	50%
■ Burlington	100%	56%
■ Middlebury	94%	88%
■ Morrisville	100%	72%
■ Newport	100%	100%
■ Rutland	97%	67%
■ Springfield	100%	60%
■ St. Albans	100%	81%
■ St. Johnsbury	85%	69%
■ White River Junction	84%	32%
■ Vermont	96%	60%

Data Source: 2017 Dentist Census

# Access to Care – Primary Care Dentists Accepting New Patients

78% of primary care dentists in Vermont were accepting 5 or more new non-Medicaid patients a month, but only 32% were accepting 5 or more new Medicaid patients a month in 2017.

**Percent of Primary Care Dentists Accepting 5+ New Patients/Month in 2017**



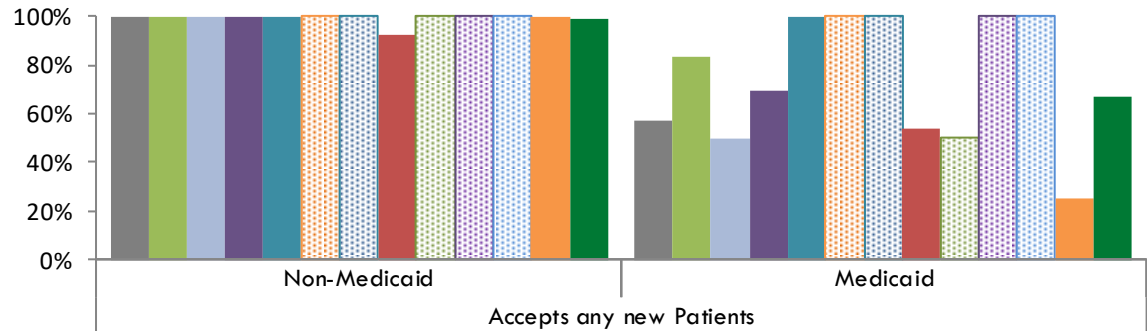
	Accepts 5+ New Patients/Month	
	Non-Medicaid	Medicaid
■ Barre	71%	20%
■ Bennington	64%	27%
■ Brattleboro	64%	23%
■ Burlington	86%	28%
■ Middlebury	88%	50%
■ Morrisville	84%	39%
■ Newport	91%	91%
■ Rutland	67%	30%
■ Springfield	80%	20%
■ St. Albans	82%	48%
■ St. Johnsbury	69%	46%
■ White River Junction	76%	16%
■ Vermont	78%	32%

Data Source: 2017 Dentist Census

# Access to Care – Specialist Dentists Accepting New Patients

99% of specialist dentists in Vermont were accepting new non-Medicaid patients, but only 67% were accepting new Medicaid patients in 2017.

**Percent of Specialist Dentists Accepting New Patients in 2017**



	Accepts any new Patients	
	Non-Medicaid	Medicaid
■ Barre	100%	57%
■ Bennington	100%	83%
■ Brattleboro	100%	50%
■ Burlington	100%	69%
■ Middlebury	100%	100%
■ Morrisville	100%	100%
■ Newport	100%	100%
■ Rutland	92%	54%
■ Springfield	100%	50%
■ St. Albans	100%	100%
■ St. Johnsbury	100%	100%
■ White River Junction	100%	25%
■ Vermont	99%	67%

Data Source: 2017 Dentist Census

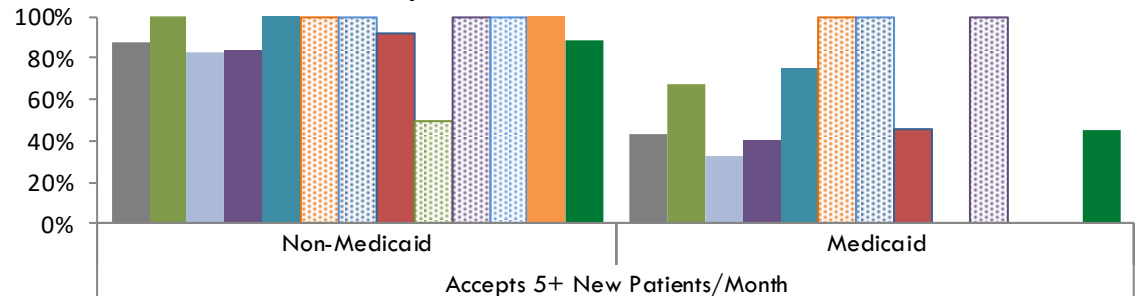
One or fewer FTE specialist dentists serve this area



# Access to Care – Specialist Dentists Accepting New Patients

89% of specialist dentists in Vermont were accepting 5 or more new non-Medicaid patients a month, but only 45% were accepting 5 or more new Medicaid patients a month in 2017.

**Percent of Specialist Dentists Accepting 5+ New Patients/Month in 2017**



	Accepts 5+ New Patients/Month	
	Non-Medicaid	Medicaid
■ Barre	88%	43%
■ Bennington	100%	67%
■ Brattleboro	83%	33%
■ Burlington	84%	40%
■ Middlebury	100%	75%
■ Morrisville	100%	100%
■ Newport	100%	100%
■ Rutland	92%	46%
■ Springfield	50%	0%
■ St. Albans	100%	100%
■ St. Johnsbury	100%	0%
■ White River Junction	100%	0%
■ Vermont	89%	45%

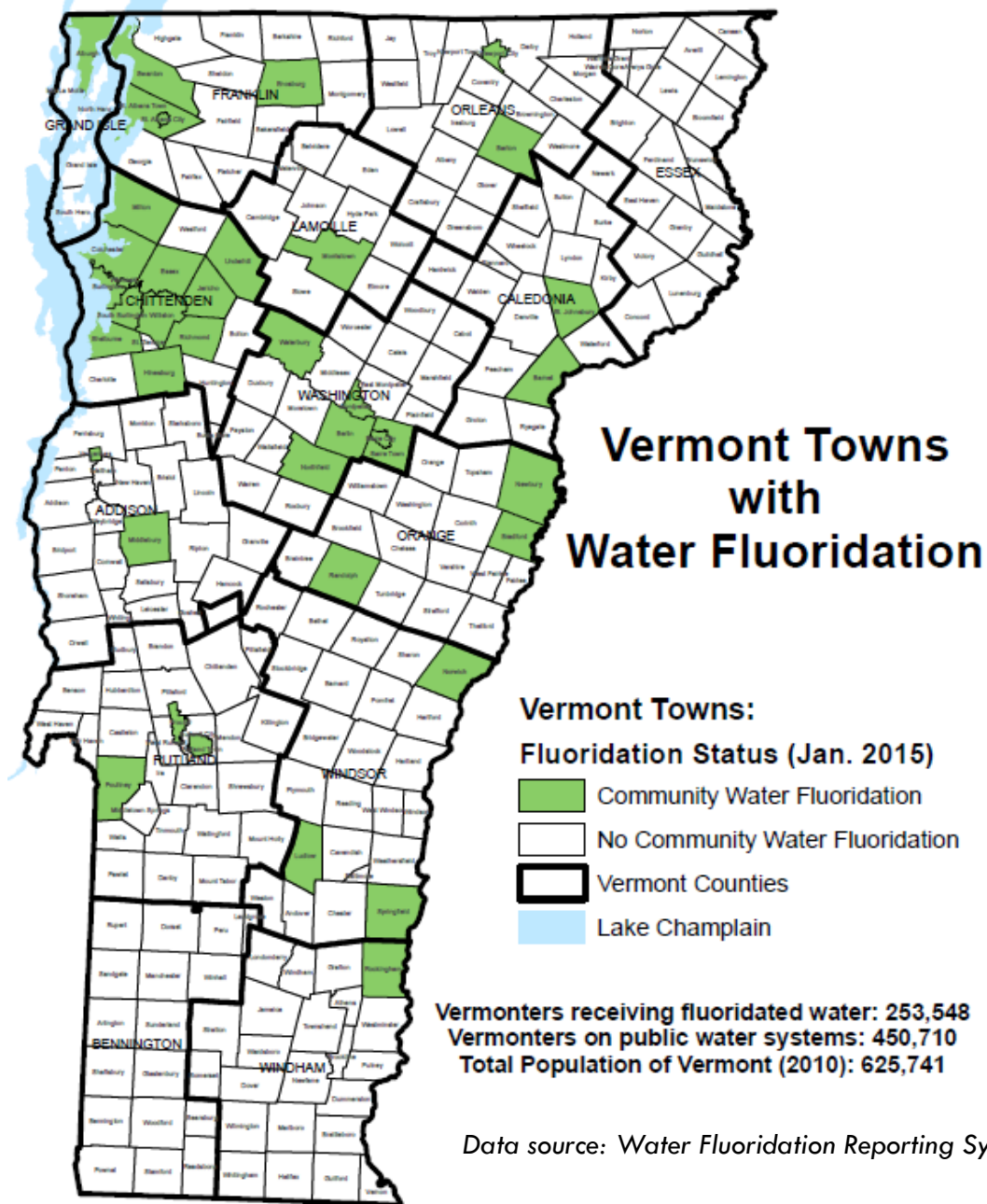
Data Source: 2017 Dentist Census

One or fewer FTE specialist dentists serve this area

# Water Fluoridation Reporting System (WFRS)

- An online tool that helps states manage the quality of their water fluoridation programs.
- Helps describe the percentage of the U.S. population on community water systems who receive 0.70 ppm optimally fluoridated drinking water.
  - ▣ A community water system is a public water system that supplies water to the same population year-round.
- WFRS monitors the number and quality of water fluoridation systems, as well as the state population on public water supply systems.
- This system was developed by CDC in partnership with the Association of State and Territorial Dental Directors (ASTDD).

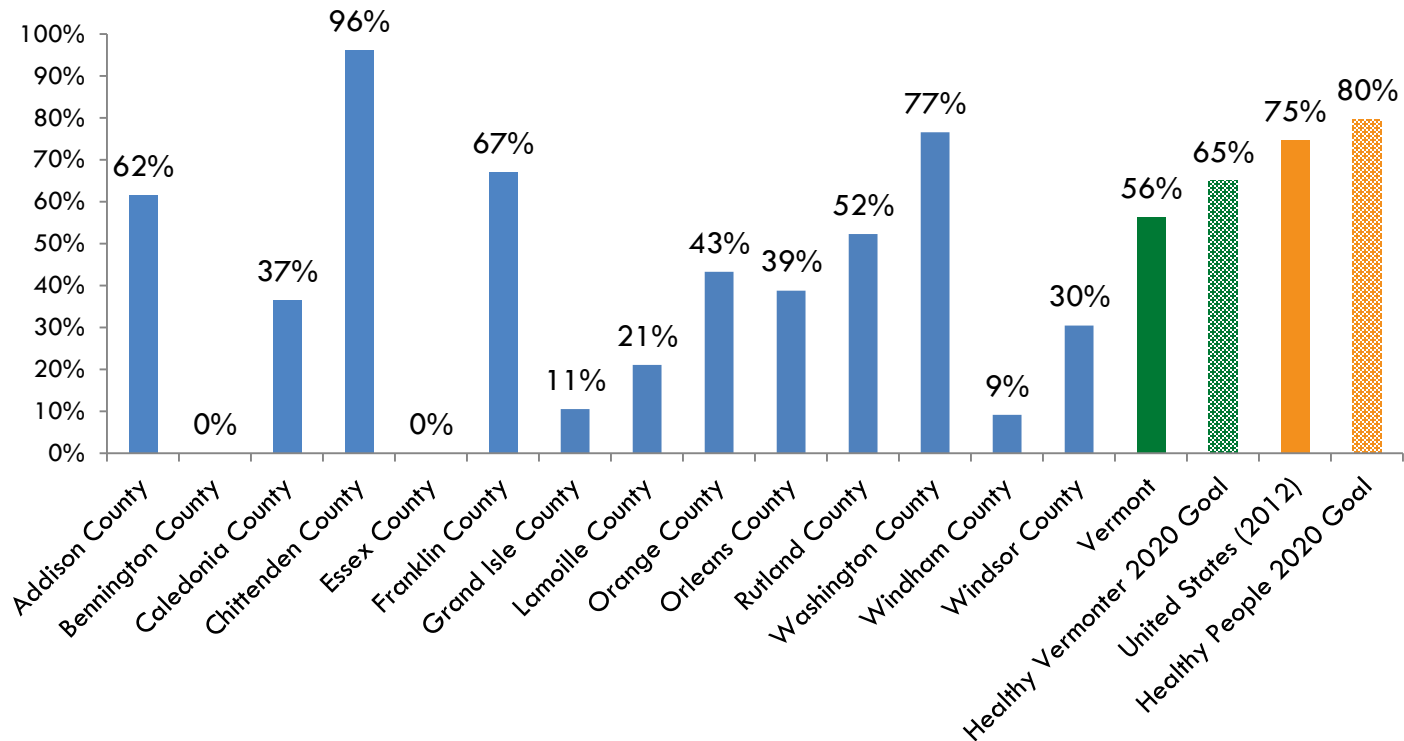
# Community Water Fluoridation



# Community Water Fluoridation

56% of Vermont's population served by community public water systems have optimally fluoridated water. This is lower than the United States, the Healthy Vermonters 2020 goal of 65%, and the Healthy People 2020 Goal.

**Percent of Population Served by Community Public Water Systems that have Optimally Fluoridated Water (2015)**



Data source: Water Fluoridation Reporting System

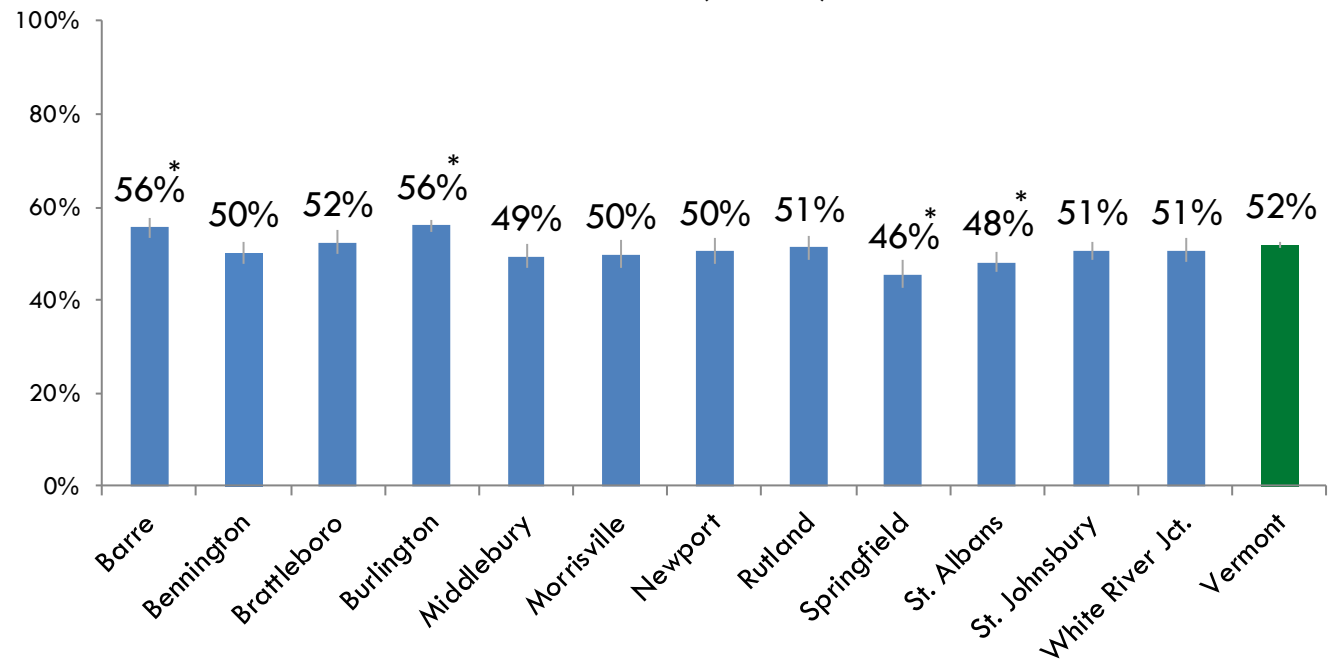
# Youth Risk Behavior Survey (YRBS)

- A paper survey administered in Vermont middle and high schools every two years since 1993.
- The YRBS measures the prevalence of behaviors that contribute to the leading causes of death, disease, and injury among youth.
- Vermont surveys over 30,000 students at each administration.
- Weighted data is compiled to generate a representative state sample.

# Water Consumption Among High School Students (YRBS)

52% of Vermonters in grades 9-12 reported drinking three or more bottles or glasses of water per day during the previous week.

### Percent of Students in Grades 9-12 who Drank Three or More Bottles or Glasses of Water Per Day in the Past Week (2017)



Data Source: Youth Risk Behavior Survey (YRBS)  
\*Significantly different from Vermont.

# Risk Factors

## Indicators

- ❑ Sugar-sweetened beverages
- ❑ Use of snuff/dip

## Data Sources

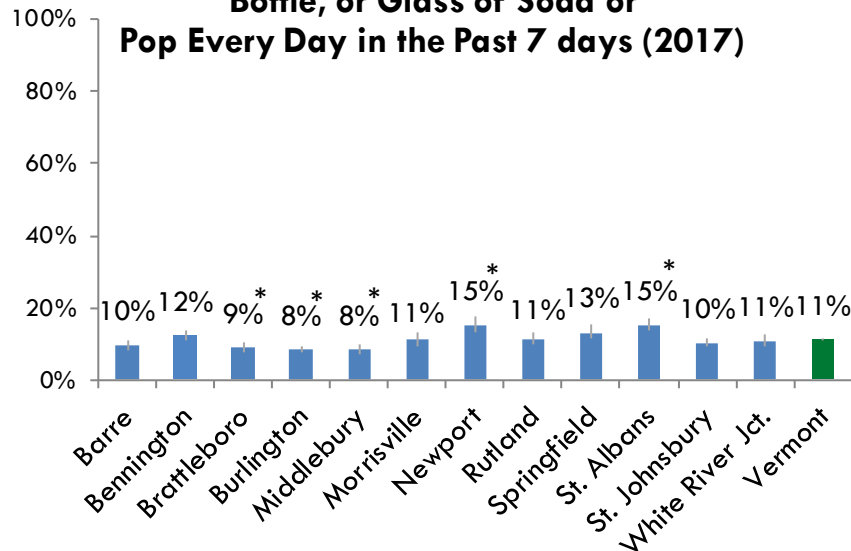
- ❑ Youth Risk Behavior Survey (YRBS)

# Risk Factors – Sugar-sweetened Beverage Consumption Among High School Students (YRBS)

11% of Vermonters in grades 9-12 drank at least one soda daily in the past 7 days.

12% of Vermonters in grades 9-12 drank at least one sugar-sweetened beverage daily (not including soda) in the past 7 days.

**Percent of Students in Grades 9-12 who Reported Drinking at Least One Can, Bottle, or Glass of Soda or Pop Every Day in the Past 7 days (2017)**

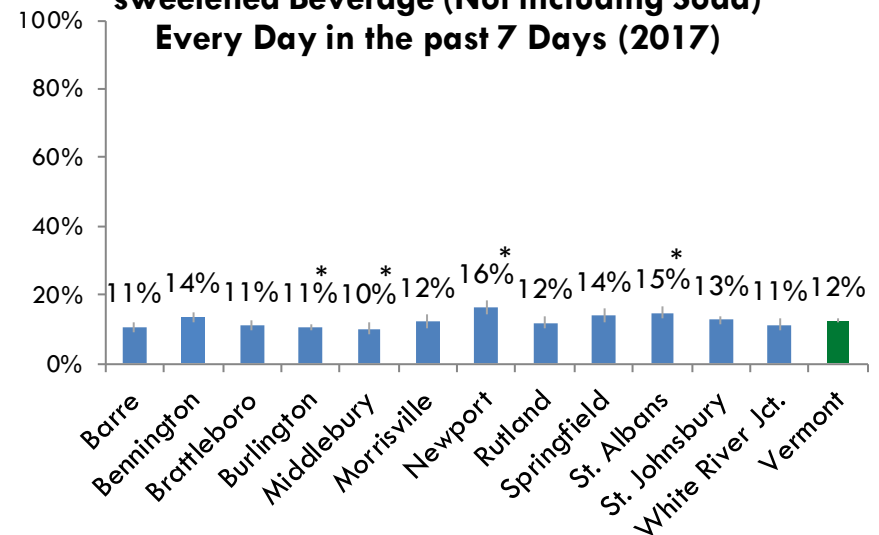


Data Source: Youth Risk Behavior Survey (YRBS)

\*Significantly different from Vermont.

NOTE: The question instructed students not to include diet soda or pop.

**Percent of Students in Grades 9-12 who Drank a Can, Bottle or Glass of a Sugar-sweetened Beverage (Not including Soda) Every Day in the past 7 Days (2017)**



Data Source: Youth Risk Behavior Survey (YRBS)

\*Significantly different from Vermont.

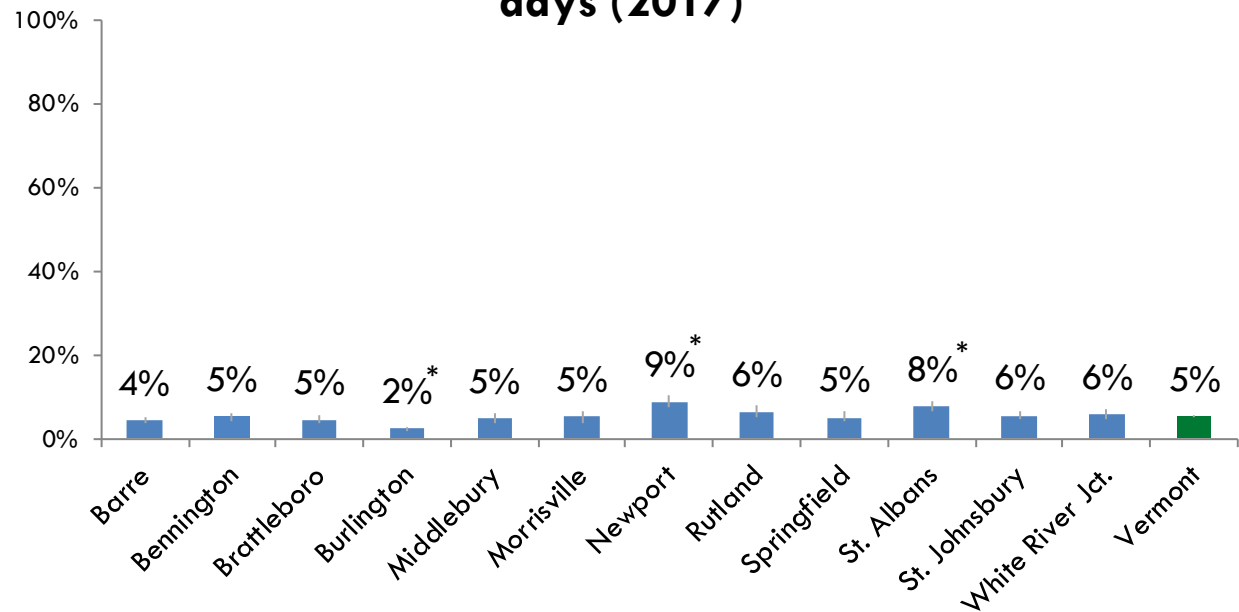
NOTE: The question instructed students not to include soda or pop, diet drinks, or 100% fruit juice.



# Risk Factors – Smokeless Tobacco Use Among High School Students (YRBS)

5% of Vermonters in grades 9-12 reported using smokeless tobacco products during the past 30 days. Smokeless tobacco products include chewing tobacco, snuff, dip, snus, or dissolvable tobacco products.

**Percent of Students in Grades 9-12 who Used Smokeless Tobacco Products During the Past 30 days (2017)**



Data Source: Youth Risk Behavior Survey (YRBS)

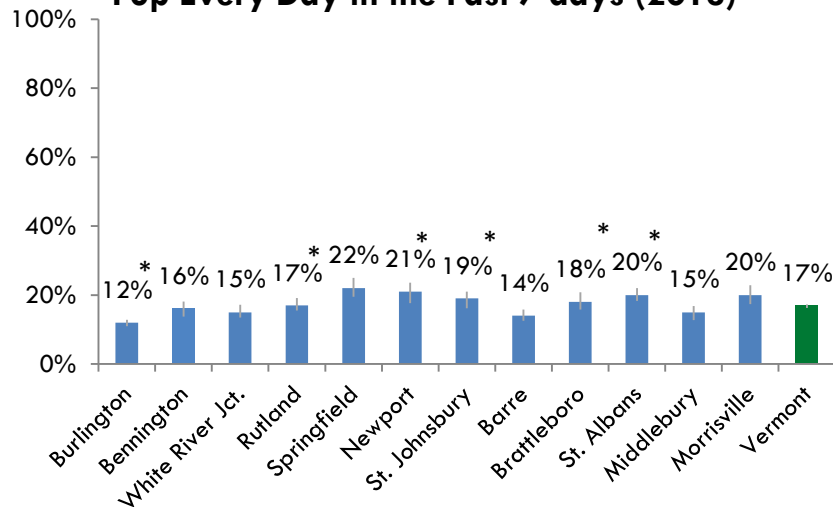
\*Significantly different from Vermont.

# Risk Factors – Sugar-sweetened Beverage Consumption Among High School Students (YRBS)

17% of Vermonters in grades 9-12 drank at least one soda daily in the past 7 days.

17% of Vermonters in grades 9-12 drank at least one sugar-sweetened beverage daily (not including soda) in the past 7 days.

**Percent of Students in Grades 9-12 who Reported Drinking at Least One Can, Bottle, or Glass of Soda or Pop Every Day in the Past 7 days (2013)**

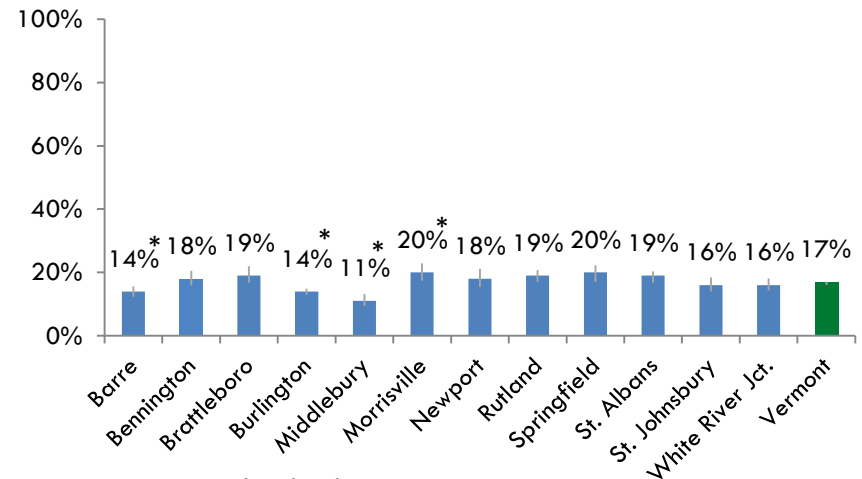


Data Source: Youth Risk Behavior Survey (YRBS)

\*Significantly different from Vermont.

Note: The question instructed students not to include diet soda or pop.

**Percent of Students in Grades 9-12 who Drank a Can, Bottle or Glass of a Sugar-sweetened Beverage (Not including Soda) Every Day in the past 7 Days (2013)**



Data Source: Youth Risk Behavior Survey (YRBS)

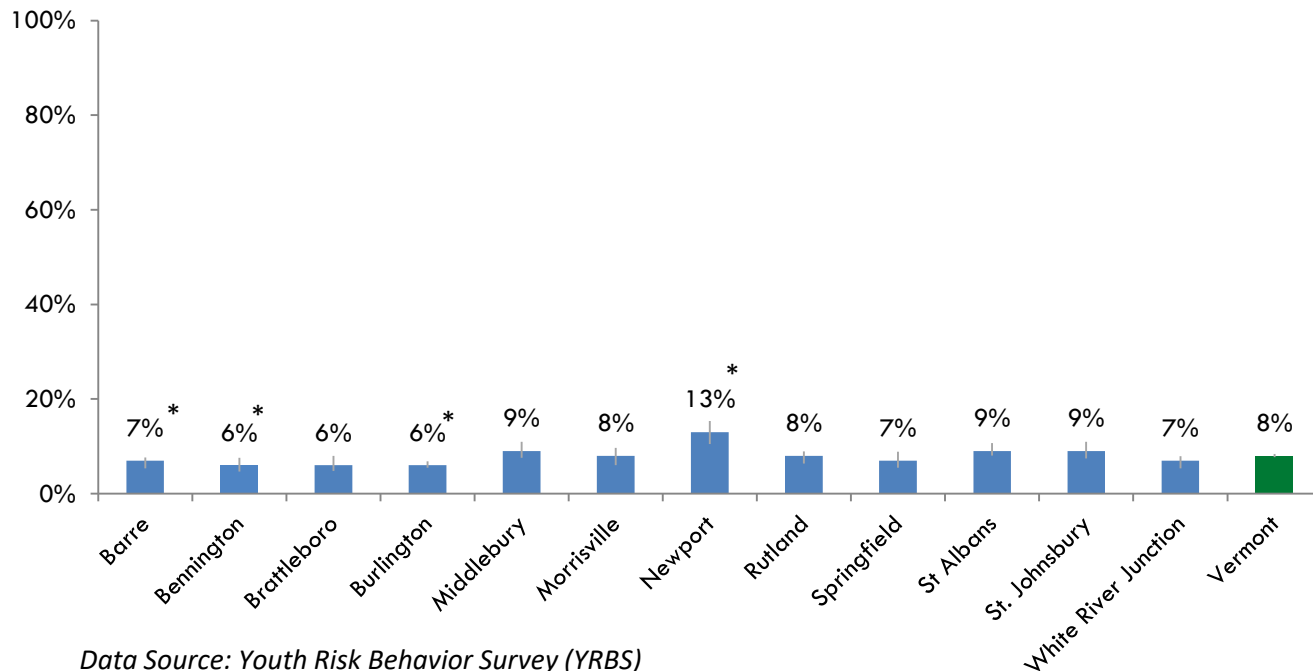
\*Significantly different from Vermont.

NOTE: The question instructed students not to include soda or pop, diet drinks, or 100% fruit juice.

# Risk Factors – Snuff/dip Use Among High School Students (YRBS)

8% of Vermonters in grades 9-12 reported using chewing tobacco, snuff, or dip during the past 30 days.

### Percent of Students in Grades 9-12 who Used Snuff/dip During the Past 30 days (2013)



Data Source: Youth Risk Behavior Survey (YRBS)

\*Significantly different from Vermont.

# Oral Health Outcomes

## Indicators

- ❑ Tooth loss
- ❑ Treated for extractions, endodontics or restorations
- ❑ Emergency Department visits

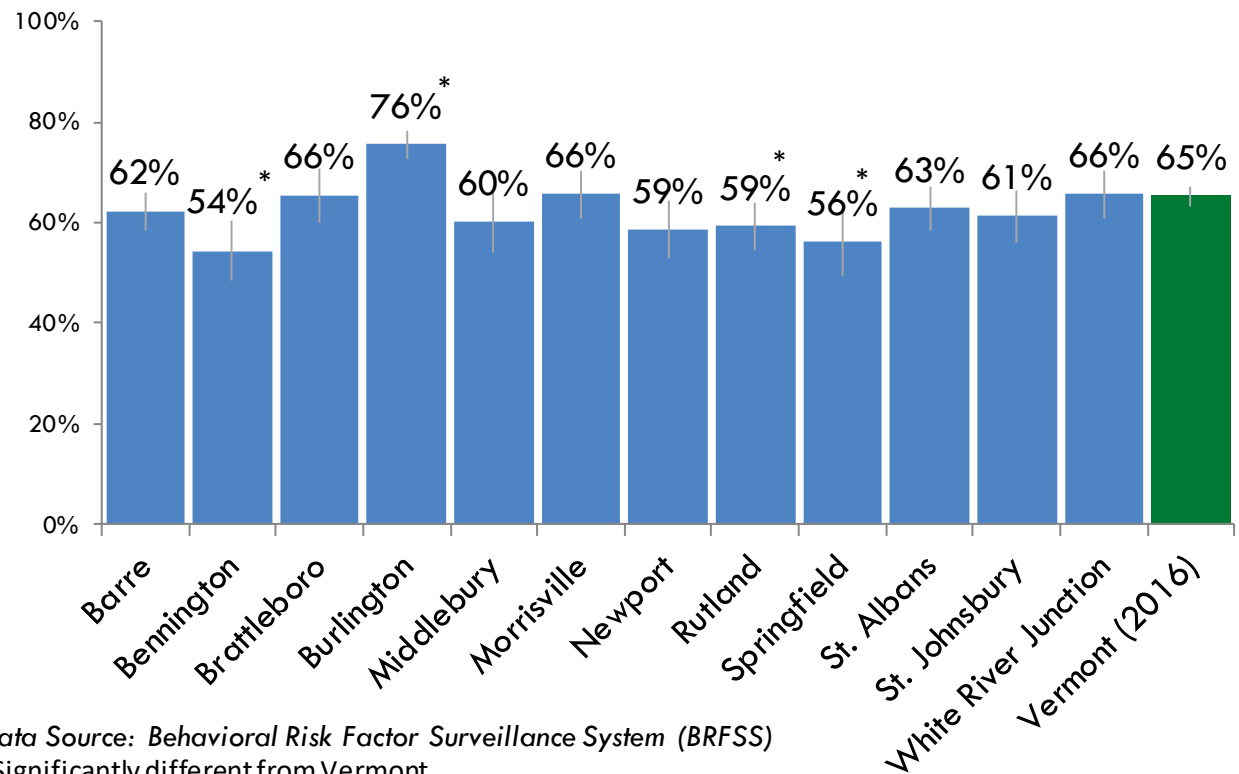
## Data Sources

- ❑ Behavioral Risk Factor Surveillance Survey (BRFSS)
- ❑ Medicaid claims
- ❑ Vermont Uniform Hospital Discharge Data Set (VUHDDS)

# Oral Health Outcomes: No Teeth Lost Among Adults Aged 18-64 (BRFSS)

65% of Vermont adults aged 18-64 did not have any tooth loss due to tooth decay or gum disease, in 2016.

### Percent of Adults Aged 18-64 With No Teeth Lost (2014, 2016)



Data Source: Behavioral Risk Factor Surveillance System (BRFSS)

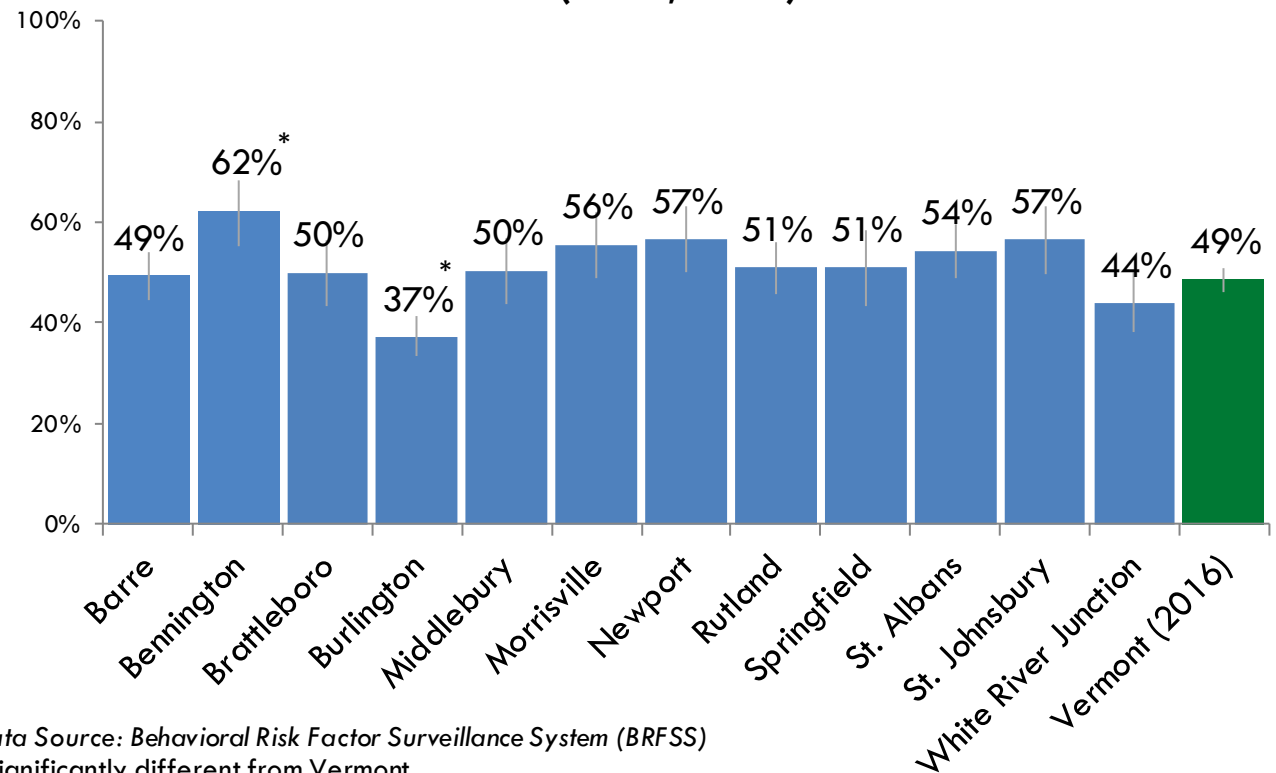
\*Significantly different from Vermont.

# Healthy Vermonters 2020 Goal: Tooth Loss Among Adults Aged 45-64 (BRFSS)

49% of Vermont adults aged 45-64 have had a tooth extracted due to tooth decay or gum disease, in 2016.

The Healthy Vermonters 2020 goal for the percent of adults age 45-64 who have ever had a tooth extracted because of dental caries or periodontal disease is 45%.

### Percent of Adults 45-64 who Have Ever Had a Tooth Extracted (2014, 2016)

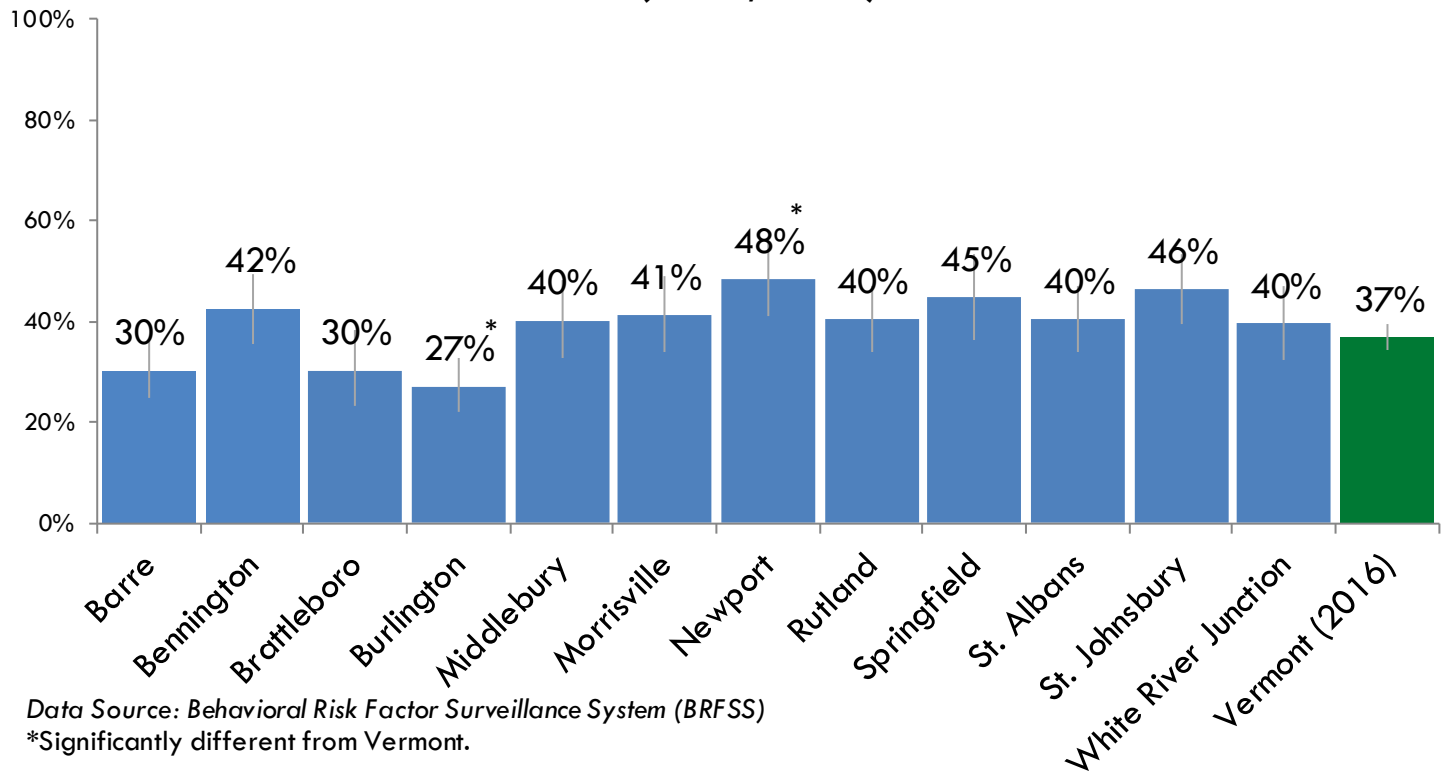


Data Source: Behavioral Risk Factor Surveillance System (BRFSS)  
\*Significantly different from Vermont.

# Oral Health Outcomes: Six or More Teeth Lost Among Adults Aged 65+ years (BRFSS)

37% of Vermont adults 65 and older have lost six or more teeth due to tooth decay or gum disease, in 2016.

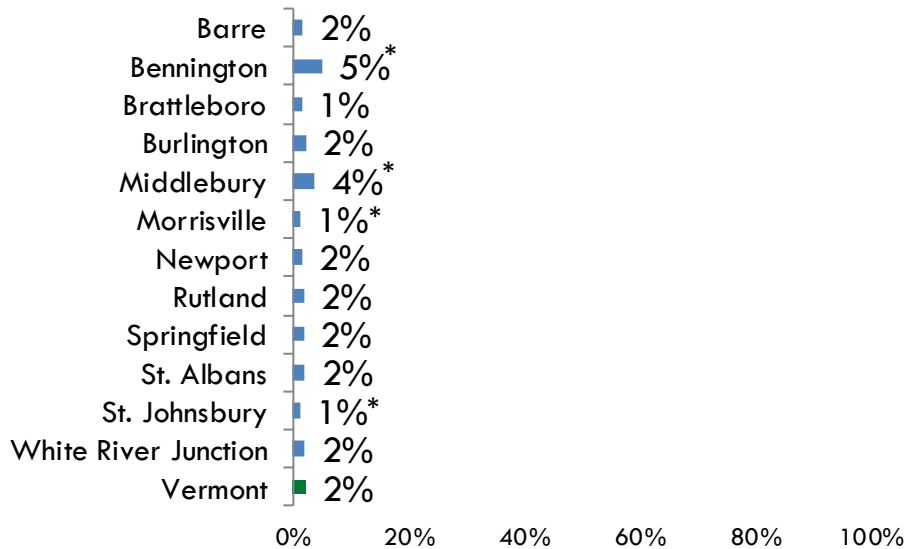
### Adults 65 and Older who Have Lost Six or More Teeth (2014, 2016)



# Oral Health Outcomes: Medicaid-Enrolled Children Aged 1-5 Treated for Extractions, Endodontics or Restorations

In 2017, 1,485 (8%) Medicaid-enrolled children aged 1-5 years were treated for extractions, endodontics or restorations. Of those children, 26% were treated in a hospital setting.

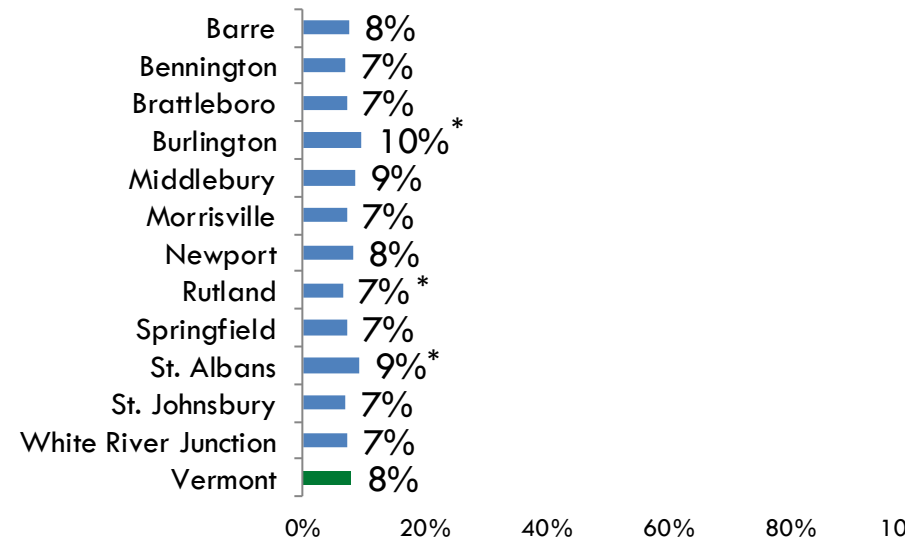
**Percent of Medicaid-Enrolled Vermonters Aged 1-5 Treated for Extractions, Endodontics or Restorations in a Hospital Setting in 2017**



Data Source: Medicaid Claims Data

\*Significantly different from the rest of Vermont.

**Percent of Medicaid-Enrolled Vermonters Aged 1-5 Treated for Extractions, Endodontics or Restorations in Any Setting in 2017**



Data Source: Medicaid Claims Data

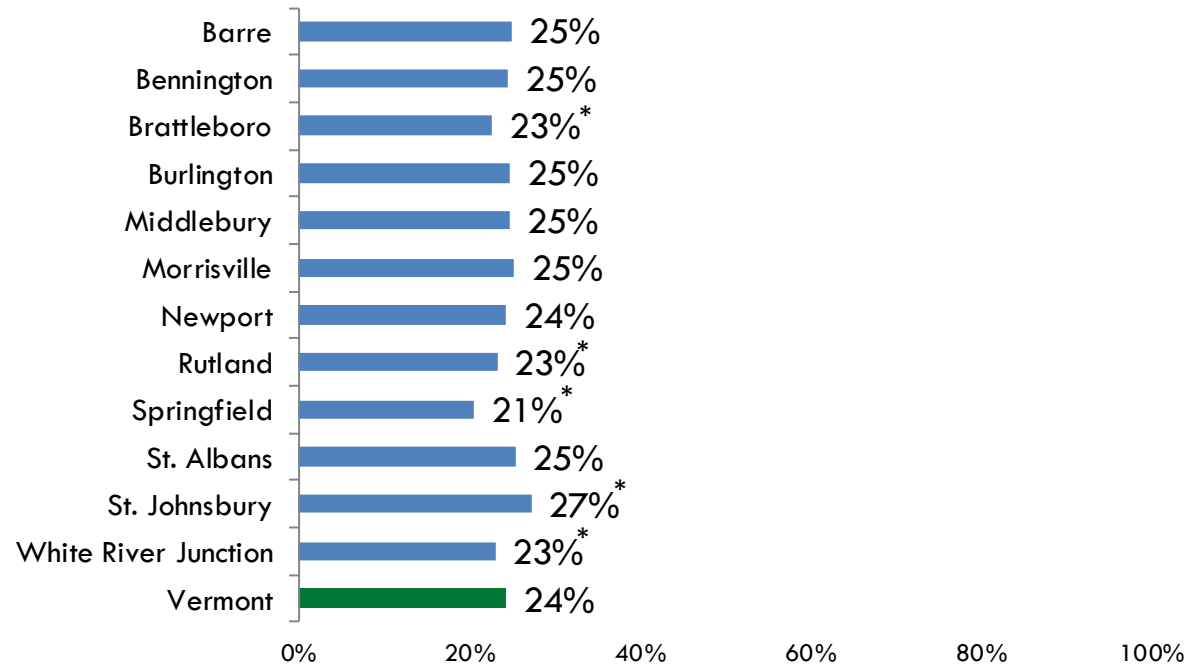
\*Significantly different from the rest of Vermont.



# Oral Health Outcomes: Medicaid-Enrolled Vermonters Aged 6-20 Treated for Extractions, Endodontics or Restorations

24% of Medicaid-enrolled Vermonters aged 6-20 years were treated for extractions, Endodontics or Restorations in 2017.

## Percent of Medicaid-Enrolled Vermonters Aged 6-20 Treated for Extractions, Endodontics or Restorations in 2017



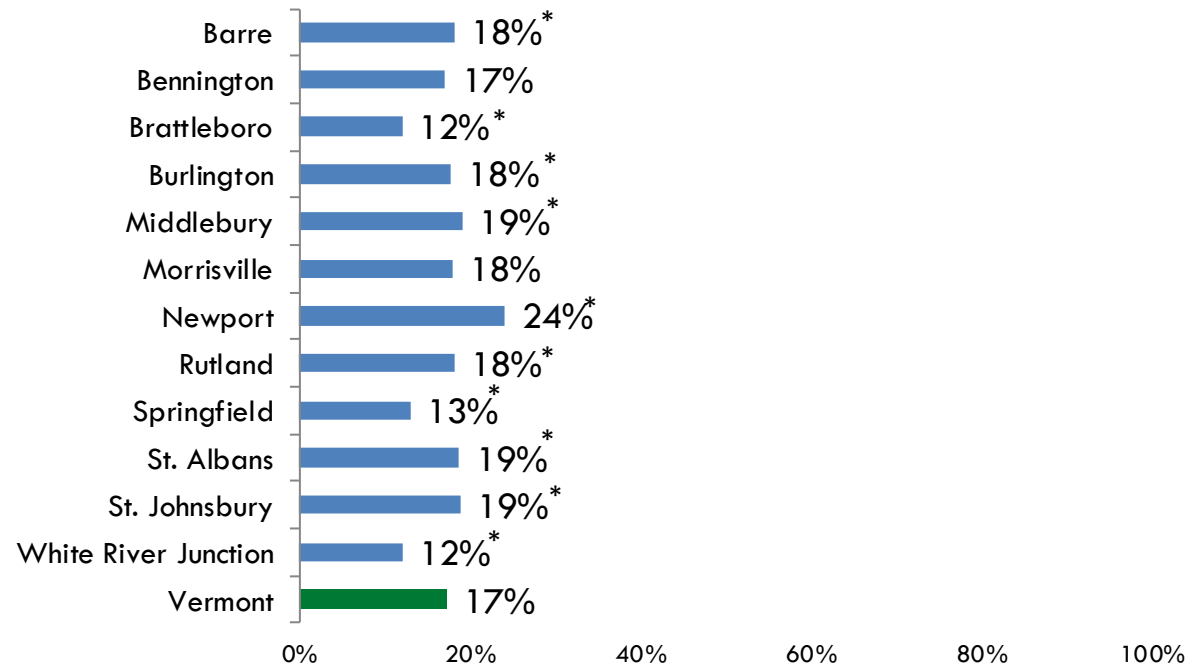
Data Source: Medicaid Claims Data

\*Significantly different from the rest of Vermont.

# Oral Health Outcomes: Medicaid-Enrolled Adults Aged 21-64 Treated for Extractions, Endodontics or Restorations

17% of Medicaid-enrolled adults aged 21-64 years were treated for extractions, Endodontics or Restorations in 2017.

## Percent of Medicaid-Enrolled Vermonters Aged 21-64 Treated for Extractions, Endodontics or Restorations in 2017



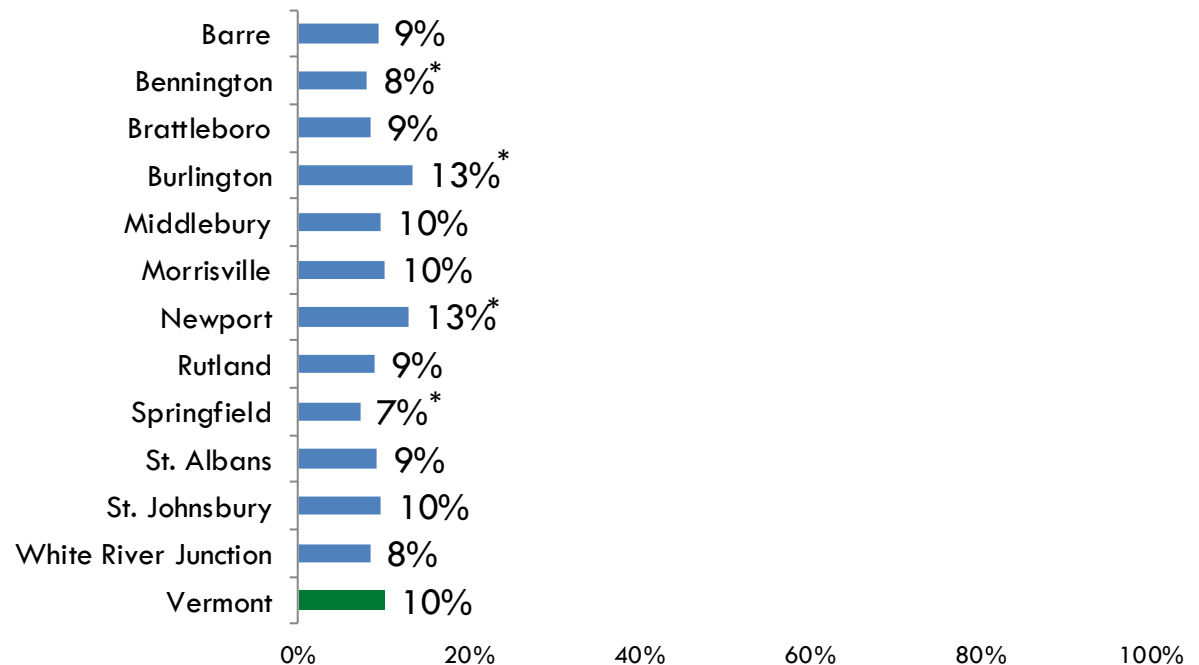
Data Source: Medicaid Claims Data

\*Significantly different from the rest of Vermont.

# Oral Health Outcomes: Medicaid-Enrolled Adults Aged 65+ Treated for Extractions, Endodontics or Restorations

10% of Medicaid-enrolled adults aged 65+ years were treated for extractions, Endodontics or Restorations in 2017.

### Percent of Medicaid-Enrolled Vermonters Aged 65+ Treated for Extractions, Endodontics or Restorations in 2017



Data Source: Medicaid Claims Data

\*Significantly different from the rest of Vermont.

# Oral Health Outcomes: General Assistance Vouchers

1,450 Vermonters utilized General Assistance Vouchers for dental services, for a total of \$1,057,717 in State Fiscal Year 2018.

## Number of Individuals who Utilized General Assistance (GA) Vouchers for Dental Services, including Amount Paid, in State Fiscal Year 2018

	Number of Individuals	Total Amount Paid	Average Paid per Individual
<b>Barre</b>	194	\$159,565	\$823
<b>Bennington</b>	194	\$129,905	\$670
<b>Brattleboro</b>	90	\$75,643	\$840
<b>Burlington</b>	190	\$114,672	\$604
<b>Middlebury</b>	62	\$34,666	\$559
<b>Morrisville</b>	96	\$56,579	\$589
<b>Newport</b>	93	\$61,885	\$665
<b>Rutland</b>	165	\$105,978	\$642
<b>Springfield</b>	72	\$58,879	\$818
<b>St. Albans</b>	132	\$111,157	\$842
<b>St. Johnsbury</b>	95	\$92,408	\$973
<b>White River Jct.</b>	67	\$56,380	\$841
<b>Vermont</b>	<b>1,450</b>	<b>\$1,057,717</b>	<b>\$729</b>

Data Source: Medicaid Claims Data

# Vermont Uniform Hospital Discharge Data Set (VUHDDS)

- VUHDDS includes hospital discharge data from hospitals in Vermont, New Hampshire, Massachusetts, and New York. However, New Hampshire data for 2010-2013 were not available at the time of this report.
  - Historically, new Hampshire Emergency Department visits were 10% of all CCS 136 Emergency Department visits (based on the average percentage from 2005-2009). This percentage varied by District Office as shown in the following slides.
- VUHDDS data are based on visits and not people. A person who is seen in the emergency department for disorders of teeth and jaw more than once in a year will be counted each time as a separate visit.
- These data only include those who sought care, and does not include those who needed care but did not seek care.

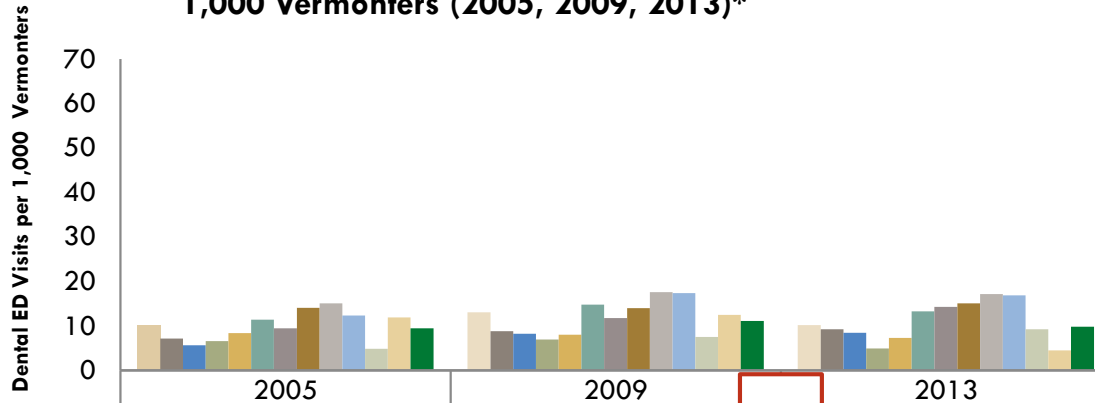
# Oral Health Outcomes: Emergency Department Visits

For Emergency Department Visits for Disorders of Teeth and Jaw:

- the rate of visits has remained fairly steady for all Vermonters from 2005 to 2013.
- in 2013, there were 10 visits per 1,000 Vermonters (a total of 6,155 visits) in Vermont, Massachusetts, and New York hospitals. However, this does not include data from New Hampshire.
- the rate of visits was highest for 25-34 year-olds, followed by 18-24 year-olds.
- the percent of visits where Medicaid was listed as their primary payer increased from 2005 to 2013 in Vermont, from 48% to 58%.

# Oral Health Outcomes: Emergency Department Visits

**Rate of Emergency Department Visits for Disorders of Teeth and Jaw per 1,000 Vermonters (2005, 2009, 2013)\***



	2005	2009	2013
Barre	10	13	10
Bennington	7	9	9
Brattleboro	6	8	8
Burlington	7	7	5
Middlebury	8	8	7
Morrisville	11	15	13
Newport	10	12	14
Rutland	14	14	15
Springfield	15	18	17
St. Albans	12	17	17
St. Johnsbury	5	8	9
White River Junction	12	12	5
Vermont	10	11	10

NH data for 2013 are not available.

\* New Hampshire data for 2010-2013 are not available at the time of this report. Historically, the percent of CCS 136 Emergency Department visits that occurred in New Hampshire hospitals was 10% for all Vermonters (based on the average percentage from 2005-2009), but varied by District Office as shown in this table.

District Office	% of Visits that Occurred in NH Hospitals (2005-2009 Average)
Barre	1%
Bennington	0%
Brattleboro	4%
Burlington	0%
Middlebury	1%
Morrisville	1%
Newport	6%
Rutland	1%
Springfield	22%
St. Albans	0%
St. Johnsbury	50%
White River Jct.	60%
<b>Vermont</b>	<b>10%</b>

Data Source: Vermont Uniform Hospital Discharge Data Set

Updated March 2016

# Oral Health Outcomes: Emergency Department Visits

**Number of Emergency Department Visits for Disorders of Teeth and Jaw (2005, 2009, 2013)\***

	Number of Visits		
	2005	2009	2013
Barre	684	868	677
Bennington	266	329	340
Brattleboro	206	299	304
Burlington	1001	1086	786
Middlebury	307	296	269
Morrisville	338	448	413
Newport	269	331	401
Rutland	891	870	916
Springfield	519	600	577
St. Albans	672	950	933
St. Johnsbury	168	263	323
White River Jct.	582	604	216
<b>Vermont</b>	<b>5903</b>	<b>6944</b>	<b>6155</b>

NH data for 2013 are not available.

\* New Hampshire data for 2010-2013 are not available at the time of this report. Historically, the percent of CCS 136 Emergency Department visits that occurred in New Hampshire hospitals was 10% for all Vermonters (based on the average percentage from 2005-2009), but varied by District Office as shown in this table.

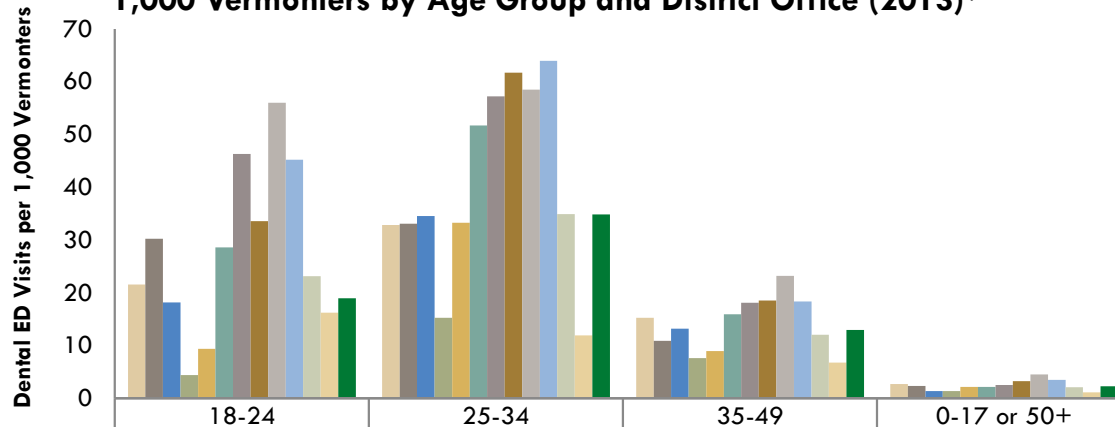
District Office	% of Visits that Occurred in NH Hospitals (2005-2009 Average)
Barre	1%
Bennington	0%
Brattleboro	4%
Burlington	0%
Middlebury	1%
Morrisville	1%
Newport	6%
Rutland	1%
Springfield	22%
St. Albans	0%
St. Johnsbury	50%
White River Jct.	60%
<b>Vermont</b>	<b>10%</b>

Data Source: Vermont Uniform Hospital Discharge Data Set



# Oral Health Outcomes: Emergency Department Visits

**Emergency Department Visits for Disorders of Teeth and Jaw per 1,000 Vermonters by Age Group and District Office (2013)\***



\* New Hampshire data for 2010-2013 are not available at the time of this report. Historically, the percent of CCS 136 Emergency Department visits that occurred in New Hampshire hospitals was 10% for all Vermonters (based on the average percentage from 2005-2009), but varied by District Office as shown in this table.

District Office	% of Visits that Occurred in NH Hospitals (2005-2009 Average)
Barre	1%
Bennington	0%
Brattleboro	4%
Burlington	0%
Middlebury	1%
Morrisville	1%
Newport	6%
Rutland	1%
Springfield	22%
St. Albans	0%
St. Johnsbury	50%
White River Jct.	60%
<b>Vermont</b>	<b>10%</b>

Data Source: Vermont Uniform Hospital Discharge Data Set

Updated March 2016

# Oral Health Outcomes: Emergency Department Visits

Visits by 25-34 year-olds comprised 41% of all ED visits for disorders of Teeth and Jaw for Vermonters, but this age group represents only 11% of Vermont's population.

## Number and Percent of Emergency Department Visits for Disorders of Teeth and Jaw by Age Group for Vermonters (2013) \*

Age Group	# of Emergency Department Visits for Disorders of Teeth and Jaw for Vermonters	% of Total Emergency Department Visits for Disorders of Teeth and Jaw for Vermonters	% of Vermont population in this age group
<b>18-24</b>	1269	21%	11%
<b>25-34</b>	2508	41%	11%
<b>35-49</b>	1516	25%	19%
<b>0-17 or 50+</b>	862	14%	59%
<b>Total</b>	<b>6155</b>	<b>100%</b>	<b>100%</b>

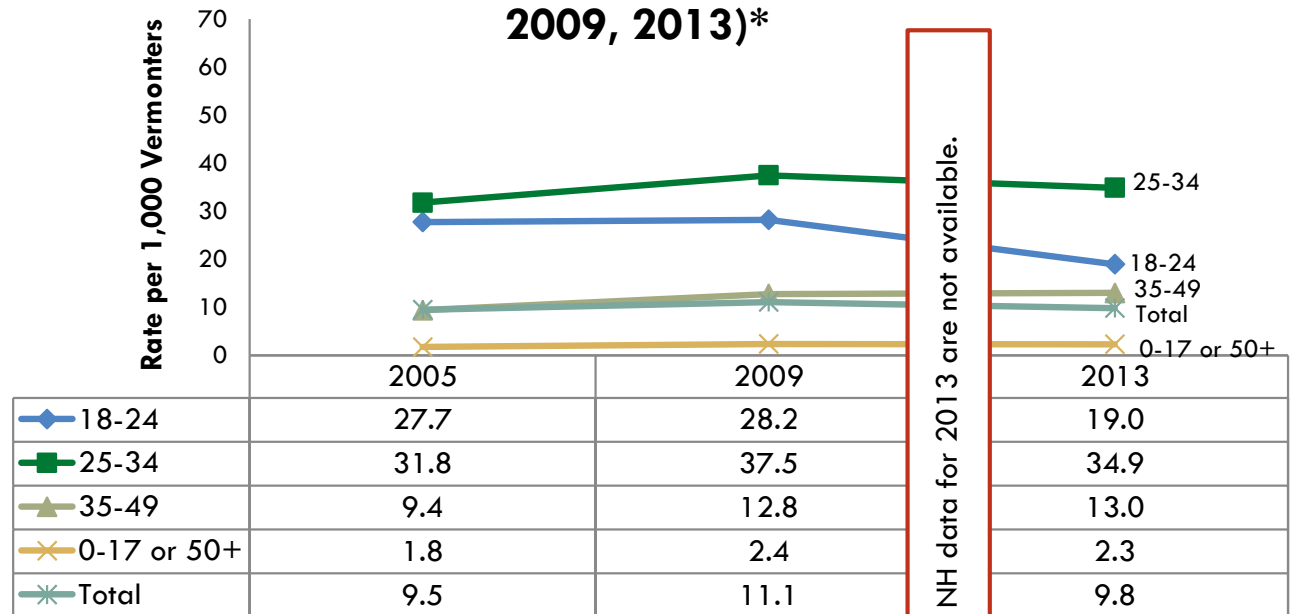
\* New Hampshire data for 2010-2013 are not available at the time of this report. Historically, the percent of CCS 136 Emergency Department visits that occurred in New Hampshire hospitals was 10% for all Vermonters (based on the average percentage from 2005-2009), but varied by District Office.

Data Source: Vermont Uniform Hospital Discharge Data Set

# Oral Health Outcomes: Emergency Department Visits

From 2005 to 2013, the rate of Emergency Department visits for Disorders of Teeth and Jaw per 1,000 Vermonters increased for all age groups, except 18-24 year olds, whose rate decreased.

**Rate of Emergency Department Visits for Disorders of Teeth and Jaw per 1,000 Vermonters (2005, 2009, 2013)\***

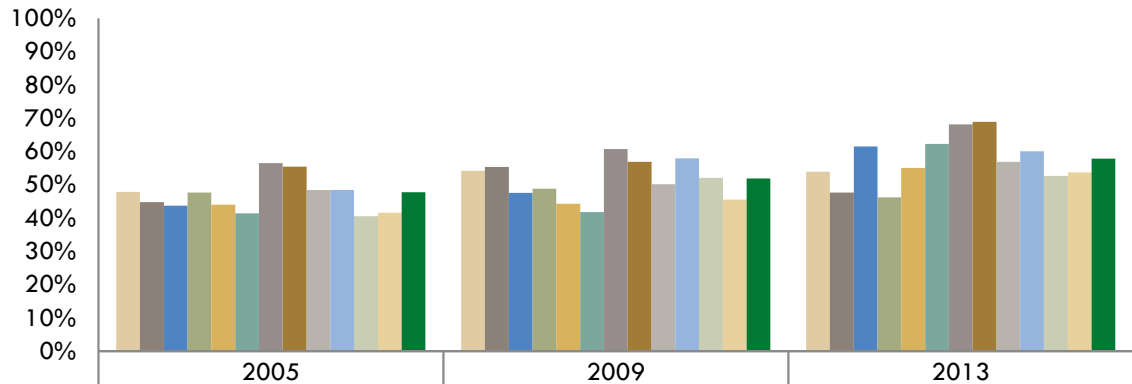


Data Source: Vermont Uniform Hospital Discharge Data Set

\* New Hampshire data for 2010-2013 are not available at the time of this report. Historically, the percent of CCS 136 Emergency Department visits that occurred in New Hampshire hospitals was 10% for all Vermonters (based on the average percentage from 2005-2009).

# Oral Health Outcomes: Emergency Department Visits

**Percent of Emergency Department Visits for Disorders of Teeth and Jaw with Primary Payer listed as Medicaid (2005, 2009, 2013)\***



	2005	2009	2013
Barre	48%	54%	54%
Bennington	45%	55%	48%
Brattleboro	44%	47%	62%
Burlington	48%	49%	46%
Middlebury	44%	44%	55%
Morrisville	41%	42%	62%
Newport	57%	61%	68%
Rutland	55%	57%	69%
Springfield	48%	50%	57%
St. Albans	48%	58%	60%
St. Johnsbury	40%	52%	53%
White River Junction	42%	46%	54%
Vermont	48%	52%	58%

\* New Hampshire data for 2010-2013 are not available at the time of this report. Historically, the percent of CCS 136 Emergency Department visits that occurred in New Hampshire hospitals was 10% for all Vermonters (based on the average percentage from 2005-2009), but varied by District Office as shown in this table.

District Office	% of Visits that Occurred in NH Hospitals (2005-2009 Average)
Barre	1%
Bennington	0%
Brattleboro	4%
Burlington	0%
Middlebury	1%
Morrisville	1%
Newport	6%
Rutland	1%
Springfield	22%
St. Albans	0%
St. Johnsbury	50%
White River Jct.	60%
<b>Vermont</b>	<b>10%</b>

Data Source: Vermont Uniform Hospital Discharge Data Set

Updated March 2016

# Summary

# Preventive and Access to Care

- Less than half of Medicaid-enrolled Vermonters received any dental services by their second birthday.
- The majority of Vermont adults report visiting the dentist in the last year, but Medicaid claims show less than a third of Medicaid-enrolled adults have seen a dentist in the last year.
- Of Medicaid-enrolled Vermonters, 59% received at least one permanent sealant by their 9<sup>th</sup> birthday and 42% at least one sealant by their 14<sup>th</sup> birthday (in the previous three years).

# Preventive and Access to Care

- In 2017, Vermont dentists were more likely to accept new non-Medicaid patients than new Medicaid patients. This same pattern was true for accepting 5 or more new patients a month.

# Preventive and Access to Care

- The percent of Vermont's population served by community public water systems who have optimally fluoridated water is lower than the United States and the Healthy Vermonters 2020 goal.



# Risk Factors

- Vermont high school students participate in risky behaviors, including:
  - 11% consuming at least one soda daily,
  - 12% consuming at least one other type of sugar-sweetened beverage daily, and
  - 5% smokeless tobacco products.

# Oral Health Outcomes

- 49% of Vermont adults aged 45-64 have had a tooth extracted due to tooth decay or gum disease.
- 37% of Vermont adults 65 and older have lost six or more teeth due to tooth decay or gum disease.

# Oral Health Outcomes

- Medicaid-enrolled Vermonters are receiving treatment for extractions, endodontics, or restorations, including:
  - ▣ 8% of children aged 1-5 (26% of these in the hospital).
  - ▣ 24% of Vermonters aged 6-20.
  - ▣ 17% of adults aged 21-64.
  - ▣ 10% of adults aged 65+.
- In State Fiscal Year 2018, 1,450 Vermont area residents utilized General Assistance Vouchers for dental services, for a total of \$105,717.

# Oral Health Outcomes

For Emergency Department Visits for Disorders of Teeth and Jaw:

- the rate of visits has remained fairly steady for all Vermonters from 2005 to 2013.
- in 2013, there were 10 visits per 1,000 Vermonters (a total of 6,155 visits). However, this does not include data from New Hampshire.
- the rate of visits is highest for 25-34 year-olds, followed by 18-24 year-olds.

# Questions?

- For more information about the Oral Health Program at the Vermont Department of Health,
  - please go to: <http://healthvermont.gov/family/dental/services.aspx>,
  - or contact Robin Miller, RDH, MPH at [Robin.N.Miller@vermont.gov](mailto:Robin.N.Miller@vermont.gov).
- For more information about Oral Health data in Vermont, please contact:
  - Denise Kall, PhD at [Denise.Kall@vermont.gov](mailto:Denise.Kall@vermont.gov).

# Data Notes - BRFSS

- Behavioral Risk Factor Surveillance System (BRFSS) Survey Questions used in the above analyses included:
- "How long has it been since you last visited a dentist or a dental clinic for any reason? Include visits to dental specialists, such as orthodontics. [Responses: Within the past year (anytime less than 12 months), Within the past 2 years (1 year but less than 2 years), Within the past 5 years (2 years but less than 5 years ago), 5 or more years ago, and Never]"
- "How many of your teeth have been removed because of tooth decay or gum disease? Include teeth lost to infection, but do not include teeth lost for other reasons, such as injury or orthodontics. [Responses: 1 to 5, 6 or more but not all, All, and None]"
- For more information on the Behavioral Risk Factor Survey (BRFSS), please see: <http://www.healthvermont.gov/health-statistics-vital-records/population-health-surveys-data/brfss>.

# Data Notes - BRFSS

- Percentages that are significantly different are noted. If a difference is not noted, it is not significantly different.
- The 2014 and 2016 combined data for Offices of Local Health are compared to the 2016 state data.
- Confidence Intervals were used for statistical comparisons between the state and the various sub-geographies. A confidence interval represents the range in which a parameter estimate would fall, which is calculated based on the observed data. For this analysis, we used a 95% confidence interval, meaning that we are 95% confident that the true value of the parameter being examined falls within the specified confidence interval. Statistical significance is assessed by comparing the confidence intervals of different groups. If the confidence intervals from two groups, such as that for the state and a specific county, do not overlap we consider the estimates to be significantly different from one another.

# Data Notes - BRFSS

- In U.S. data, age adjustment is used for comparison of regions with varying age breakdowns. In order to remain consistent with the methods of comparison at a national level, statistics in Vermont were age adjusted. The estimates were adjusted based on the proportional age breakdowns of the standard U.S. population in 2000. For more detailed information on age adjustment visit <http://www.cdc.gov/nchs/data/statnt/statnt20.pdf>.
- Note that beginning in 2011 the CDC implemented changes to the BRFSS weighting methodology in order to more accurately represent the adult population. In 2011 and later, weights are calculated using an iterative proportional fitting (or "raking") methodology. This allows the weights to be calculated using a smaller sample size, adjusts for more demographic variables, and incorporates cell phone interview data into estimates. While these adjustments make the calculations more representative of the population, the changes in methodology also limit the ability to compare results from 2011 forward with those from previous years. The Vermont Department of Health recommends that comparisons between BRFSS data from 2011 forward and earlier years be made with caution. Statistical differences may be due to methodological changes, rather than changes in opinion or behavior.



# Data Notes – Medicaid Claims Data

- This analysis was conducted using Vermont’s Medicaid Claims data.
- The Office of Local Health is based on the recipient’s most recent residence while Medicaid-enrolled, approximated based on zip codes.
- Significant differences between Offices of Local Health and the rest of Vermont are considered significant at the .05 level using a Chi-Square test.
- For the analyses that include more than one year of data (sealants and dental services by age 2):
  - These include only Vermonters who were Medicaid-enrolled (including Medicaid Managed Care and Traditional Medicaid aid categories) for 95% of the analysis timeframe.
  - Age was calculated as of the time of their birthday in 2017.
- For all other analyses using Medicaid Claims Data (except for GA vouchers):
  - Vermonters who were Medicaid-enrolled (including Medicaid Managed Care and Traditional Medicaid aid categories) and have been continuously enrolled in Medicaid for three consecutive months were included in the analysis.
  - Age was calculated as of December 31, 2017.
- GA vouchers included any Vermonters who had paid claims within the FY.

# Data Notes – Medicaid Claims Data

**Vermonters can appear in more than one of these numbers.**

<p>% of Medicaid-enrolled Vermonters who had a preventive visit</p>	<p>This includes Vermonters who had paid claims for any one of the following preventive procedure codes (CPT D0145, between D1000 and D1999, and 99188). If a Vermonter received one of these procedures more than once in this timeframe, he/she only appears in the number once.</p>
<p>% of Medicaid-enrolled Vermonters who received any dental services by a dental provider</p>	<p>This includes Vermonters who had paid dental claims for any one of the following dental procedure codes (CPT between D0120 and D9999) filed on a dental claim form (claim type L). If a Vermonter received one of these procedures more than once in this timeframe, he/she only appears in the number once.</p>
<p>% of Medicaid-Enrolled Children who Received a Permanent Sealant in the Last 3 years</p>	<p>This includes Vermonters who had a claim for a sealant on a permanent molar tooth in the last 3 years before their 9<sup>th</sup> or 14<sup>th</sup> birthday. Permanent molars are teeth numbered 2, 3, 14, 15, 18, 19, 30, 31, 1, 16, 17, 32. If a Vermonter received one of these procedures more than once in this timeframe, he/she only appears in the number once.</p>
<p>% of Medicaid-enrolled Vermonters treated for extractions, Endodontics or Restorations</p>	<p>This includes Vermonters who had paid claims for any one of the following procedures: dental restorations (CPT between D2000 and D2999), endodontic procedures (CPT between D3000 and D3999), or dental extractions (CPT between D7111 and D7250). Preventative visits are not included. If a Vermonter received one of these procedures more than once in this timeframe, he/she only appears in the number once. A Vermonter can appear in both the office percentage and the hospital percentage for dental treatment. Each visit is counted as hospital or office visit, but never both for the same date of service.</p>
<p>Number of Individuals who Utilized General Assistance (GA) Vouchers for Dental Services</p>	<p>This includes Vermonters who had paid claims within the FY for a State Category of Service Code for Dental between '0801' and '0899' and a funding source code C (General Assistance (GA) OVHA).</p>

# Data Notes - YRBS

- Youth Risk Behavior Survey (YRBS) questions used in the above analyses included:
  - "During the past 7 days, how many times did you drink a bottle or glass of plain water? (Count tap, bottled, and unflavored sparkling water.) [Responses: I did not drink water during the past 7 days; 1 to 3 times during the past 7 days; 4 to 6 times during the past 7 days; 1 time per day; E. 2 times per day; 3 times per day; 4 or more times per day]"
  - "During the past 7 days, how many times did you drink a can, bottle, or glass of soda or pop, such as Coke, Pepsi, or Sprite? (Do not count diet soda or diet pop.) [Responses: I did not drink soda or pop during the past 7 days; 1 to 3 times during the past 7 days; 4 to 6 times during the past 7 days; 1 time per day; 2 times per day; 3 times per day; 4 or more times per day]"
  - "During the past 7 days, how many times did you drink a can, bottle, or glass of a sugar-sweetened beverage such as sports drinks (for example, Gatorade or PowerAde), energy drinks (for example, Red Bull or Jolt), lemonade, sweetened tea or coffee drinks, flavored milk, Snapple, or Sunny Delight? (Do not count soda or pop or 100% fruit juice.) [Responses: I did not drink these sugars-sweetened beverages during the past 7 days; B. 1 to 3 times during the past 7 days; 4 to 6 times during the past 7 days; 1 time per day; 2 times per day; 3 times per day; 4 or more times per day]"

# Data Notes - YRBS

- Youth Risk Behavior Survey (YRBS) Questions used in the above analyses included (continued):
  - “During the past 30 days, on how many days did you use chewing tobacco snuff, dip, snus, or dissolvable tobacco products, such as Redman, Levi Garrett, Beechnut, Skoal, Skoal Bandits, Copenhagen, Camel Snus, Marlboro Snus, General Snus, Ariva, Stonewall, or Camel Orbs? (Do not count any electronic vapor products.) [Responses: 0 days; 1 or 2 days; 3 to 5 days; 6 to 9 days; 10 to 19 days; 20 to 29 days; All 30 days]”
    - NOTE: In 2017, the number of smokeless tobacco products and examples used in the question were revised to include dissolvable tobacco products and included products such as Redman, Levi Garrett, Beechnut, Skoal, Skoal Bandits, Copenhagen, Camel Snus, Marlboro Snus, General Snus, Ariva, Stonewall, or Camel Orbs. This change interrupts the smokeless tobacco use trend line. Caution should be used when comparing data from previous years.

# Data Notes - YRBS

- Confidence Intervals were used for statistical comparisons between the state and the various sub-geographies. A confidence interval represents the range in which a parameter estimate would fall, which is calculated based on the observed data. For this analysis, we used a 95% confidence interval, meaning that we are 95% confident that the true value of the parameter being examined falls within the specified confidence interval. Statistical significance is assessed by comparing the confidence intervals of different groups. If the confidence intervals from two groups, such as that for the state and a specific county, do not overlap we consider the estimates to be significantly different from one another.
- For more information on the Youth Risk Behavior Survey (YRBS) please see, [www.healthvermont.gov/yrbs](http://www.healthvermont.gov/yrbs)

# Data Notes – Dentist Census

- 100% of Vermont dentists responded to this survey. Statistical tests for significant differences were not conducted. All differences are actual differences at the time of this survey. Differences that are plus or minus 10% of the Vermont percentage are noted in the text.
- For more information on the Dentist Census, see:  
<http://healthvermont.gov/research/HlthCarePrvSrvys/HealthCareProviderSurveys.aspx>

# Data Notes - Emergency Department Visits for Disorders of Teeth and Jaw for Vermonters from 2009 and 2013, by Principal Diagnosis

The Primary Diagnosis Clinical Classification Software (CCS) Category 136, Disorders of Teeth and Jaw, includes the following diagnoses:

Principal Diagnosis	2009	NH data for 2013 are not available.	2013*
520: Diseases of tooth development and eruption	99		67
521: Diseases of hard tissue of teeth	1,074		1,138
522: Diseases of pulp and periapical tissues	1,616		2,026
523: Gingival and periodontal diseases	161		126
524: Dentofacial anomalies, including malocclusion	200		133
525: Other diseases and conditions of the teeth and supporting structures	3,613		2,529
526: Diseases of the jaw	181		38
78492: Jaw pain			99
<b>Total</b>	<b>6,944</b>		<b>6,156</b>
<i>Data Source: Vermont Uniform Hospital Discharge Data Set</i>			

\* New Hampshire data for 2010-2013 are not available at the time of this report. Historically, the percent of CCS 136 Emergency Department visits that occurred in New Hampshire hospitals was 10% for all Vermonters (based on the average percentage from 2005-2009), but varied by District Office.

# Data Notes - Additional Information

- For more information on the Vermont Uniform Hospital Discharge Data Set, see: <http://healthvermont.gov/research/hospital-utilization/>