Asthma Data Pages

2017 BRFSS and 2015 ACBS

VERMONT
DEPARTMENT OF HEALTH

Division of Health Surveillance;
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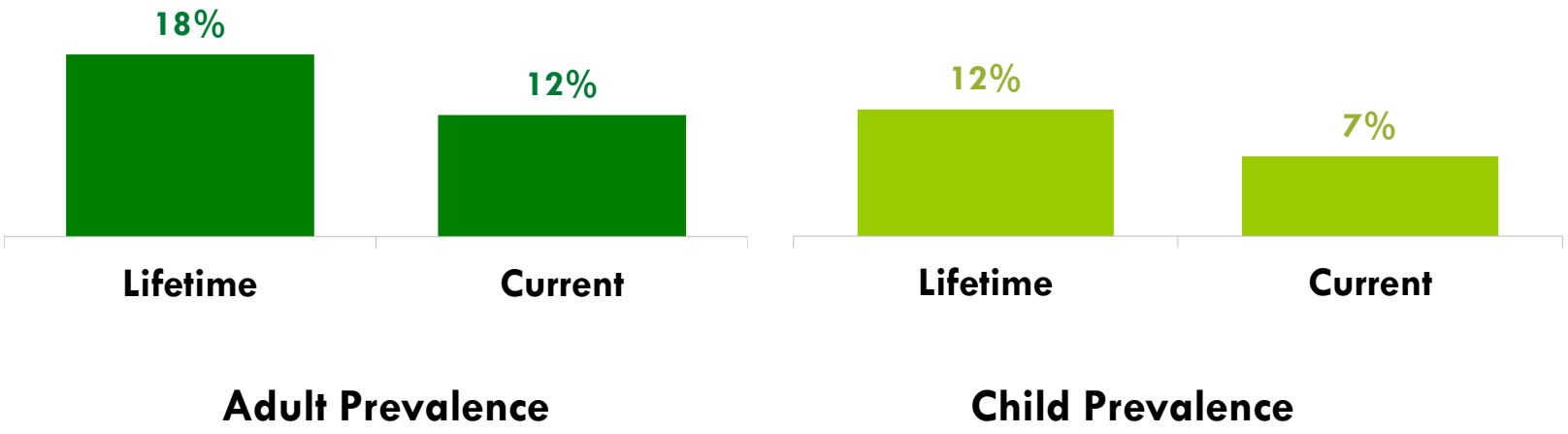
Contents

Asthma Prevalence

Asthma Prevalence In Vermont

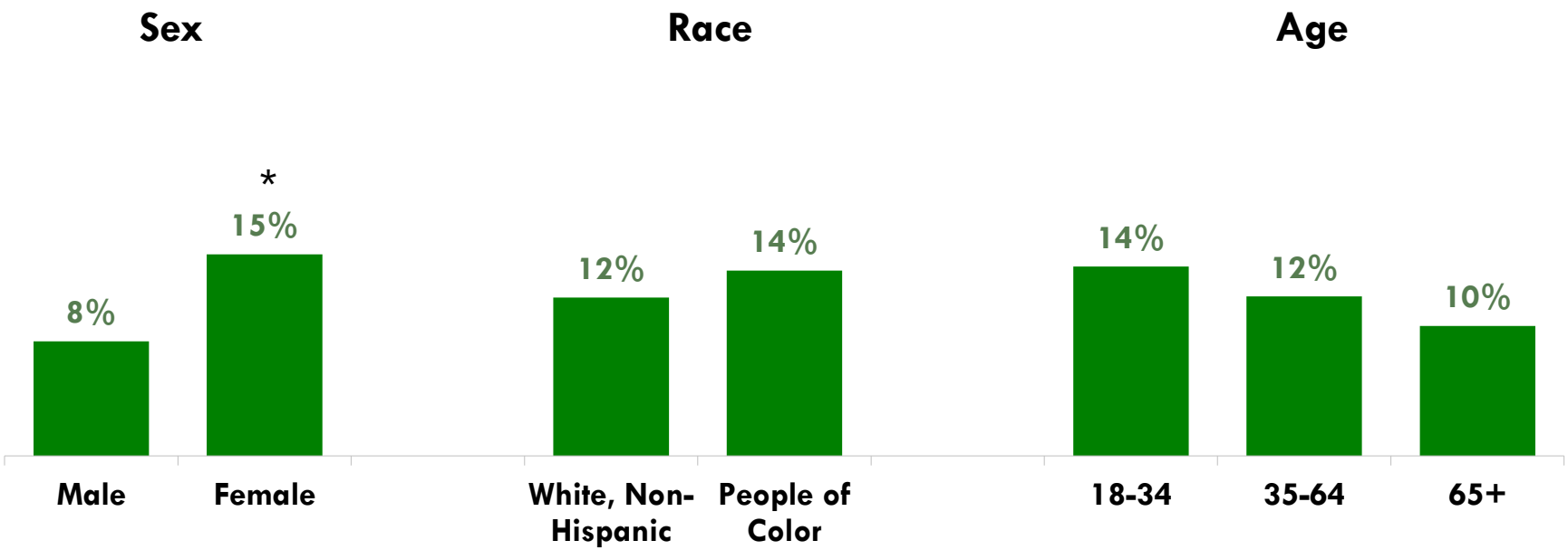
- In 2017, 12% of adult Vermonters reported having current asthma. This equates to approximately 59,000 adult Vermonters with current asthma. Eighteen percent of adult Vermonters reported being diagnosed with asthma at some point in their lifetime.

- One in 14 children in Vermont (7%) had current asthma in 2017, which equates to approximately 8,200 children.



Asthma Prevalence among Adults

Vermont women had a significantly higher prevalence of current asthma compared to men. Asthma prevalence did not differ significantly across racial groups or age groups.

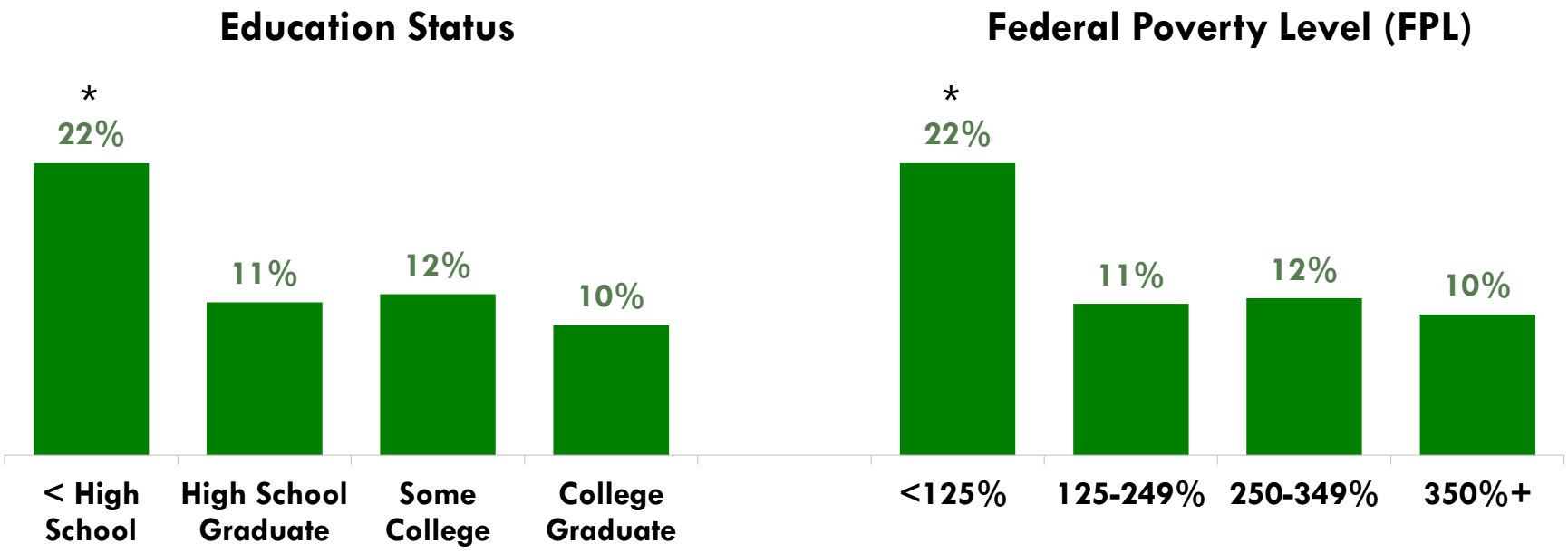


* Group is significantly different from other groups within demographic breakdown

Vermont Department of Health - Source: 2017 VT BRFSS

Adult Asthma Prevalence by Education and Income

Adults that did not graduate from high school and those with a household income closer to the federal poverty level (FPL < 125%) had significantly higher rates of current asthma which were approximately twice that of Vermonters with higher levels of education or household income.

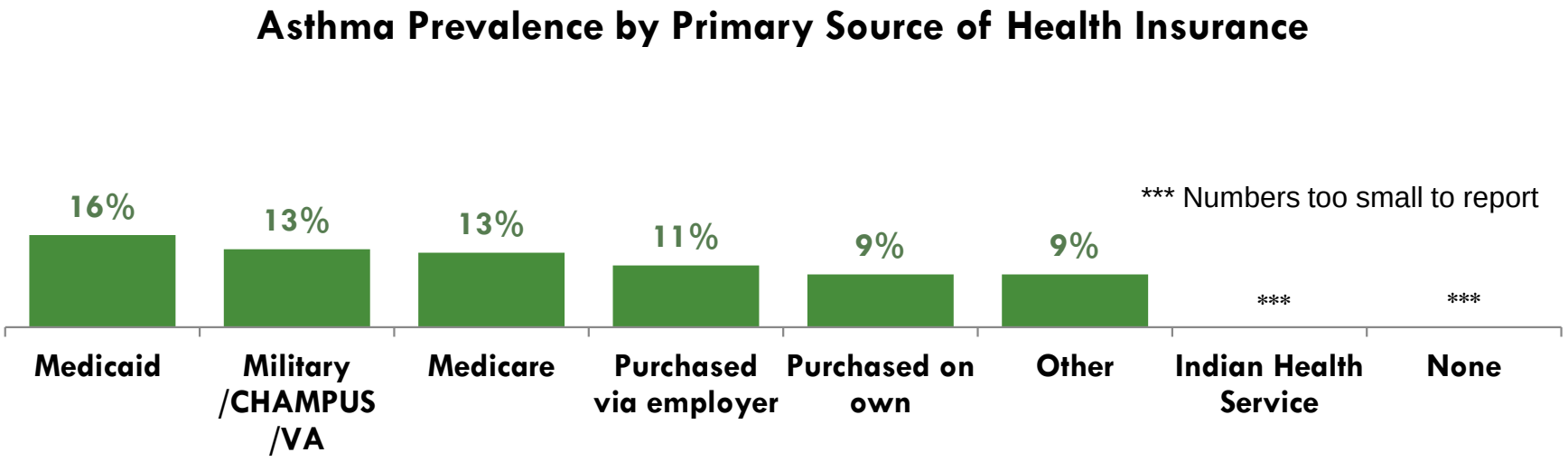


* Group is significantly different from other groups within demographic breakdown

Vermont Department of Health - Source: 2017 VT BRFSS

Asthma Prevalence by Health Insurance

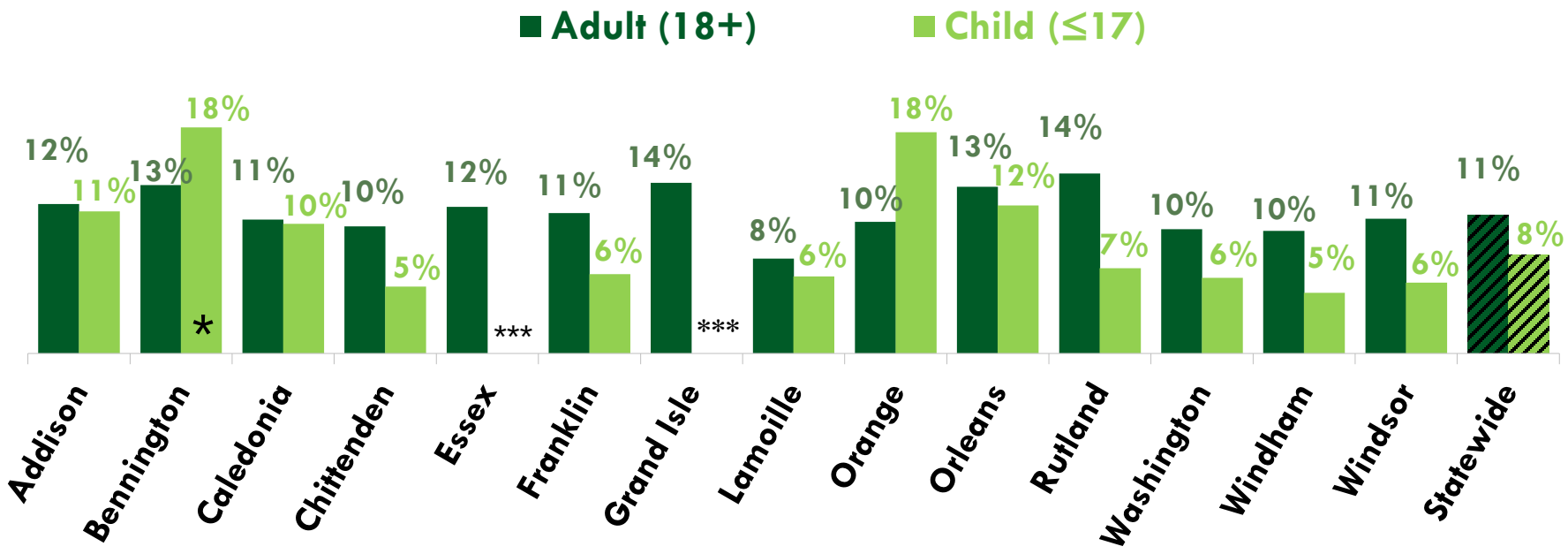
Asthma prevalence among those insured by Medicaid (16%) was significantly higher as compared to those with coverage purchased through an employer.



Vermont Department of Health - Source: 2017 VT BRFSS.

Adult and Child Asthma Prevalence by County

- The prevalence of current asthma among adult Vermonters ranged from 8% in Lamoille county to 14% in Grand Isle and Rutland counties.
- Among children, asthma prevalence ranged from 5% in Chittenden and Windham counties to 18% in Bennington and Orange county. The child asthma prevalence in Bennington was significantly higher than the statewide rate.

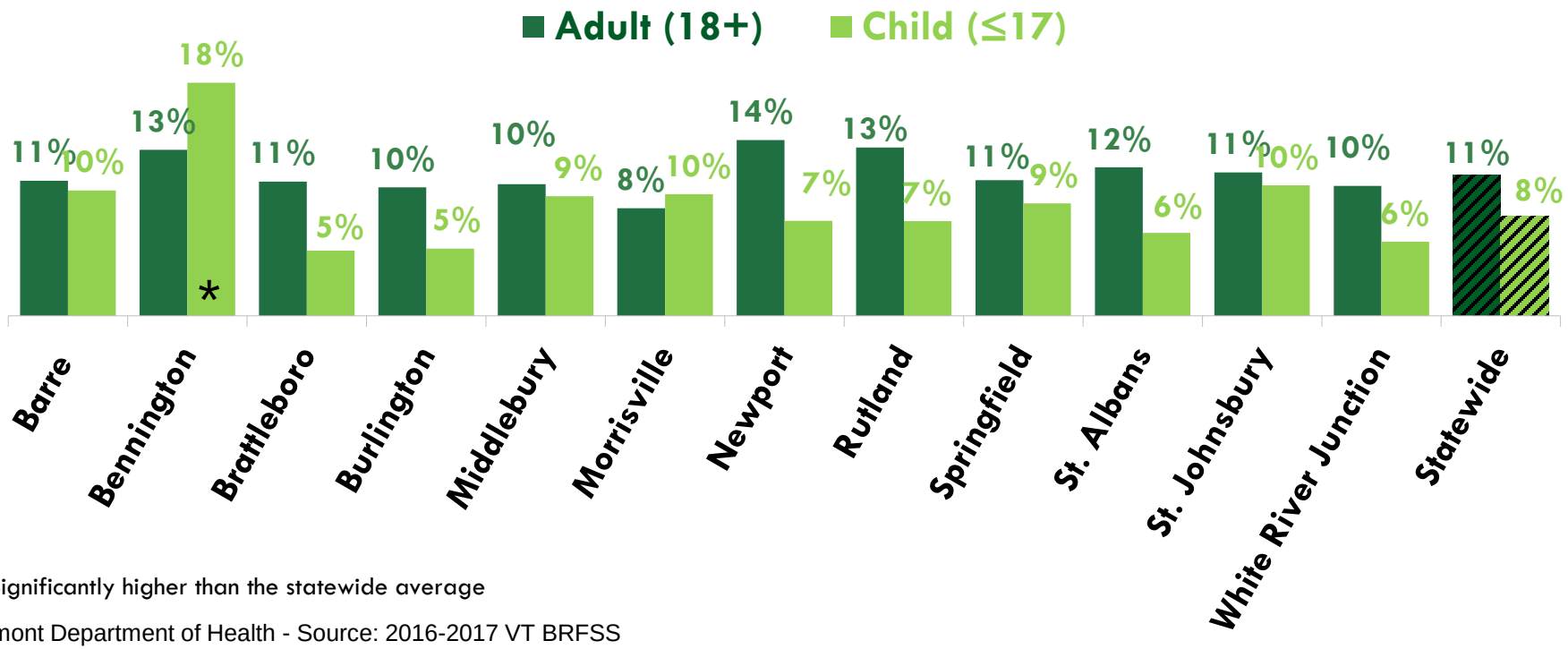


* Significantly different from state rate, *** sample size too small to report.

Vermont Department of Health - Source: 2016-2017 VT BRFSS

Adult and Child Asthma Prevalence by District Office

- The prevalence of current asthma in <u>adult</u> Vermonters ranged from 8% at the Morrisville District Office (DO) to 14% in Newport. There were no significant differences between current asthma prevalence by DO and the statewide prevalence for adults.
- <u>Child</u> asthma prevalence ranged from 5% in Brattleboro and Burlington DOs to 18% in the Bennington DO. The child asthma prevalence in Bennington was significantly higher than the statewide rate.

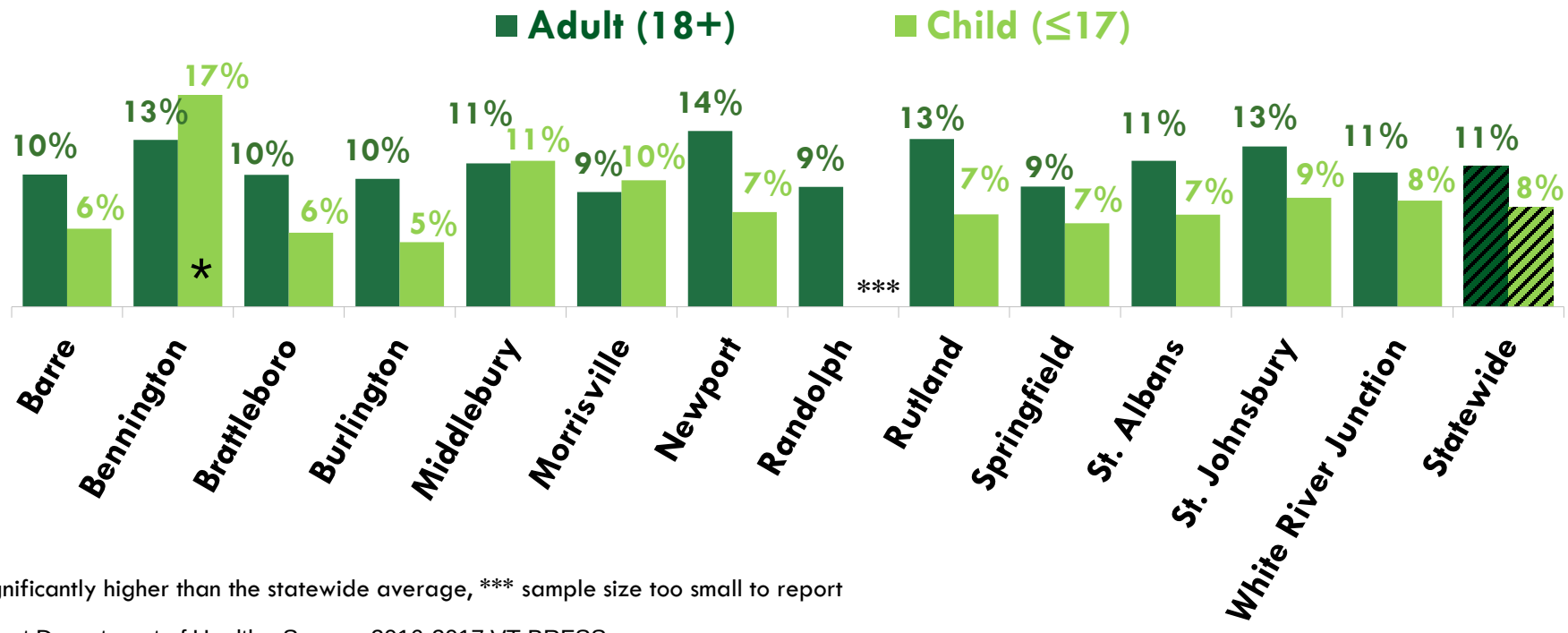


* Significantly higher than the statewide average

Vermont Department of Health - Source: 2016-2017 VT BRFSS

Adult and Child Asthma Prevalence by HSA

- The prevalence of current asthma in adult Vermonters ranged from 9% in the Morrisville, Randolph, and Springfield Hospital Service Area (HSA) to 14% in the Newport HSA.
- Child asthma prevalence ranged from 5% in the Burlington HSA to 17% in the Bennington HSA. Child asthma prevalence in Bennington was significantly higher than the statewide rate.

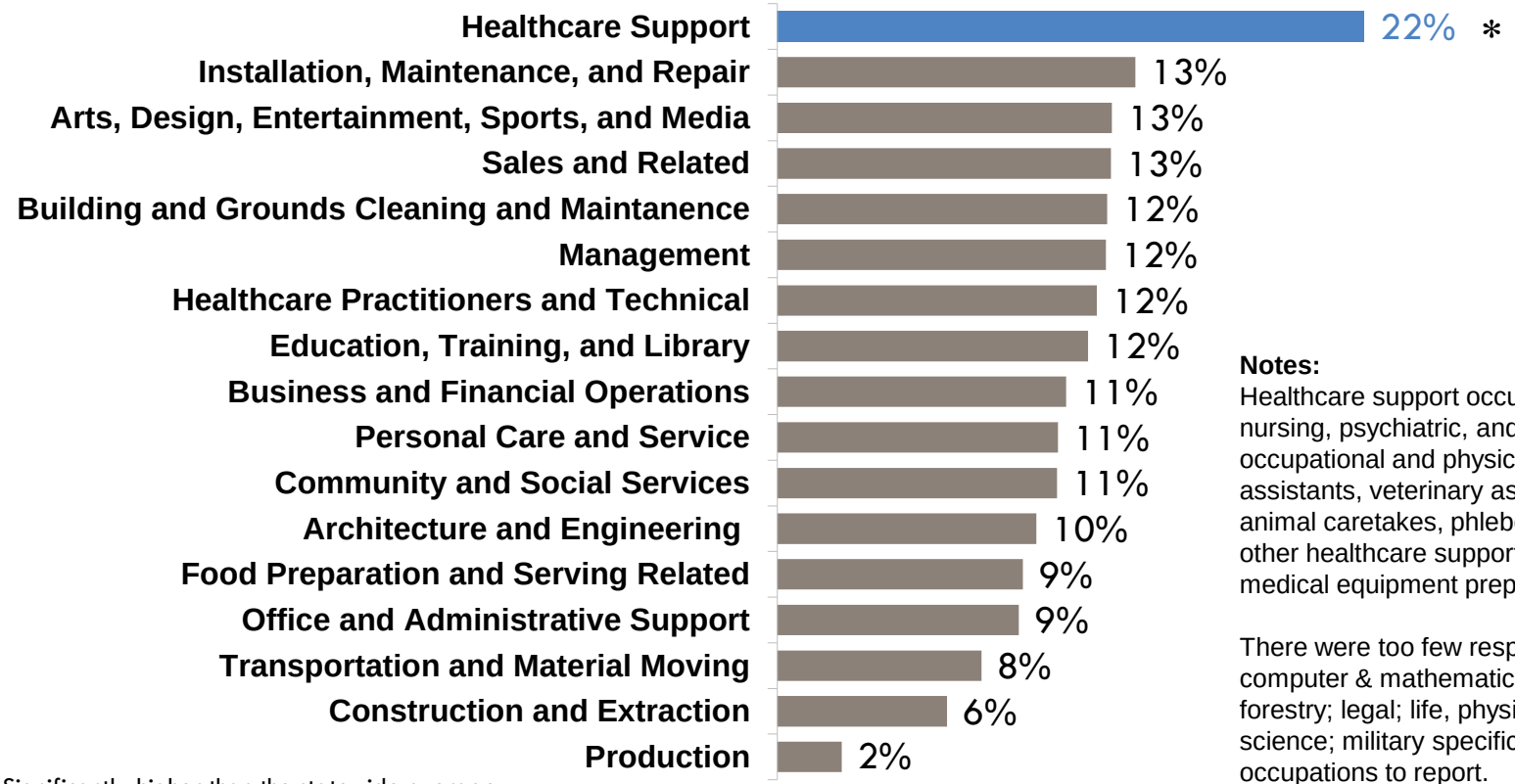


* Significantly higher than the statewide average, *** sample size too small to report

Vermont Department of Health - Source: 2016-2017 VT BRFSS

Asthma Prevalence by Occupations

- In 2014, survey respondents were asked what occupation they worked in. Current asthma prevalence ranged from 2-22% across occupations.
- Those working in healthcare support had a significantly higher asthma prevalence (22%) compared to the 2014 statewide average (11%); approximately 1,600 people.



Notes:
Healthcare support occupations include nursing, psychiatric, and home health aides, occupational and physical therapist assistants, veterinary assistants, laboratory animal caretakes, phlebotomists, and all other healthcare support workers including medical equipment preparers.

There were too few respondents working in computer & mathematical; farming, fishing, & forestry; legal; life, physical, and social science; military specific, or protective service occupations to report.

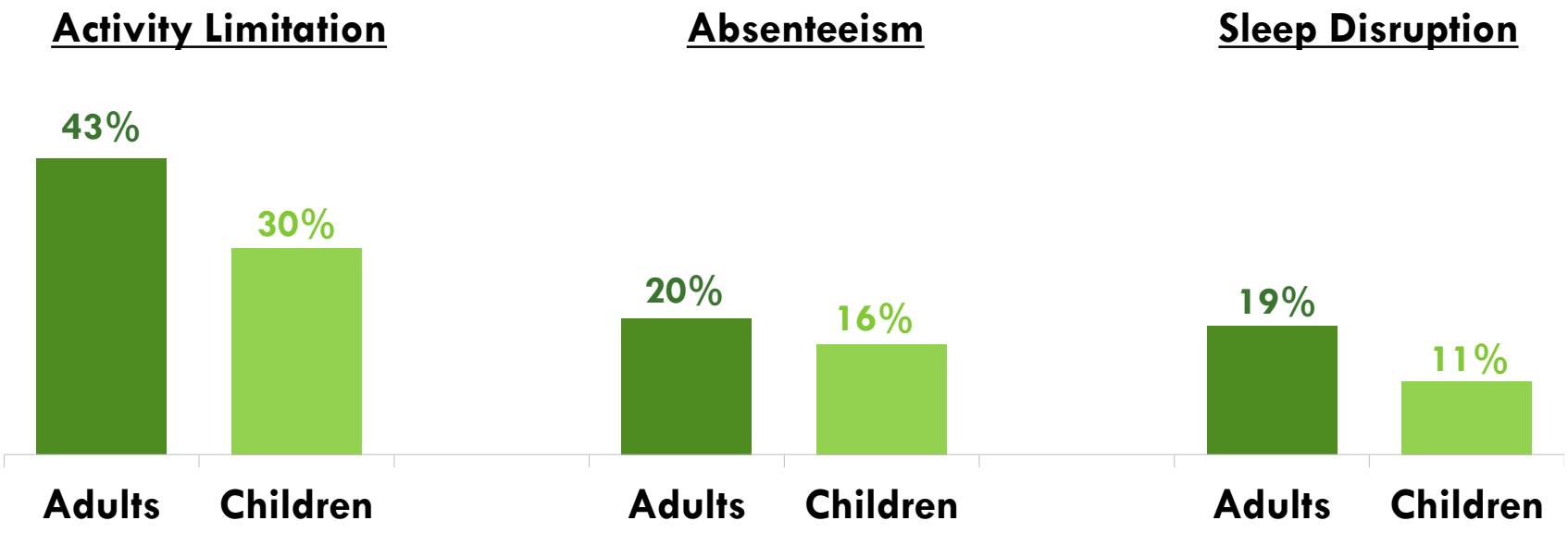
* Significantly higher than the statewide average

Vermont Department of Health - Source: BRFSS, 2014,

Asthma Morbidity

Quality of Life Among Those with Current Asthma

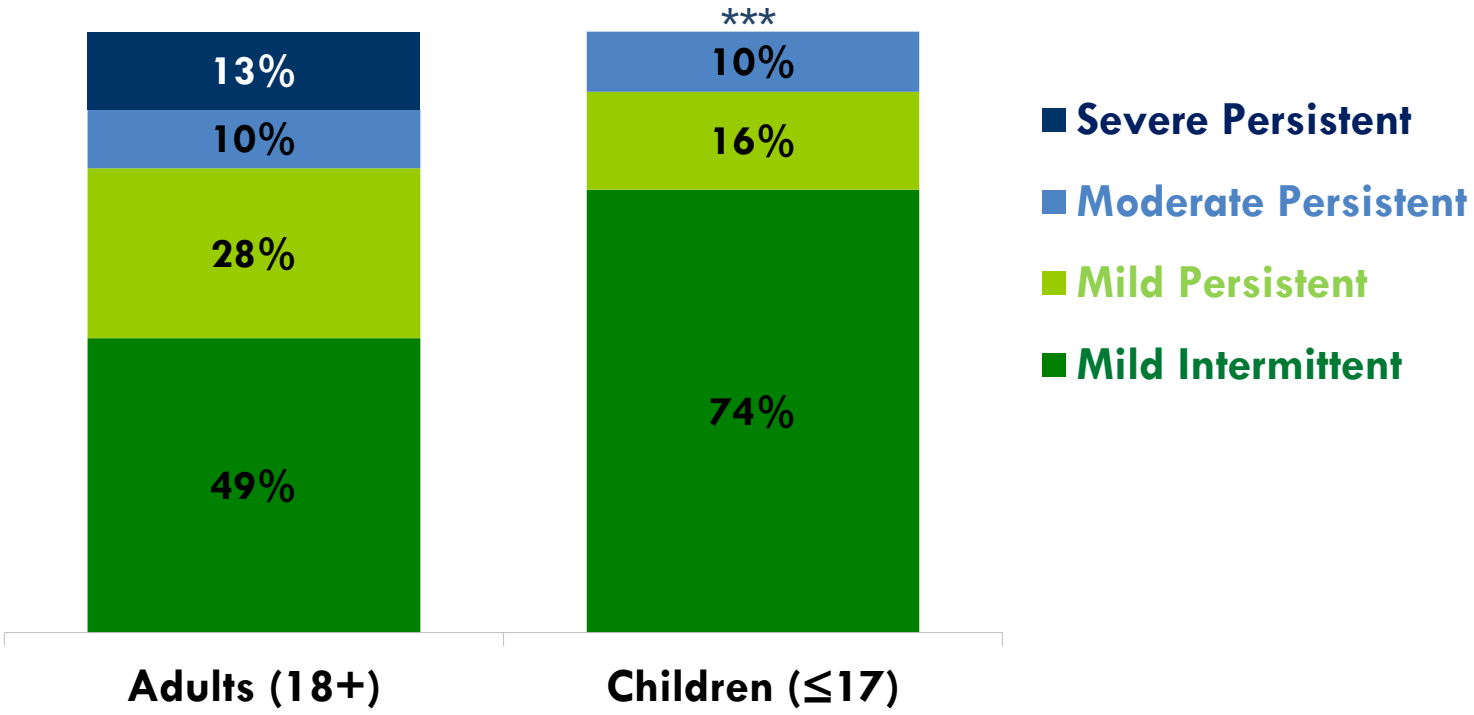
- More than four in ten adults (43%) and three in ten youth indicated their daily activities were at least a little limited by asthma.
- One in five adults with asthma reported missing at least one day of work in the past year due to their asthma and one in six (16%) school-aged youth with asthma missed school at least once in the past year because of their asthma.
- Among Vermonters with current asthma, 19% of adults and 11% of youth reported that symptoms made it difficult for them to sleep on one or more nights in the past month.



Vermont Department of Health, Source: Asthma Callback Survey (ACBS), Adult 2015, Child 2015/2016-Preliminary

Quality of Life - Asthma Severity

Approximately half of adults and seven in ten youth with current asthma had mild and intermittent asthma. One out of four adults had either moderate or severe persistent asthma. One out of ten youth had moderate persistent asthma.



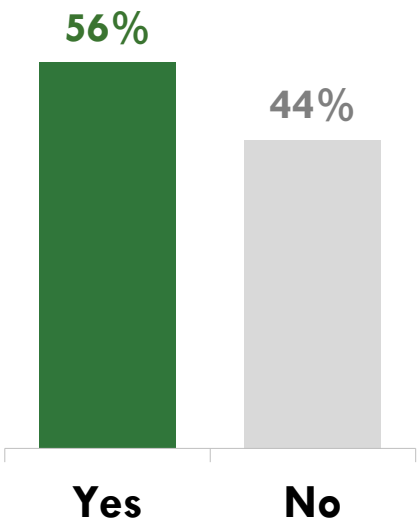
*** too few respondents to report severe persistent asthma for children.

Vermont Department of Health, Source: Adult ACBS 2015, Child ACBS 2015/2016-Preliminary

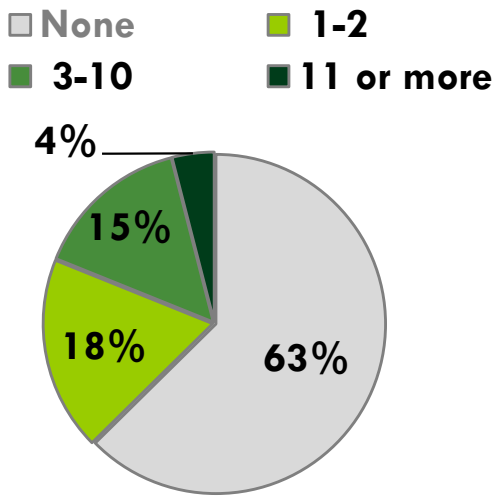
Asthma Exacerbations- Adult

- Over half (56%) of Vermont adults with current asthma experienced an asthma exacerbation within the past year while 37% had at least one exacerbation within the last three months.
- One in five (19%) adults with current asthma had three or more episodes of asthma exacerbation within the last three months. The duration of the last asthma exacerbation ranged from minutes to hours for the majority of adults with current asthma (86%) while 14% of respondents experienced exacerbations lasting days to weeks.

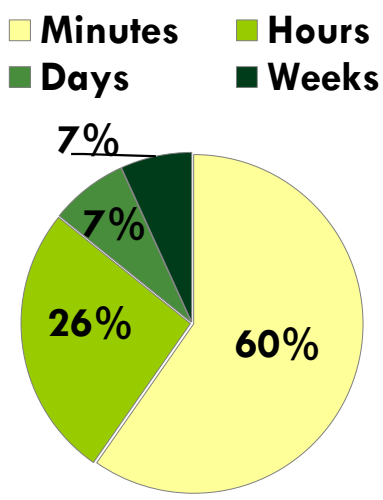
Asthma Exacerbation in Past Year?



Number of Asthma Exacerbations in Past 3 Months



Duration of Last Asthma Exacerbation



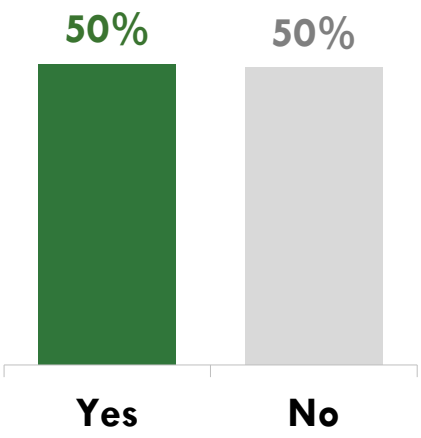
Vermont Department of Health, Source: Adult ACBS, 2015

Asthma Exacerbations- Child

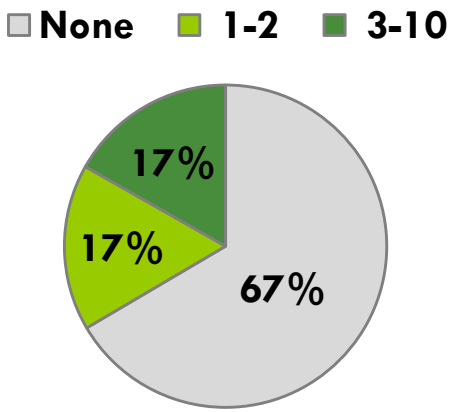
- One out of two children with current asthma experienced an asthma exacerbation within the past year, while 17% of children with current asthma had three or more episodes of asthma exacerbation within the last three months.
- There were too few respondents to report the duration of the last asthma exacerbation among children.

Children with Current Asthma (≤ 17 years of age)

Asthma Exacerbation within Past 12 Months?



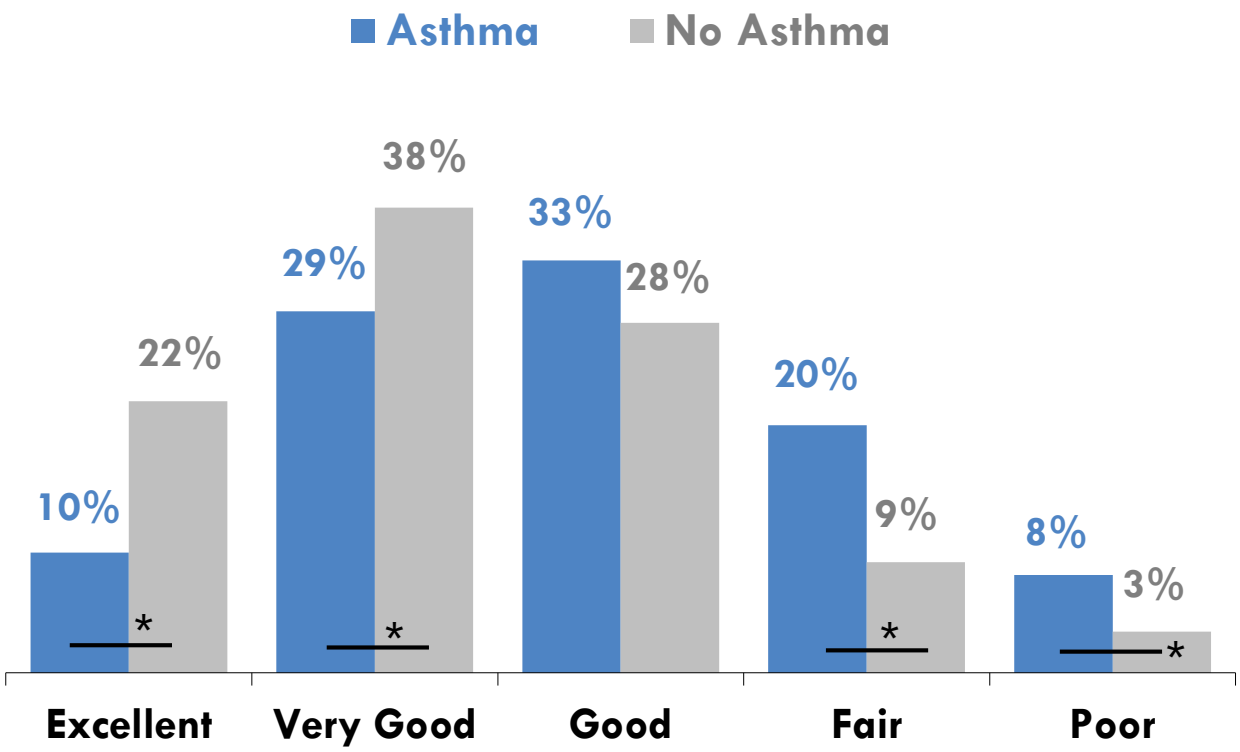
Number of Asthma Exacerbations within Past 3 Months



Vermont Department of Health, Source: Child ACBS 2015/2016-Preliminary

Asthma and Overall Health Status

Adults with current asthma were significantly less likely to rate their health as excellent or very good and more likely to rate their health as fair or poor as compared to adults that do not have asthma.

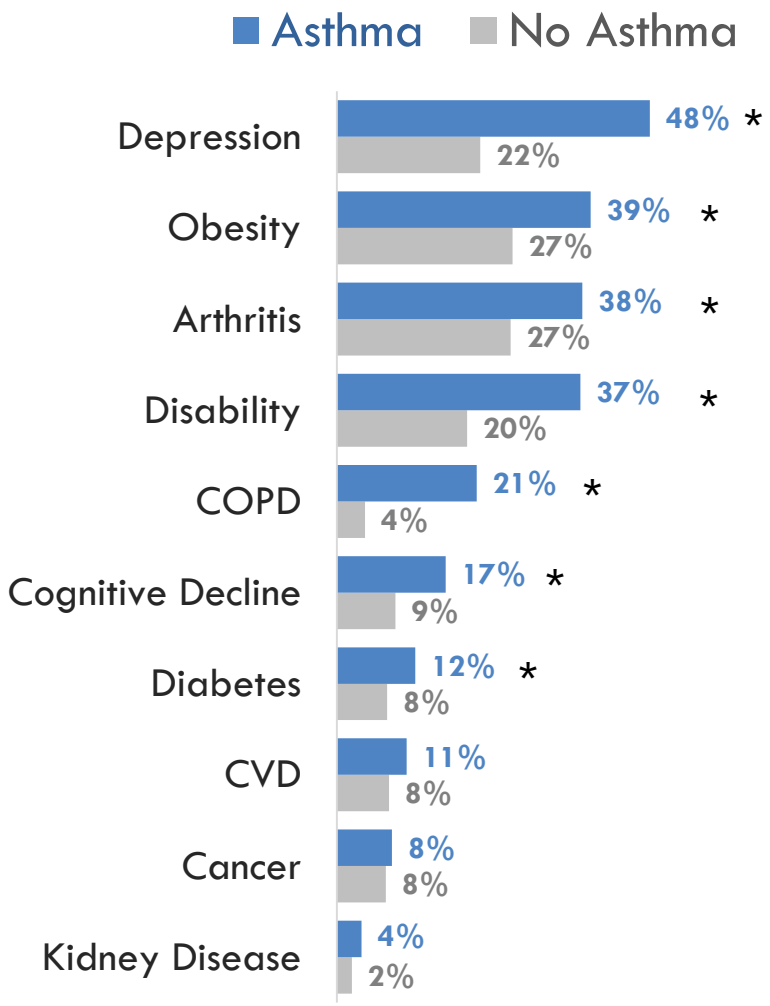


* Indicates significant difference between groups.

Vermont Department of Health - Source: BRFSS 2017

Vermonters with Asthma Have Increased Rates of Chronic Conditions

Those with current asthma were significantly more likely to report depression, obesity, arthritis, disability, chronic obstructive pulmonary disease (COPD), cognitive decline, and diabetes than those without asthma.



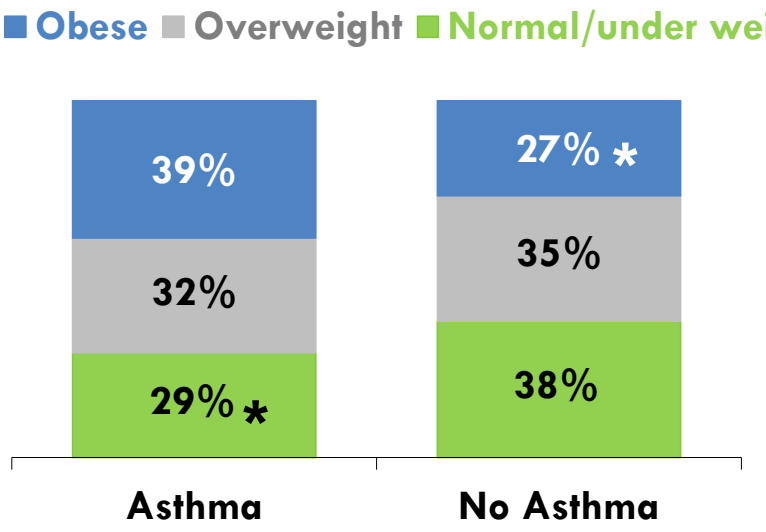
* Indicates significant difference between groups.

Vermont Department of Health - Source: BRFSS 2016 (cognitive decline & disability), 2017

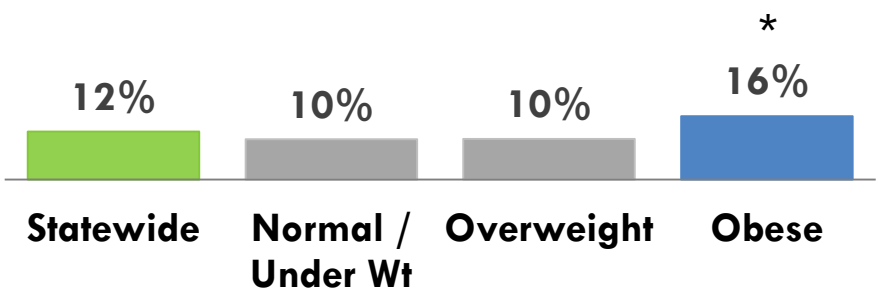
Asthma and Body Mass Index

- Seventy-one percent of Vermont adults with current asthma were overweight or obese.
- Those with asthma were significantly more likely to be obese and less likely to be normal/under weight than those without asthma.
- Those who are obese had a significantly higher rate of asthma (16%) compared to the statewide rate (12%).

Body Mass Index ‡



Current Asthma Prevalence by BMI



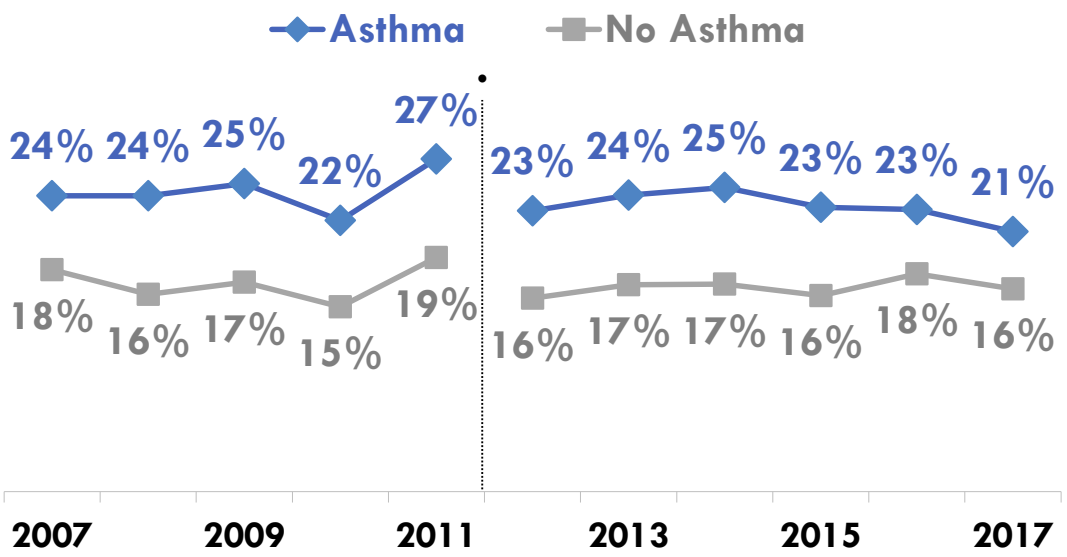
Vermont Department of Health - Source: BRFSS 2017; ‡Data are age adjusted to the 2000 U.S. standard population; * Significantly higher than state rate.

Asthma Risk Factors

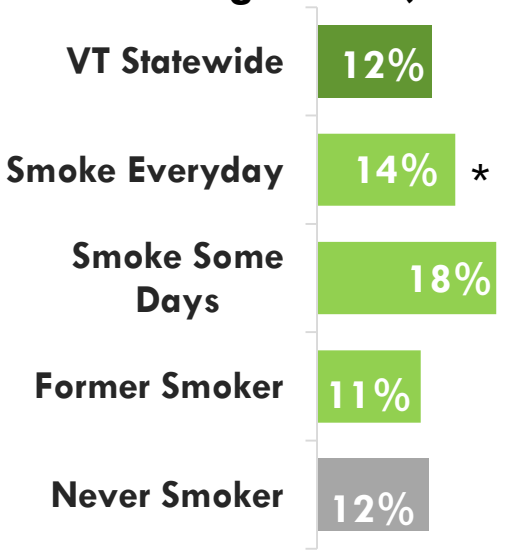
Smoking is a Strong Risk Factor for Asthma

- Breaking the trend since 2007, the 2017 smoking rate among adult Vermonters with current asthma was not significantly higher compared to those without asthma.
- Those who smoke everyday had significantly higher rates of asthma compared to former smokers and those who have never smoked. Those who smoked "some days" represented a small number of people and this group was not significantly different from the others.

Current Cigarette Use among VT Adults‡



Asthma Prevalence by Smoking Status (2017)

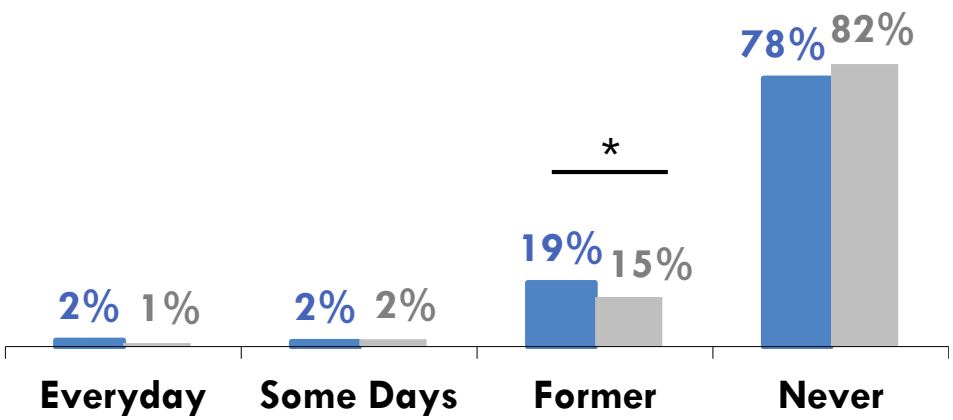


• Due to change in survey methodology, comparisons between data collected in 2011 and later and that from 2010 and earlier should be made with caution;
‡ Data age adjusted to the 2000 U.S. standard population; * Significantly different from state rate.
Vermont Department of Health; Source: BRFSS 2007-2017

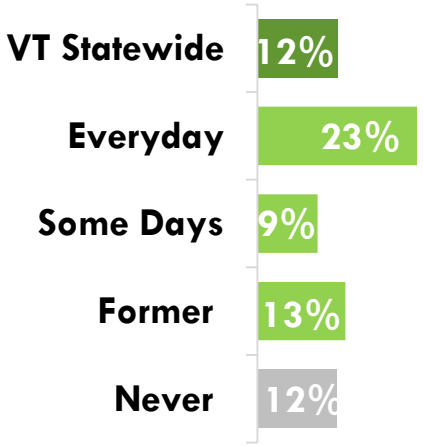
E-cigarettes and Asthma

- In 2017, 4% of Vermont adults with current asthma used e-cigarettes. Those with current asthma were more likely to be former e-cigarette users than those without asthma.
- Asthma prevalence ranged from 9% among those who sometimes used e-cigarettes to 23% among those who used e-cigs everyday; however, asthma prevalence did not differ statistically from the state rate.

Prevalence of E-cigarette Use among Those with Asthma and without Asthma (2016-2017)



Asthma Prevalence by E-cig Use (2017)

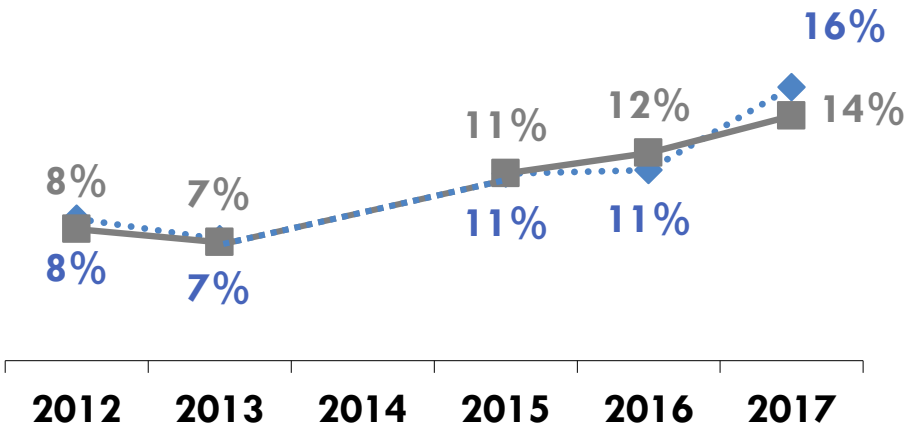


Vermont Department of Health: * Significant difference between groups, Source: BRFSS 2016-2017

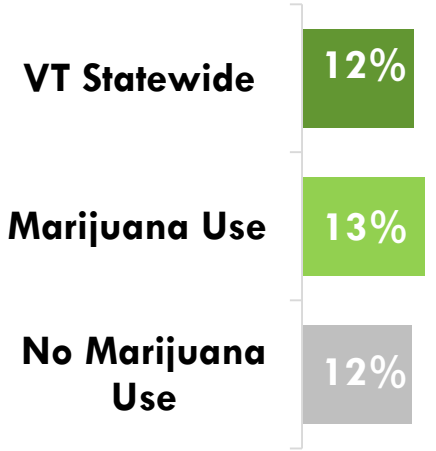
Marijuana and Asthma

- Sixteen percent of Vermont adults with current asthma used marijuana in the last 30 days. Marijuana use has risen significantly in the past 5 years among both those with and without asthma.
- Asthma prevalence did not differ between those who used marijuana and those who did not.

Marijuana Use among Vermont Adults with Asthma and without Asthma



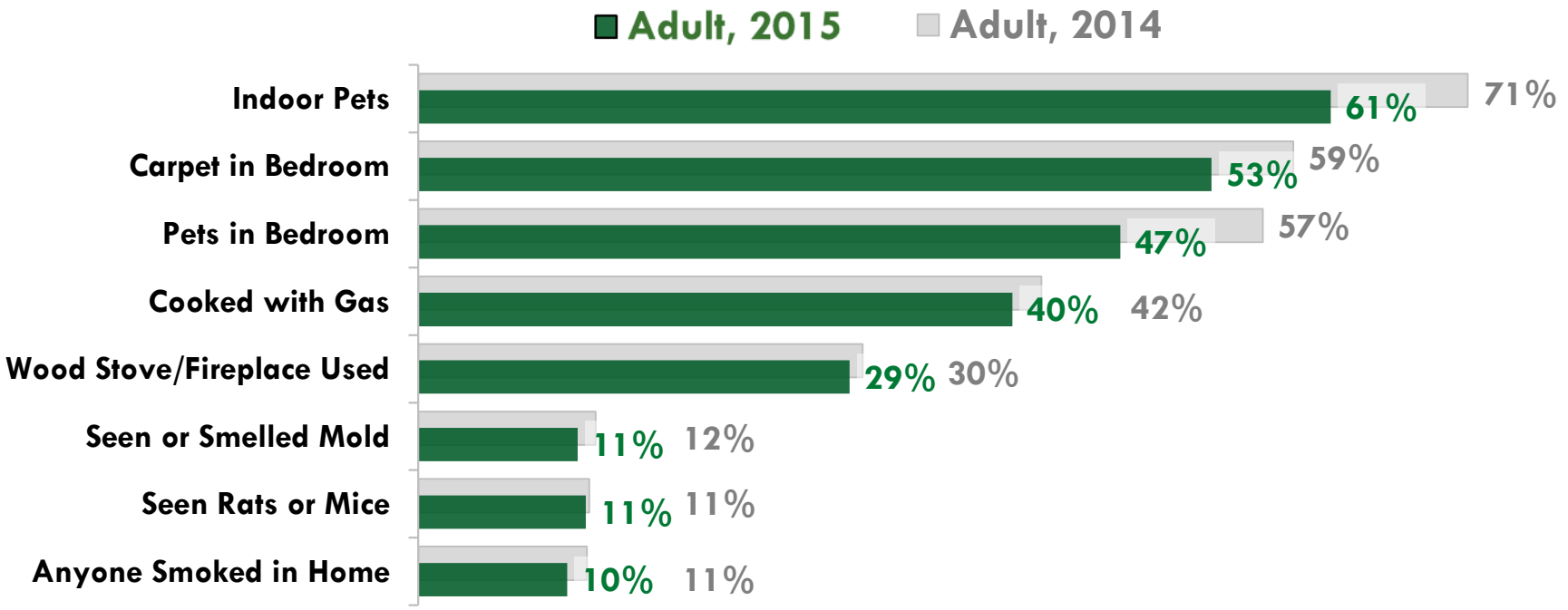
Asthma Prevalence by Marijuana Use (2017)



Vermont Department of Health - Source: BRFSS 2012-2017

Exposure to Indoor Environmental Triggers among Vermont **Adults** with Current Asthma

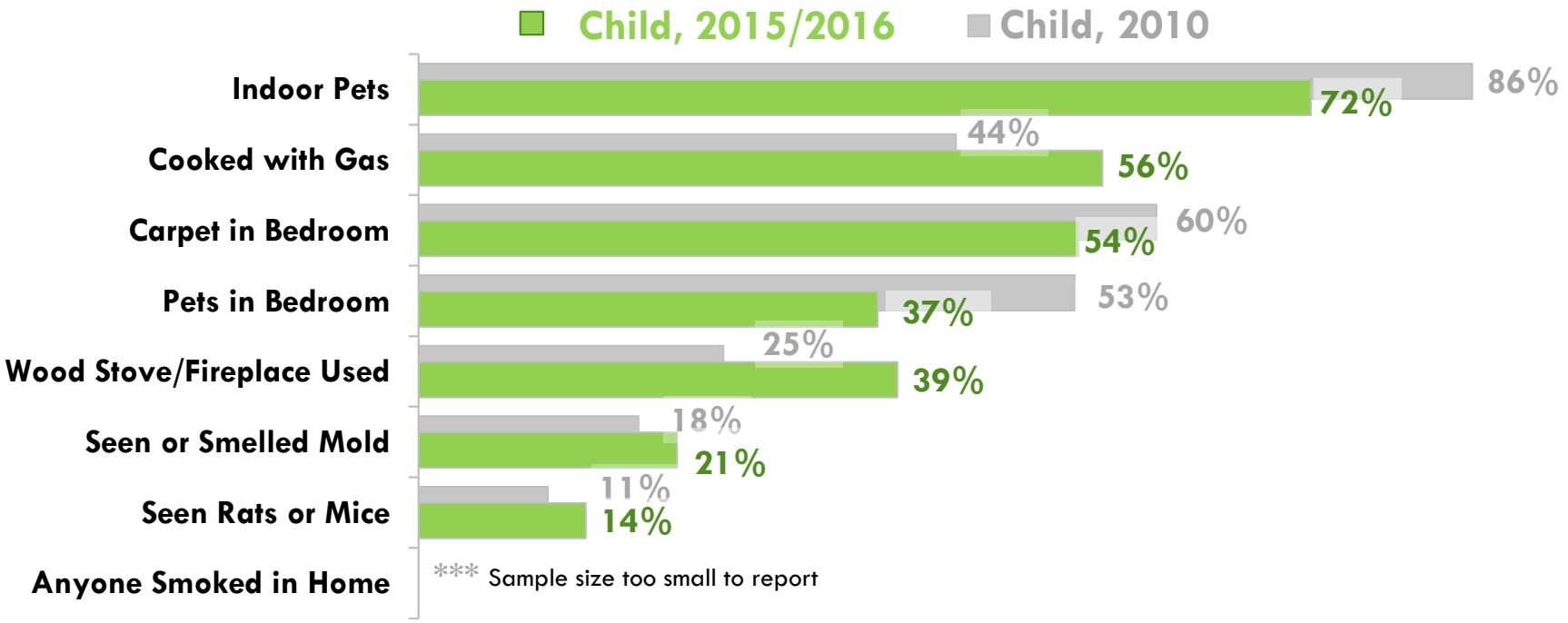
- In 2015, 61% of adults with current asthma had an indoor pet. Carpeting in one's bedroom and allowing pets in the bedroom were also common, with half of adults with asthma reporting each respective trigger.
- The rates of having **indoor pets** or allowing **pets in their bedroom** have each decreased consistently since 2013. In 2013, 82% of adults with asthma reported indoor pets and 67% allowed pets in their bedroom (2013 data not shown).



Vermont Department of Health - Source: Adult ACBS 2014, 2015

Exposure to Indoor Environmental Triggers among Vermont **Children** with Current Asthma

- In 2015-2016, the most common indoor triggers among children with current asthma were having an indoor pet (72%), cooking with gas (56%) having carpeting in one's bedroom (54%) and allowing pets in the bedroom (37%).
- The rates of having **indoor pets** or allowing **pets in their bedroom** have each decreased since 2010. However, rates of children living in a home that **cooks with gas** or uses a **wood stove or fireplace** have increased.

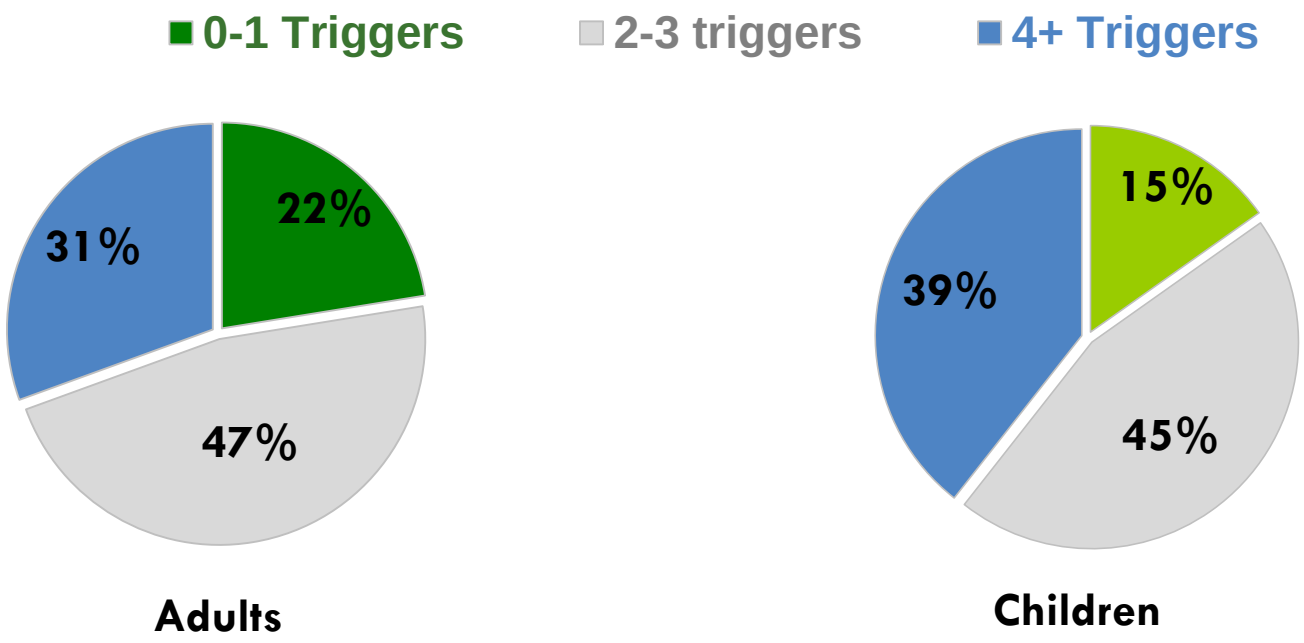


Vermont Department of Health - Source: Child ACBS 2010, 2015/2016-Preliminary

Exposure to Indoor Environmental Triggers

among Vermonters with Current Asthma

One third (31%) of adult Vermonters and 39% of youth with asthma lived with four or more common indoor asthma triggers. Triggers assessed included indoor pets, pets in the bedroom, carpet in the bedroom, cooking with gas, having a wood stove or fireplace, presence of mold or rodents, and someone smoking inside the house.

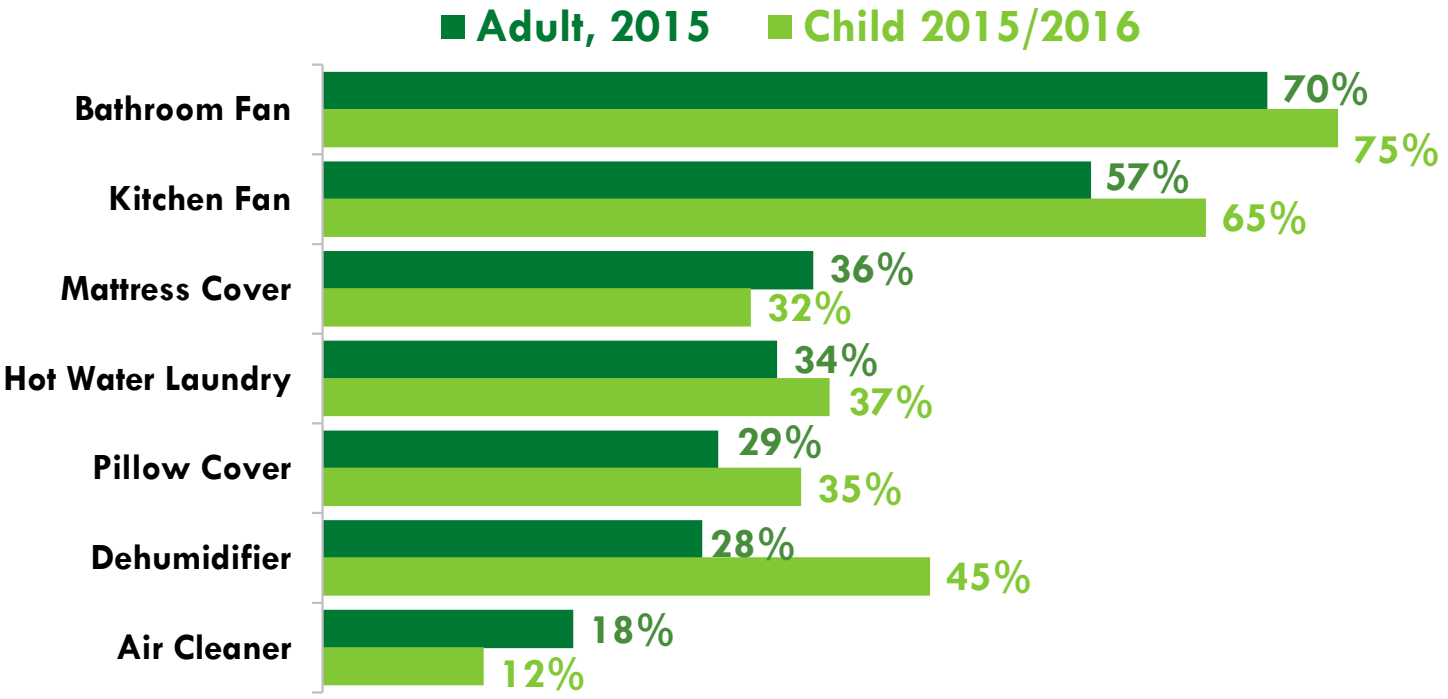


Vermont Department of Health - Source: Adult ACBS 2015, Child ACBS 2015/2016-Preliminary

Preventative Measures

among Vermonters with Current Asthma

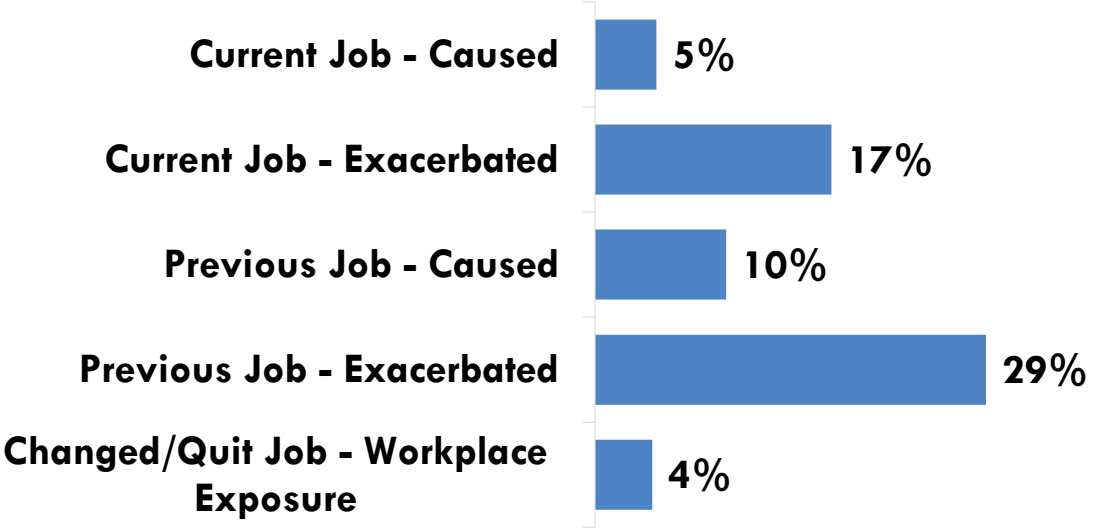
- Most Vermont adults and youth with asthma implemented preventative measures such as using a bathroom or kitchen fan to minimize the impact of environmental triggers.
- Approximately one in three adults used a mattress or pillow cover, washed laundry using hot water, or used a dehumidifier.
- Fewer than one in eight Vermonters used an air cleaner.



Vermont Department of Health - Source: Adult ACBS 2015, Child ACBS 2015/2016-Preliminary

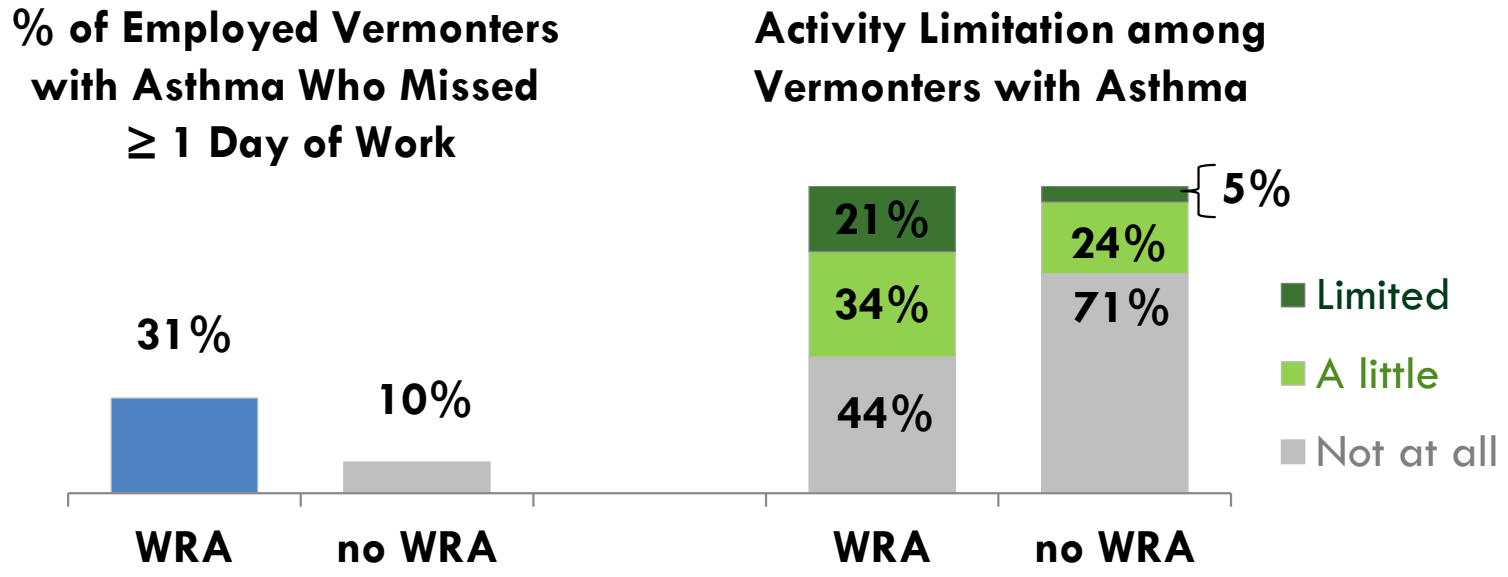
Asthma Risk Factors - Workplace Exposure

- In 2015, 5% of Vermont adults with current asthma indicated their asthma was caused by chemicals, smoke, fumes, or dust at their current workplace. Another 17% believe their asthma is exacerbated by factors in their current job. Among adults with current asthma, 4% reported quitting a job due to workplace factors that aggravated their asthma.
- Only 10% had told a doctor they believed their asthma was related to work and 7% had actually been told by a doctor that their asthma was related to their work. Thirteen percent of adults with current asthma reported discussing with their health care provider whether their asthma may be work related (data not shown).



Burden of Work-related Asthma (WRA)

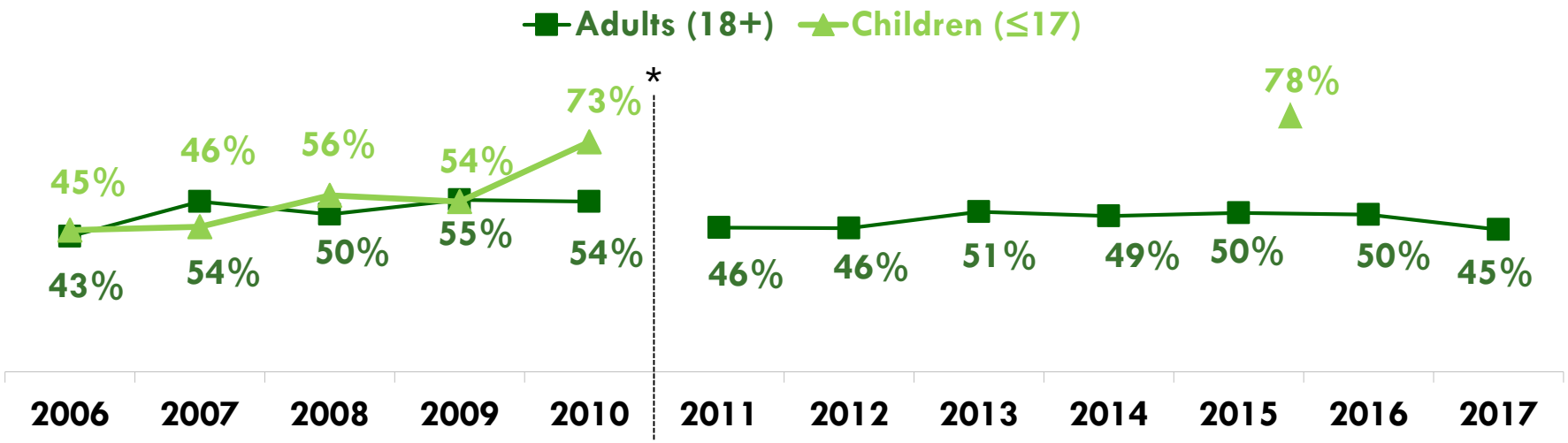
- Thirty-one percent of Vermont adults with WRA missed at least one day of work in the past year due to asthma compared to 10% of those without WRA. Those with WRA missed an average of 12 days of work per year due to their asthma compared to 0.3 days per year for those whose asthma was not work related (data not shown).
- Those with WRA had higher rates of activity limitation due to their asthma compared to those without WRA.



Asthma Risk Factors - Immunization

- In 2017, less than half of Vermont adults received the flu shot/spray in the past year. Vaccination rates were similar for those with asthma (45%) and those without (42%). Among youth with current asthma, 78% had a flu vaccination within the past year.
- Adults with asthma were significantly more likely to receive a pneumonia vaccine compared to adults without asthma (58% vs. 43%, data now shown).

Flu Vaccine in the Past Year among Those with Current Asthma



* Due to change in survey methodology, comparisons between data collected in 2011 and later and that from 2010 and earlier should be made with caution.
Vermont Department of Health - Source: BRFSS 2006-2017 and Child ACBS 2006 – 2010, 2015/2016-Preliminary

Self and Clinical Care Management

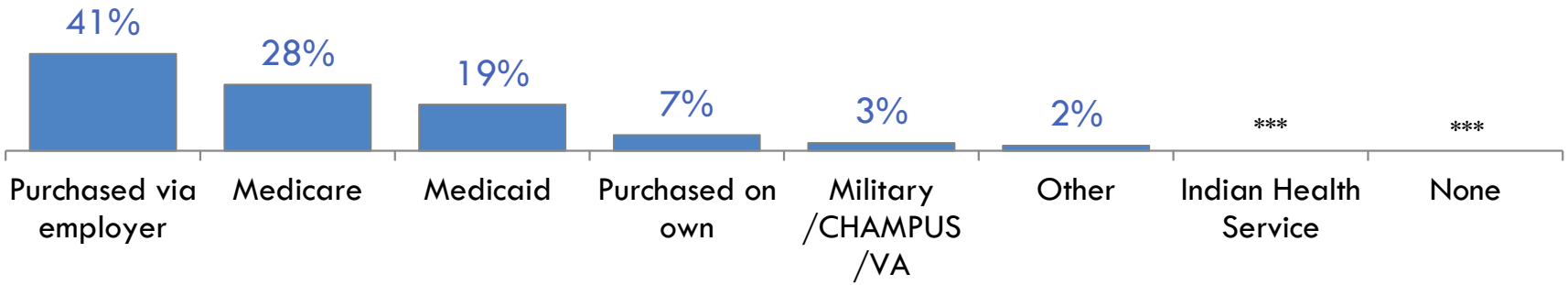
Health Care and Health Insurance

Among Vermont adults with current asthma, 94% had health care coverage in 2017. Of insured Vermonters with current asthma, 41% had insurance through an employer, 28% through Medicare, 19% through Medicaid, and 7% through plans they or a family member purchased on their own.

Nearly all children had health insurance; of those with insurance, 53% were covered through their caregiver's employer, 33% through Medicaid or Medicare, and 14% through Vermont's Child Health Insurance Program (VCHIP) or other sources (data not shown).

Primary Health Insurance Among Insured Vermonters with Current Asthma

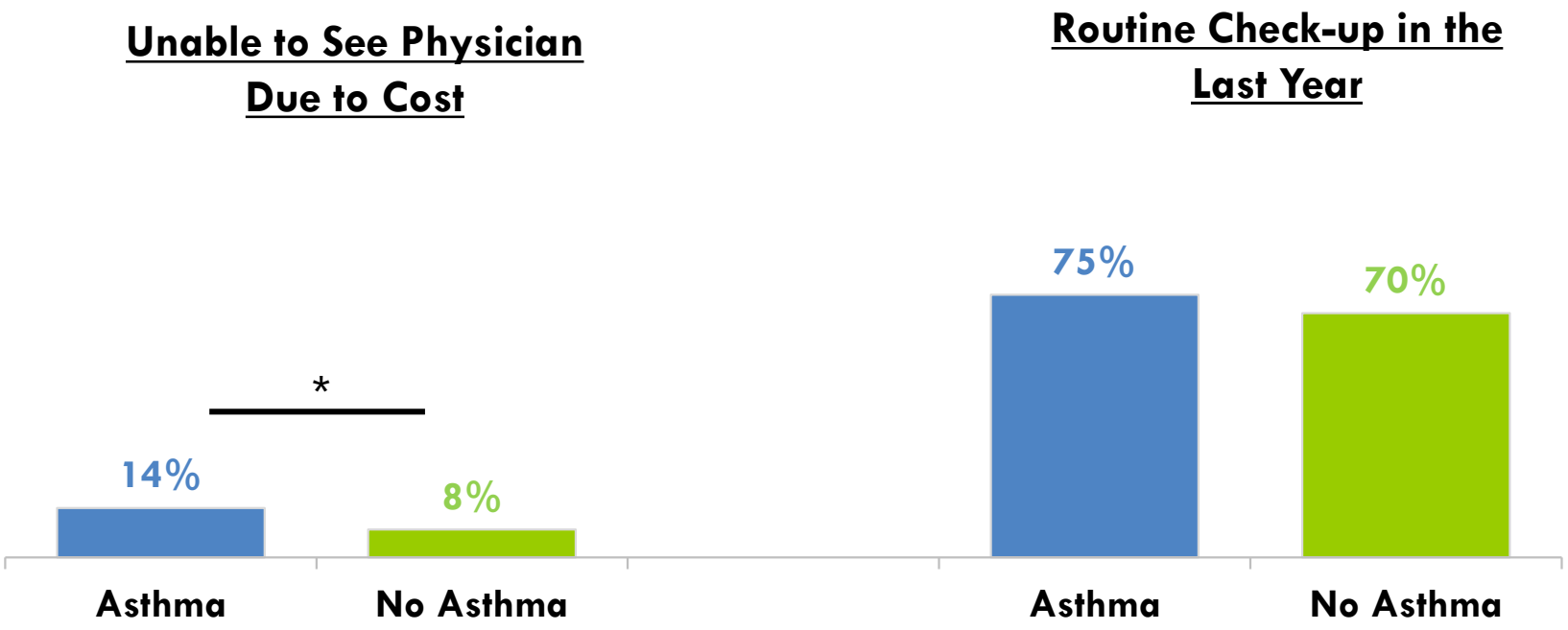
*** Numbers too small to report



Vermont Department of Health - Source: 2017 VT BRFSS, Child ACBS 2015/2016-Preliminary

General Health Care

In 2017, adults with current asthma were more likely to report they could not see a physician due to cost than Vermonters without asthma (14% vs. 8%). Approximately three out of four adults with current asthma had a routine check-up in the last year.

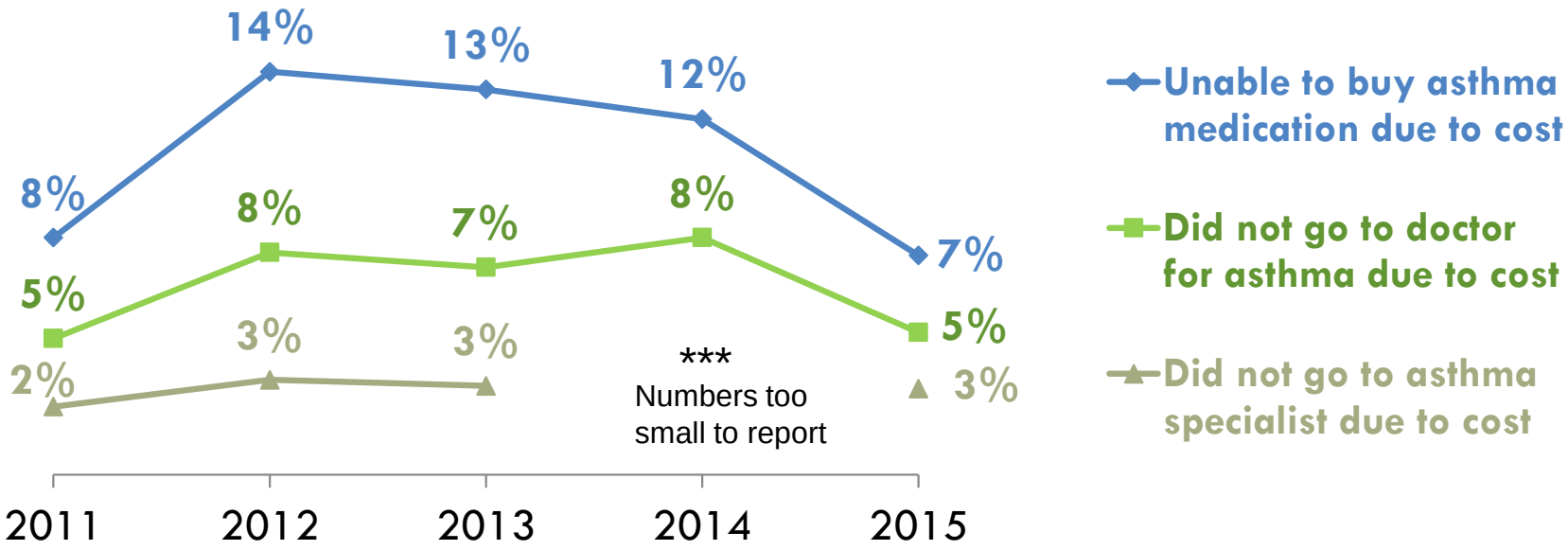


* Significant difference between those with and without asthma

Vermont Department of Health - Source: BRFSS 2017

Cost Barriers to Asthma Care

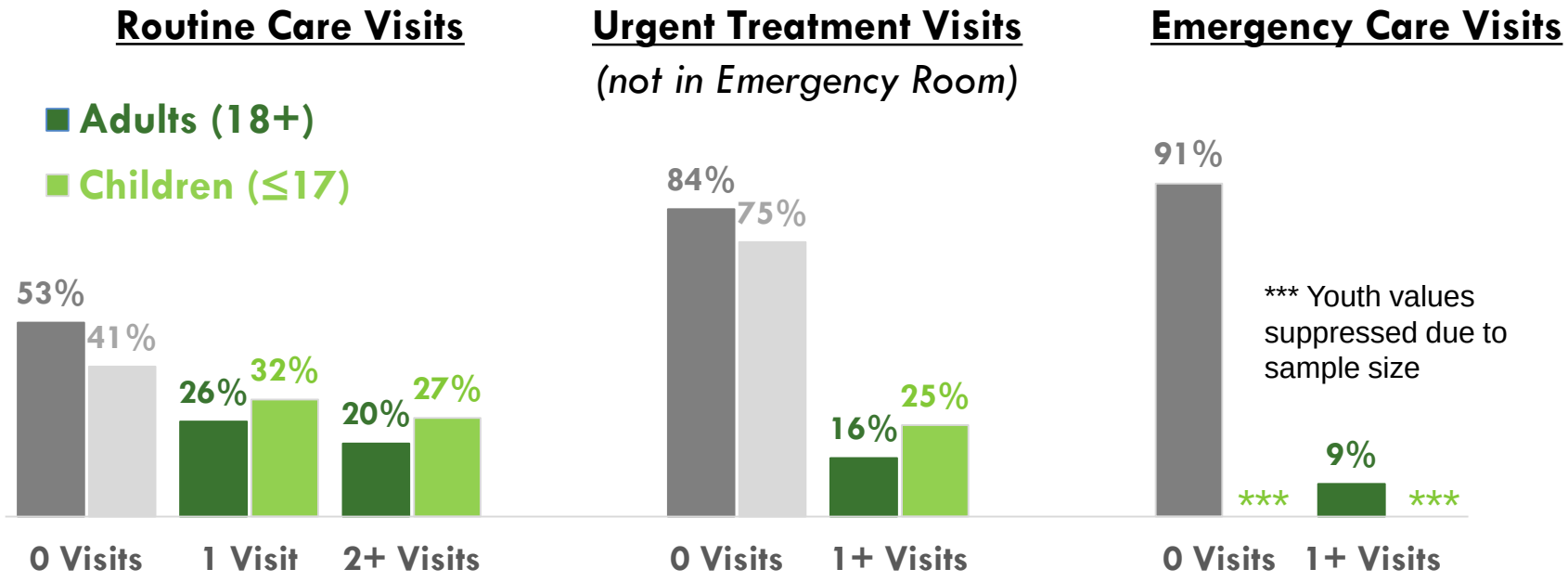
- In 2015, 7% of adults with current asthma indicated they were unable to buy needed asthma medication due to cost in the past year.
- Five percent of adults reported there was a time in the past 12 months when they needed to see their primary care doctor for their asthma but could not because of the cost.



Vermont Department of Health - Source: Adult ACBS 2011-2015

Asthma Management – Clinical Care

- Approximately half of adults with asthma (47%) reported at least one routine care visit for their asthma in the last 12 months. Sixteen percent used urgent care to treat their asthma and 9% used emergency care in the past year.
- Compared to adults, a higher proportion of youth had one or more routine or urgent care visits.

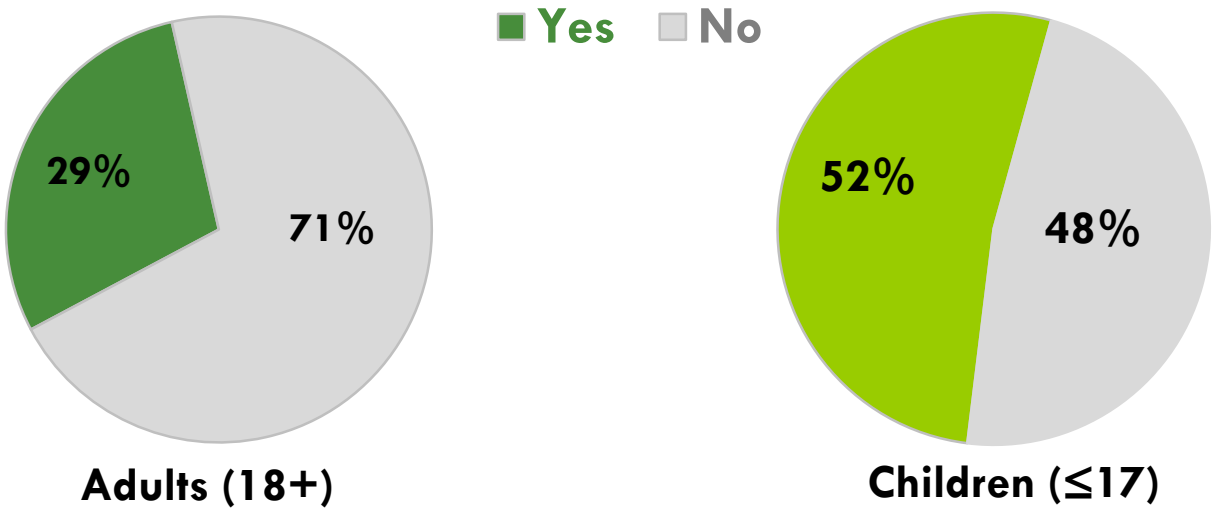


Vermont Department of Health - Source: Adult ACBS 2015, Child ACBS 2015/2016-Preliminary

Asthma Management – Action Plans

Less than one in three adult Vermonters with current asthma (29%) reported having ever received an asthma action plan from a health care provider. Approximately half (52%) of youth have received an asthma action plan from their health care provider.

Have You Ever Received an Asthma Action Plan? ‡

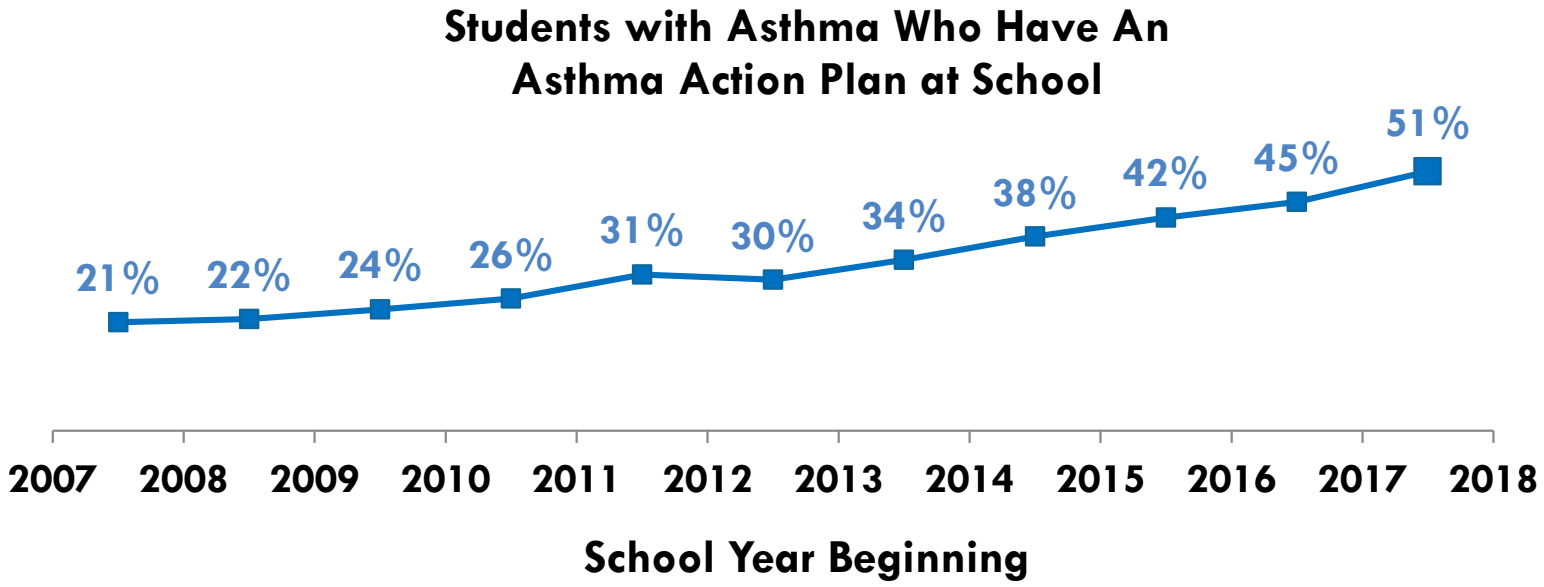


‡ Data are age adjusted to the 2000 U.S. standard population.

Vermont Department of Health - Source: Adult ACBS 2015, Child ACBS 2015/2016-Preliminary

Asthma Management in Schools
Asthma Action Plans

- The annual School Nurse Survey reports how many students in each school have asthma and how many of these students have an asthma action plan on file with the school nurse.
- The rate of asthma action plans in schools has steadily increased over time and has more than doubled since 2007. In the last academic year, more students with asthma had an asthma action plan at school than did not.
- National Association of School Nurses guidelines are that each student with asthma should have a current asthma action plan on file with the school nurse at their school.

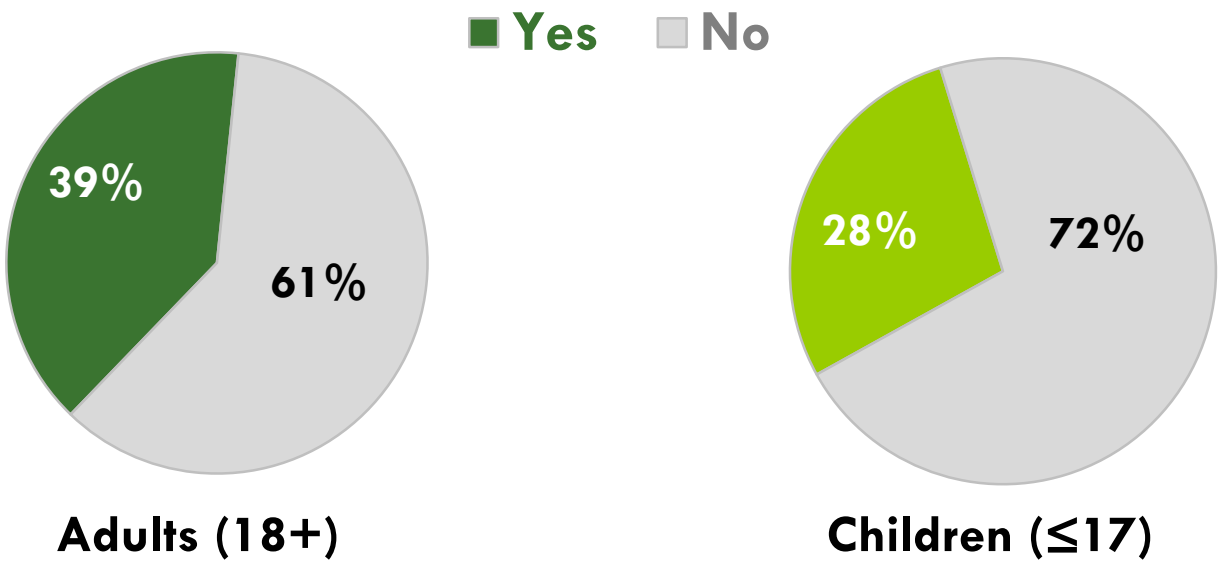


Vermont Department of Health - Source: School Nurse Survey 2007-2017

Asthma Management
Advised to Modify Environment

More than one third of Vermont adults (39%) and youths (28%) with current asthma have been advised by their health professional to change things at home, school, or work to improve their asthma.

Have You Ever Been Advised to Modify Your Environment? ‡

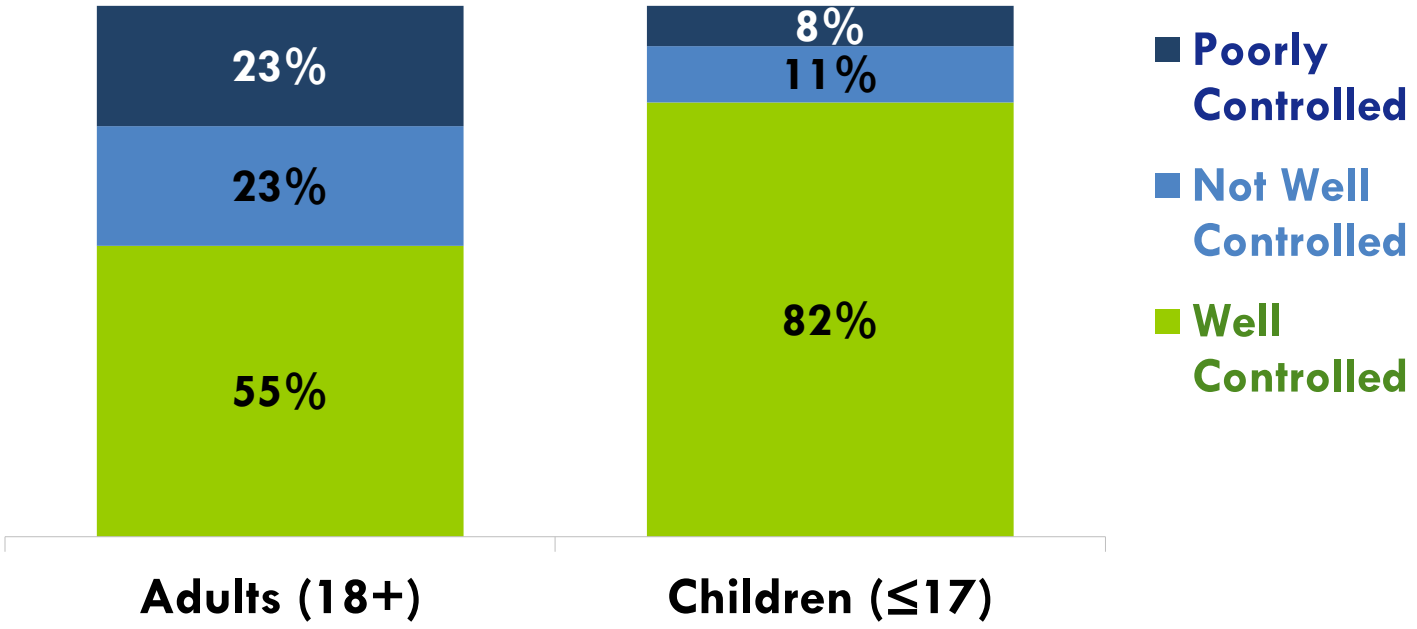


‡ Data are age adjusted to the 2000 U.S. standard population.

Vermont Department of Health - Source: Adult ACBS 2015, Child ACBS 2015/2016-Preliminary

Asthma Management - Control

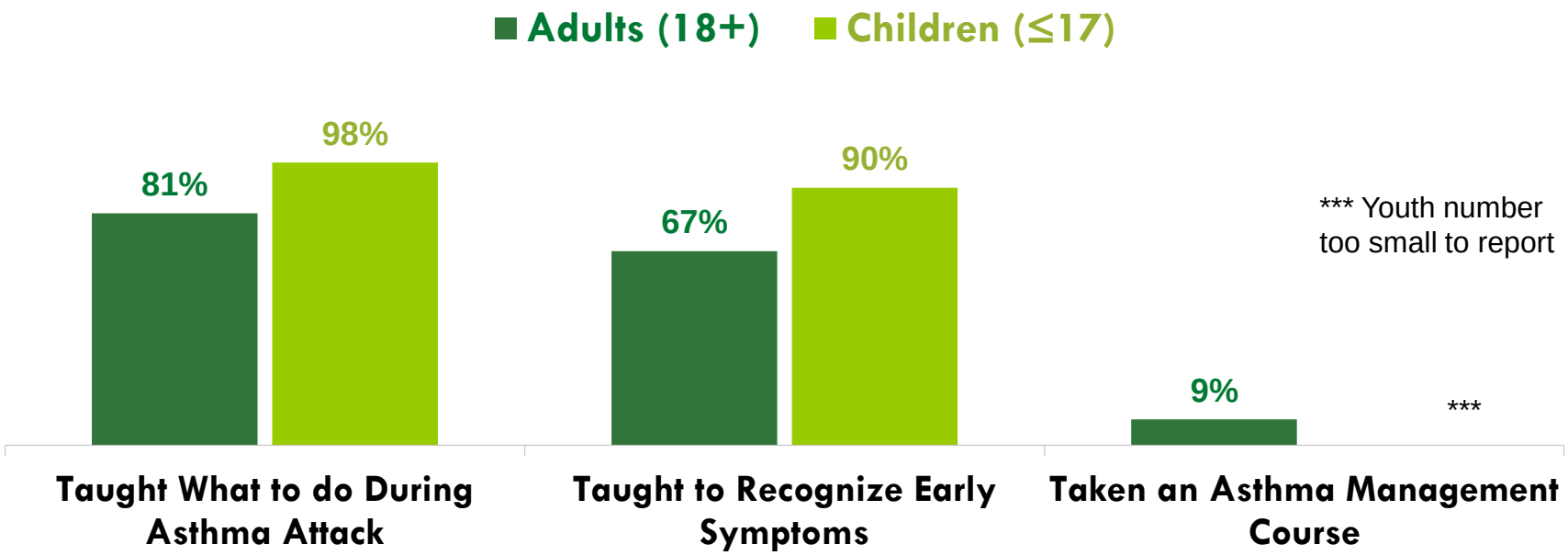
Among Vermonters with current asthma, over half had their asthma well controlled. Approximately, one in five adults (23%) and one in ten youth (11%) had asthma that was 'not-well controlled' and one in five adults and one in twelve youth had asthma that was 'poorly controlled'. Well-controlled asthma among children has been trending upward from 59% in 2010 to 82% in 2015-2016.



Vermont Department of Health - Source: Adult ACBS 2015, Child ACBS 2015/2016-Preliminary

Asthma Management – Self Care

- The majority of adults (81%) and youth (98%) with current asthma reported they were taught what to do during an asthma attack.
- Two-thirds of adults and 90% of youth reported being taught to recognize early symptoms.
- Nine percent of adults have ever taken an asthma management course.

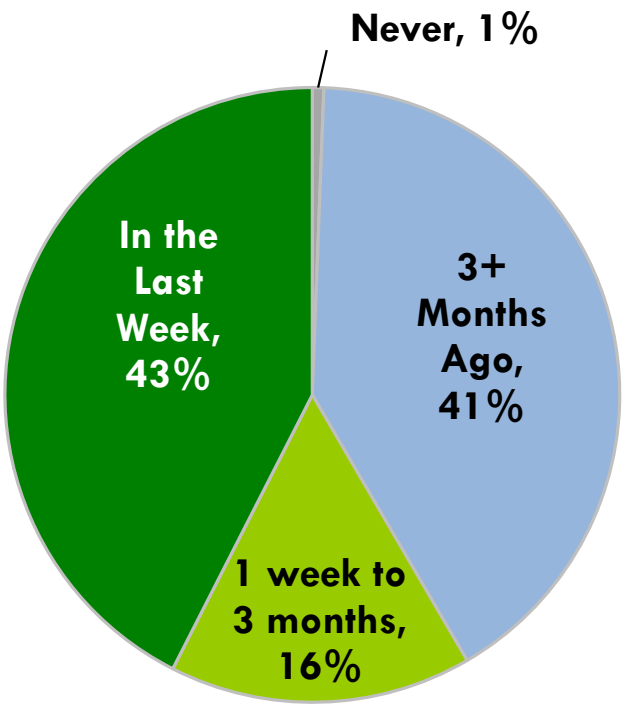


Vermont Department of Health - Source: Adult ACBS 2015 Child ACBS 2015/2016-Preliminary

Asthma Management – Adult Medication Use

- The majority (58%) of adults with current asthma have used some type of asthma medication in the last three months; this decreased from 74% in 2014.
- Among adults with asthma who used asthma medications in the past three months, inhalers were the most common medication used (98%). Other common medications used in the last three months include nebulizers (8%) and pills (12%).

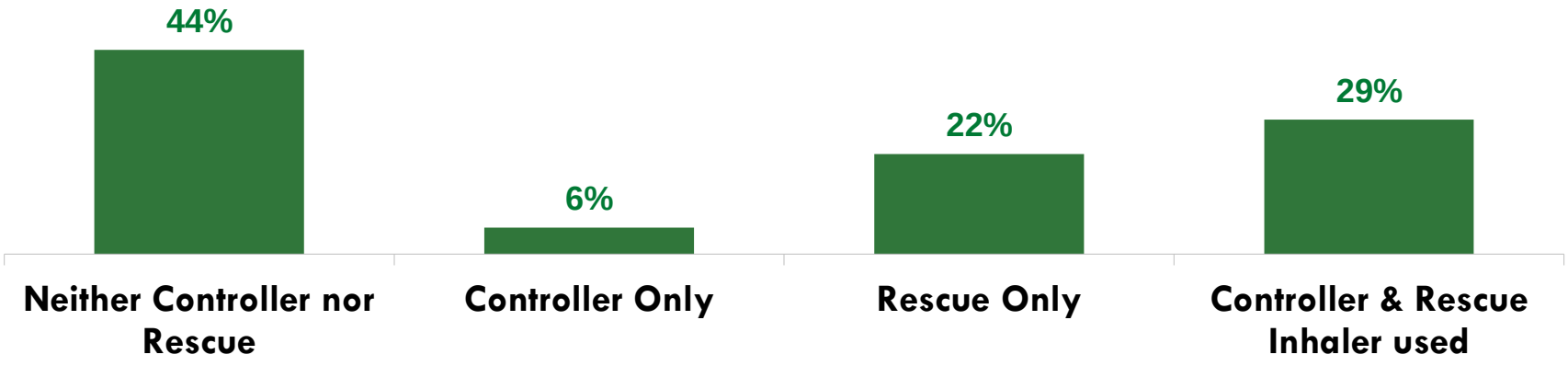
Recent Use of Asthma Medication



Rescue vs. Controller Use in Last 3 months

- Four in ten adults with current asthma have not used either a rescue or controller inhaler in the last three months. One in 16 adults have used a controller inhaler only and one in 5 adults have used a rescue inhaler only. Almost a third of adults used both a controller and rescue inhaler.
- Among those whose asthma is *not* "well-controlled", 19% did not use an inhaler, 23% used only a rescue inhaler, and 53% used both rescue and control inhalers. Similarly, among those with moderate or severe persistent asthma, 32% did not use an inhaler, 21% used a rescue inhaler only, and 37% used both (data not shown).

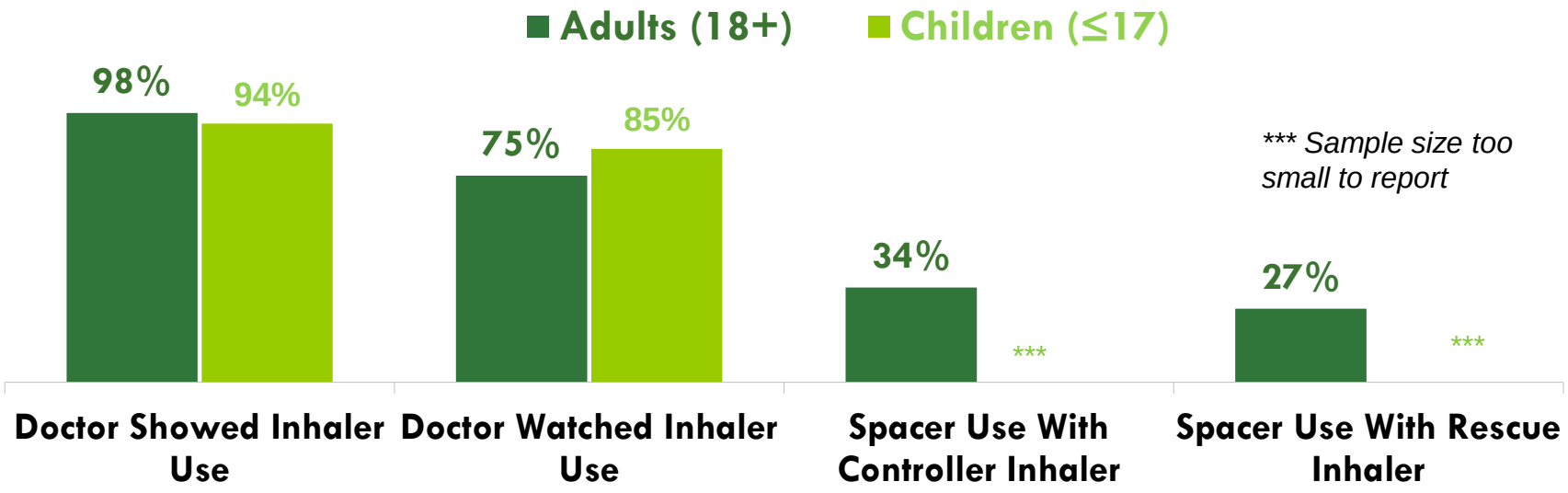
Inhaler Use among Adults with Current Asthma



Vermont Department of Health - Source: Adult ACBS 2015

Inhaler Use - Technique

- Most adults (98%) and youth (94%) with current asthma have been shown how to use an inhaler by their physician. Meanwhile 75% of adults and 85% have had their doctor watch them use their inhaler.
- Approximately two out of five adults used a spacer with their controller (35%) or rescue (27%) prescription inhalers. Recent changes to inhaler design allow new-generation inhalers to deliver medication optimally without the use of a spacer, therefore spacer use is expected to decline in future years.



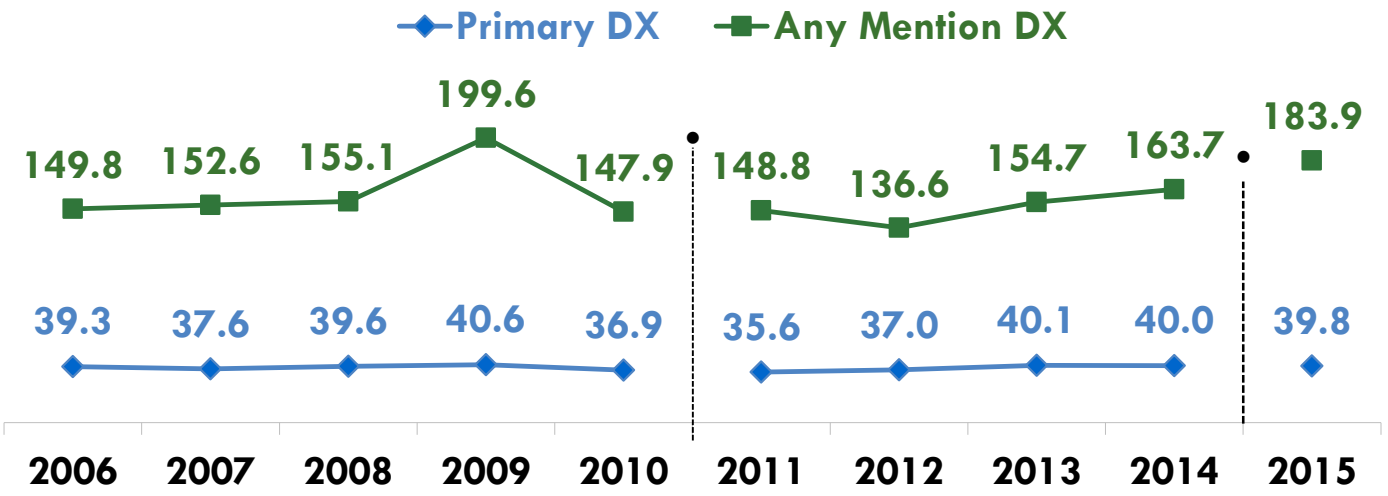
Vermont Department of Health - Source: Adult ACBS 2015, Child ACBS 2015/2016-Preliminary

Indications of Poor Asthma Management

Emergency Department Visits

- In 2015, there were 2,489 emergency department visits with a **primary diagnosis** of asthma among Vermont residents, which was a 1% increase from 2014. The rate of ED visits for a primary diagnosis of asthma was 39.8 per 10,000 Vermonters which is similar to recent years.
- There were 11,511 ED visits that contained **any diagnosis** of asthma, a rate of 183.9 per 10,000 Vermonters. The rate of ED visits for any diagnosis of asthma has steadily increased since 2012.

ED Visit for Asthma (rate per 10,000), 2006-2015



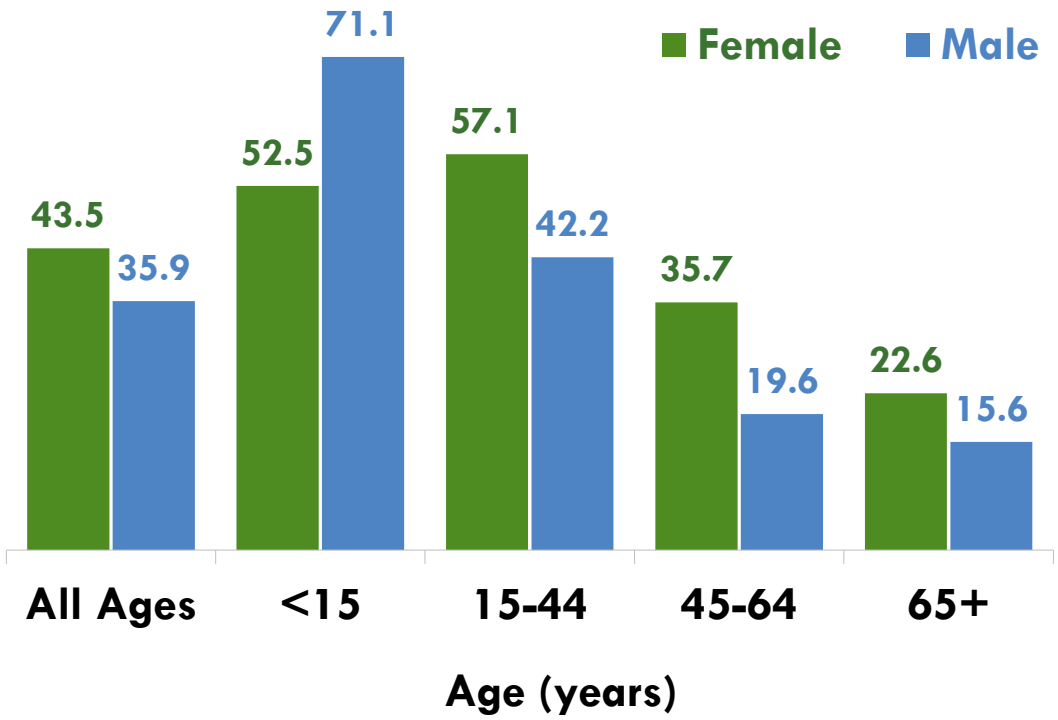
• See note in Data Sources regarding changes to the Hospital Discharge data which occurred during this time (page 60).

Vermont Department of Health - Source: Vermont Uniform Hospital Discharge Data Set (VUHDDS), 2006-2015

Emergency Department Visits for Asthma

- In 2015, **females** had a higher rate of emergency department visits with asthma as a primary diagnosis than **males** (43.5 per 10,000 vs. 35.9 per 10,000).
- When examined by age, the highest rates of emergency department visits with a primary diagnosis of asthma were among males under the age of 15 (71.1per 10,000) and females 15-44 years of age (57.1 per 10,000).

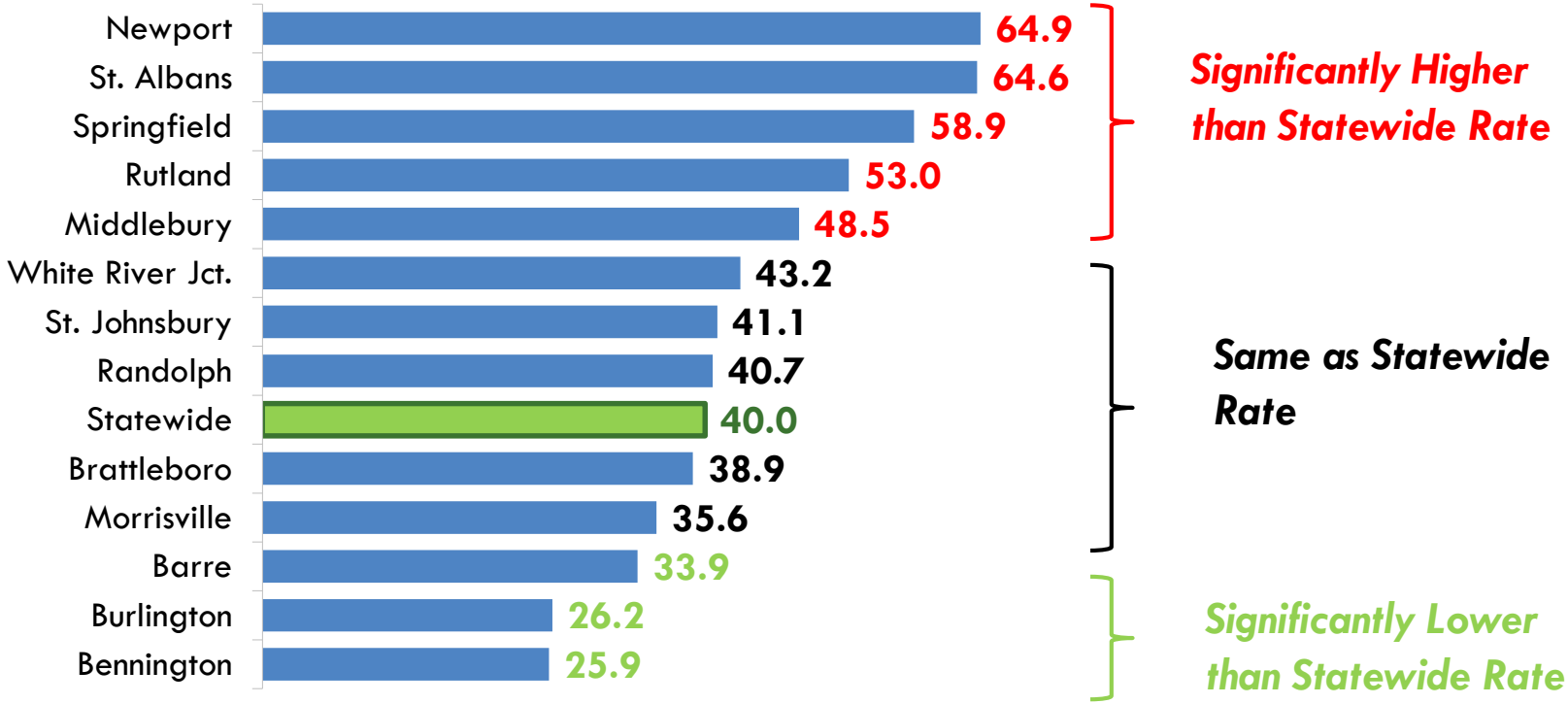
Primary Asthma Diagnosis (rate per 10,000), 2015



Vermont Department of Health - Source: VUHDDS 2015

Emergency Department Visits by Hospital Service Area

In 2015, emergency department visits with a primary diagnosis of asthma varied significantly by hospital service area (HSA). The Newport, St. Albans, Rutland, Springfield, and Middlebury HSAs had significantly higher ED visit rates than the statewide rate, while the Barre, Bennington and Burlington HSAs had significantly lower rates of ED visits per 10,000.

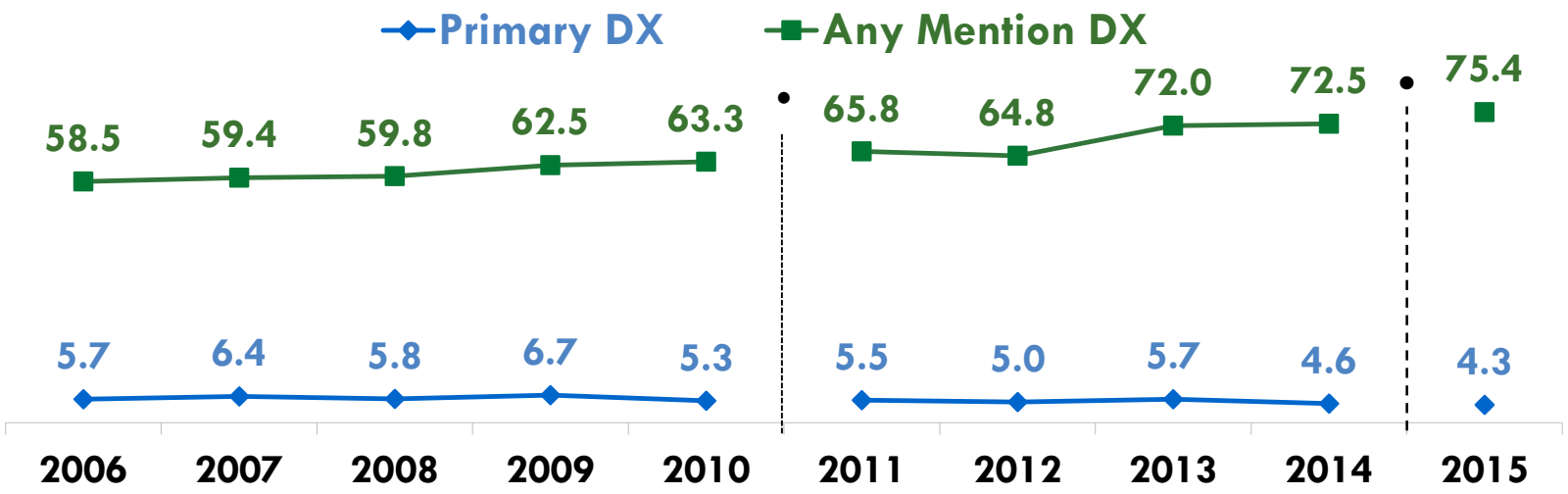


Vermont Department of Health - Source: VUHDDS 2013-2015

Hospitalizations

- In 2015, 271 Vermonters were discharged from the hospital with a primary diagnosis of asthma (4.3 per 10,000 Vermonters). There were 4,718 hospitalizations with any mention of asthma their diagnoses (75.4 per 10,000 Vermonters).
- The rate of hospitalization with a primary diagnosis decreased substantially from 6.7 in 2009 to 4.3 in 2015 per 10,000 Vermonters, while the rate of any diagnosis of asthma has steadily increased over this timeframe. Changes in methodology and availability of data from surrounding states may contribute in part to this decrease•.

Hospital Discharge with an Asthma Diagnosis (rate per 10,000) 2006-2015

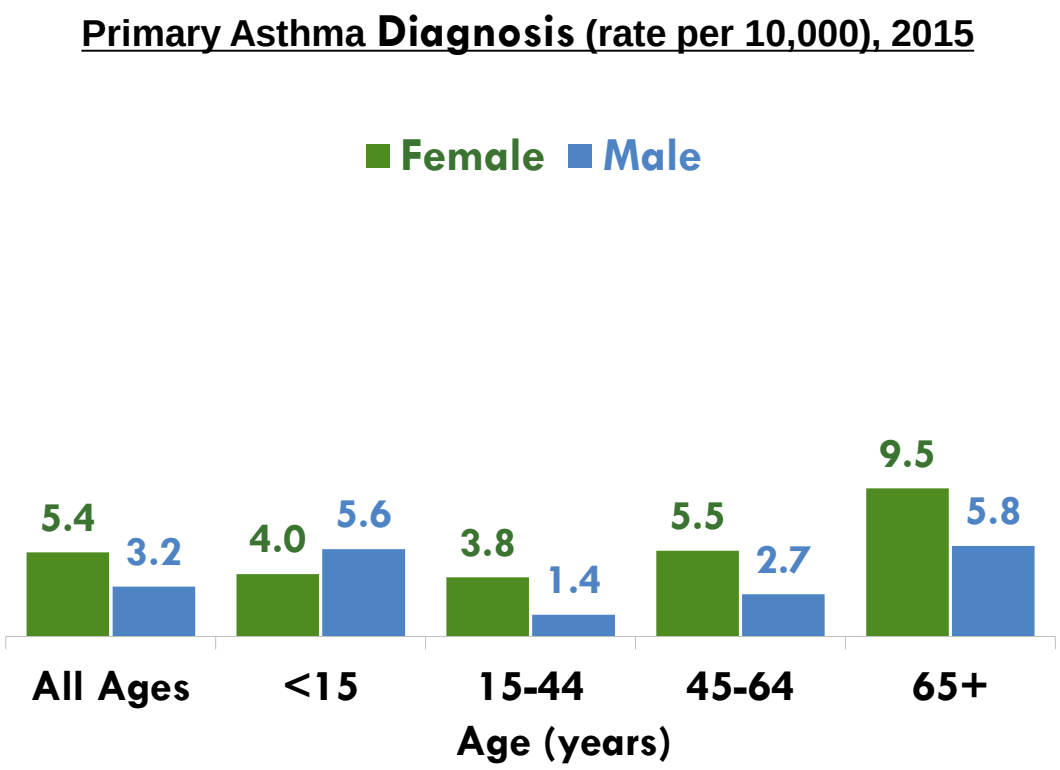


• See note in Data Sources regarding changes to the Hospital Discharge data which occurred during this time (page 60).

Vermont Department of Health - Source: VUHDDS 2006-2015

Hospitalizations for Asthma

- Following the same trend as observed for ED visits, females also had a higher rate of hospitalizations for asthma than males (5.4 per 10,000 versus 3.2 per 10,000).
- The highest rates of hospitalizations with a primary diagnosis of asthma were among females (9.5 per 10,000) and males 65 years and older (5.8 per 10,000).

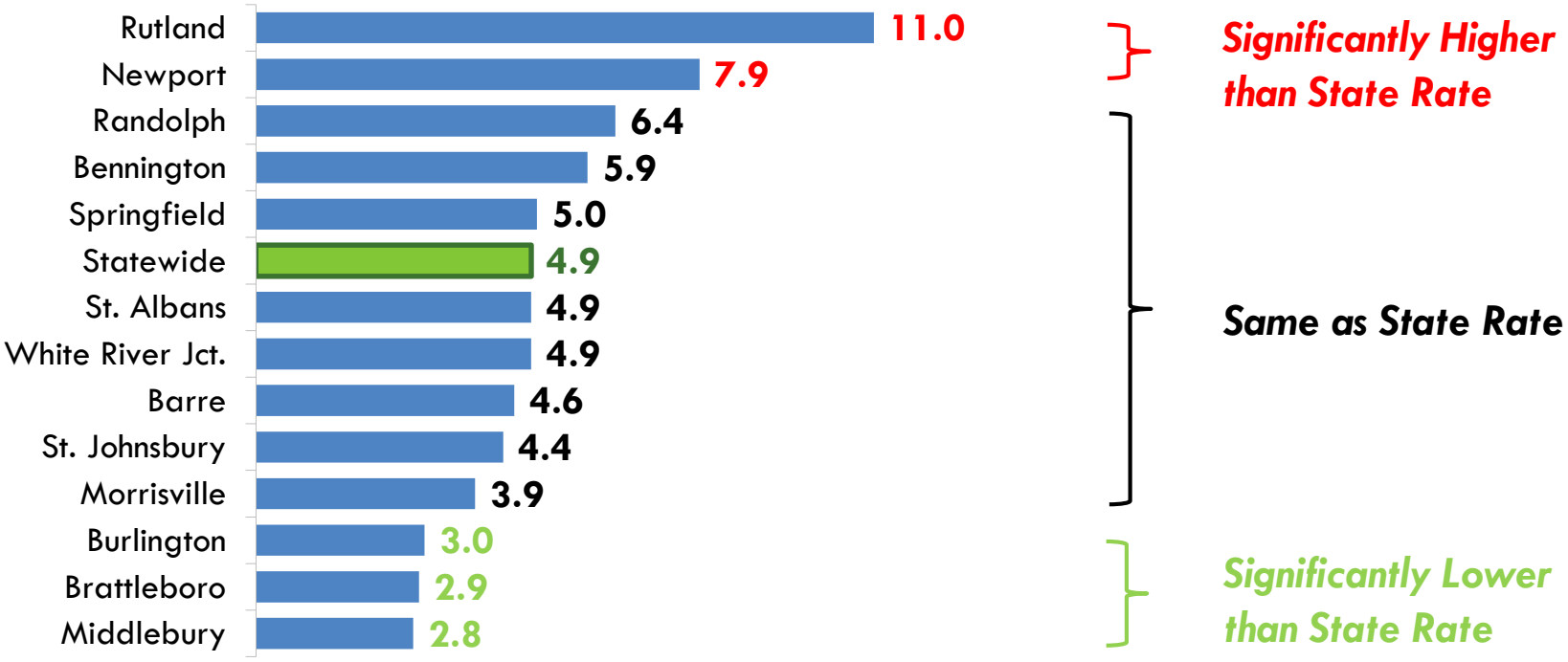


Vermont Department of Health - Source: VUHDDS 2015

Hospitalizations by Hospital Service Area

The rate of hospital discharges with a primary diagnosis of asthma varied greatly by hospital service area (HSA). The Rutland and Newport HSAs had significantly higher hospitalizations rates as compared to the statewide rate, while the Burlington, Middlebury, and Brattleboro HSAs had lower rates compared to the statewide rate.

Hospitalizations with a Primary Asthma Diagnosis by HSA (rate per 10,000), 2013-2015

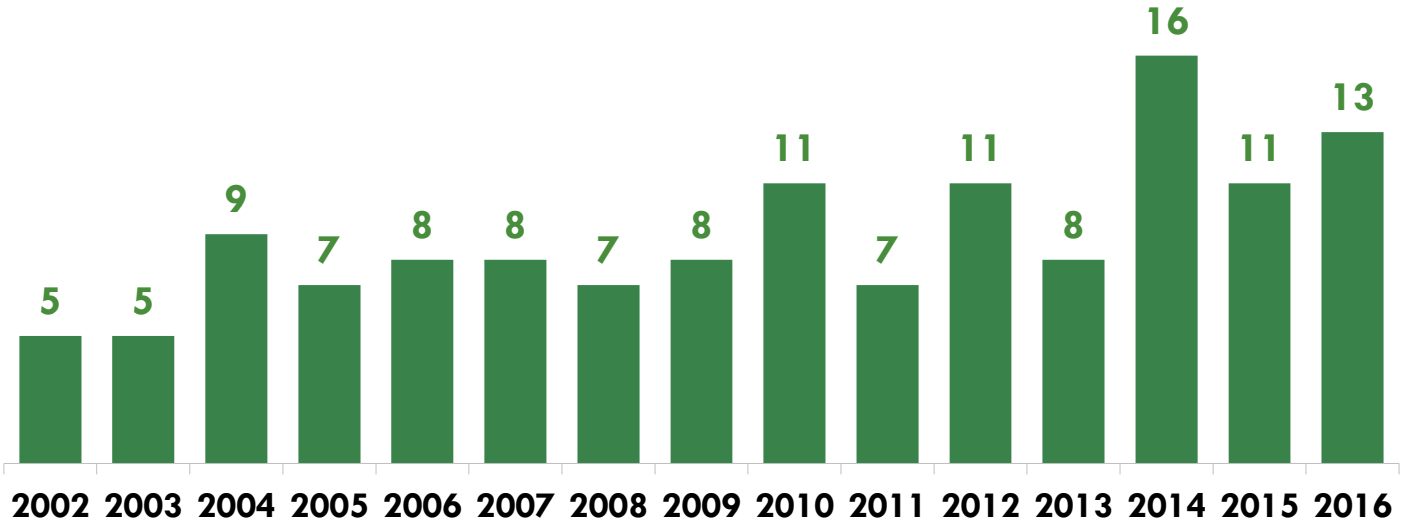


Vermont Department of Health - Source: VUHDDS 2013-2015

Mortality Due to Asthma

- In the past ten years, 100 Vermonters have died because of their asthma. In 2016, there were 13 deaths with a primary cause of asthma. Between 2007 and 2016, there have been between 7 and 16 deaths per year due to asthma.
- In 2016 the rate of death due to asthma was 2.1 deaths per 100,000 compared to the U. S. rate of 1.1 deaths per 100,000.

Annual Deaths Due to Asthma



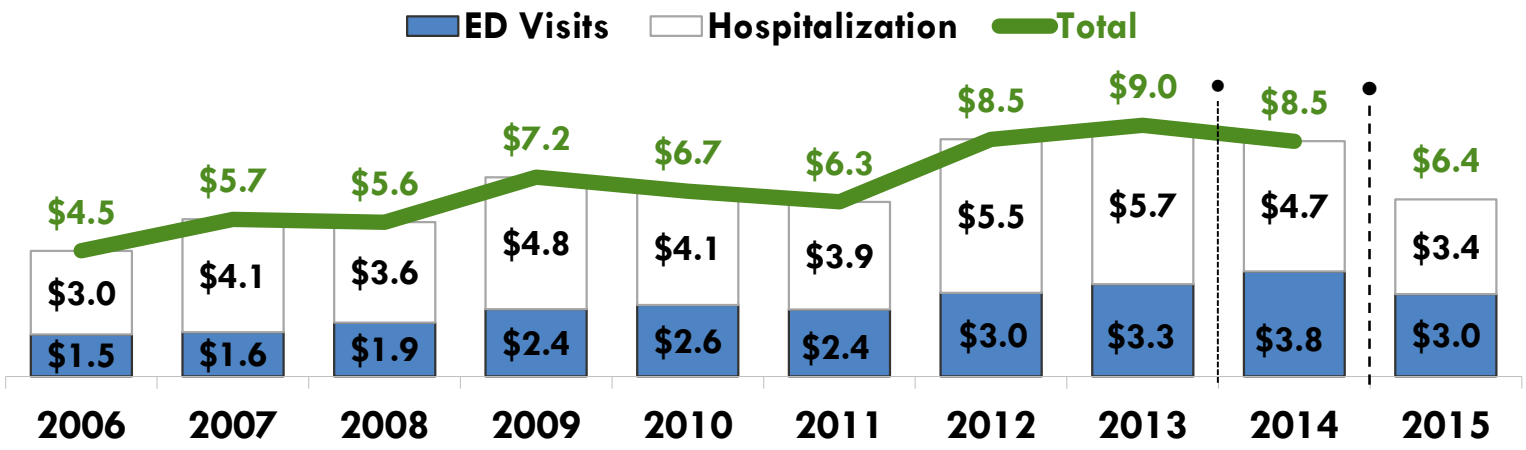
Vermont Department of Health - Source: Vermont Vital Statistics System, US data: https://www.cdc.gov/nchs/data/nvsr/nvsr67/nvsr67_05_tables.pdf.

Charges of Poor Asthma Management

Health Care Charges

- In addition to the negative health outcomes associated with poor asthma management, there are also substantial financial costs. In 2015, hospitalizations and ED visits primarily for asthma accounted for $6.4 million dollars in charges.
- In 2015, hospitalizations with a primary diagnosis of asthma had an average charge of $14,700 per patient and totaled $3.4 million in charges. The average charge for an ED visit for asthma was $1,700 and totaled $3.0 million.

Charges for Asthma-related Hospital Care in Millions (Dx1= Asthma)



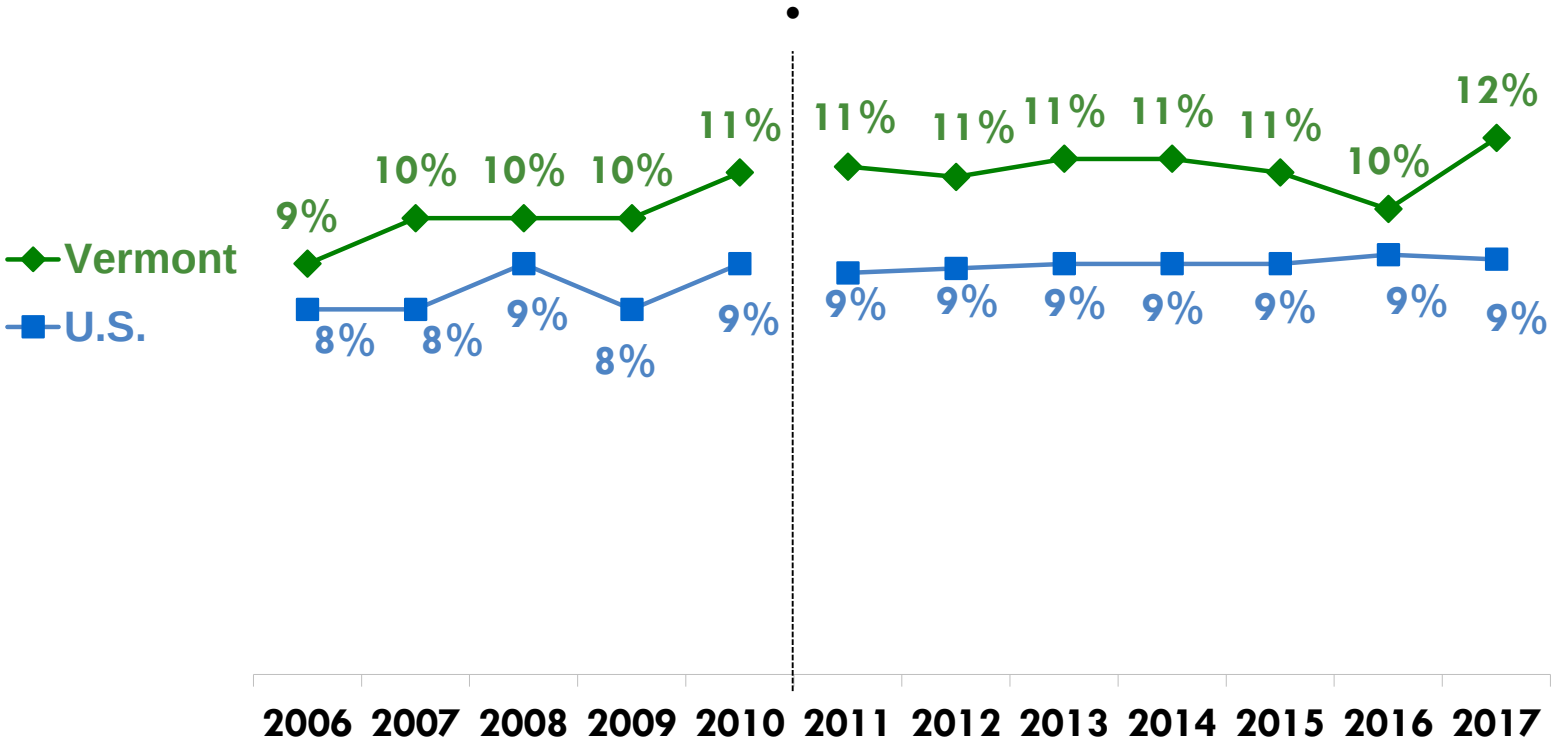
• See note in Data Sources regarding changes to the Hospital Discharge data which occurred during this time (page 60).

Vermont Department of Health - Source: VUHDDS 2006-2015

Comparisons to U.S.

Asthma Prevalence Among Adults

From 2007-2017, the prevalence of asthma in adult Vermonters has been significantly higher than the adult asthma prevalence in the U.S.

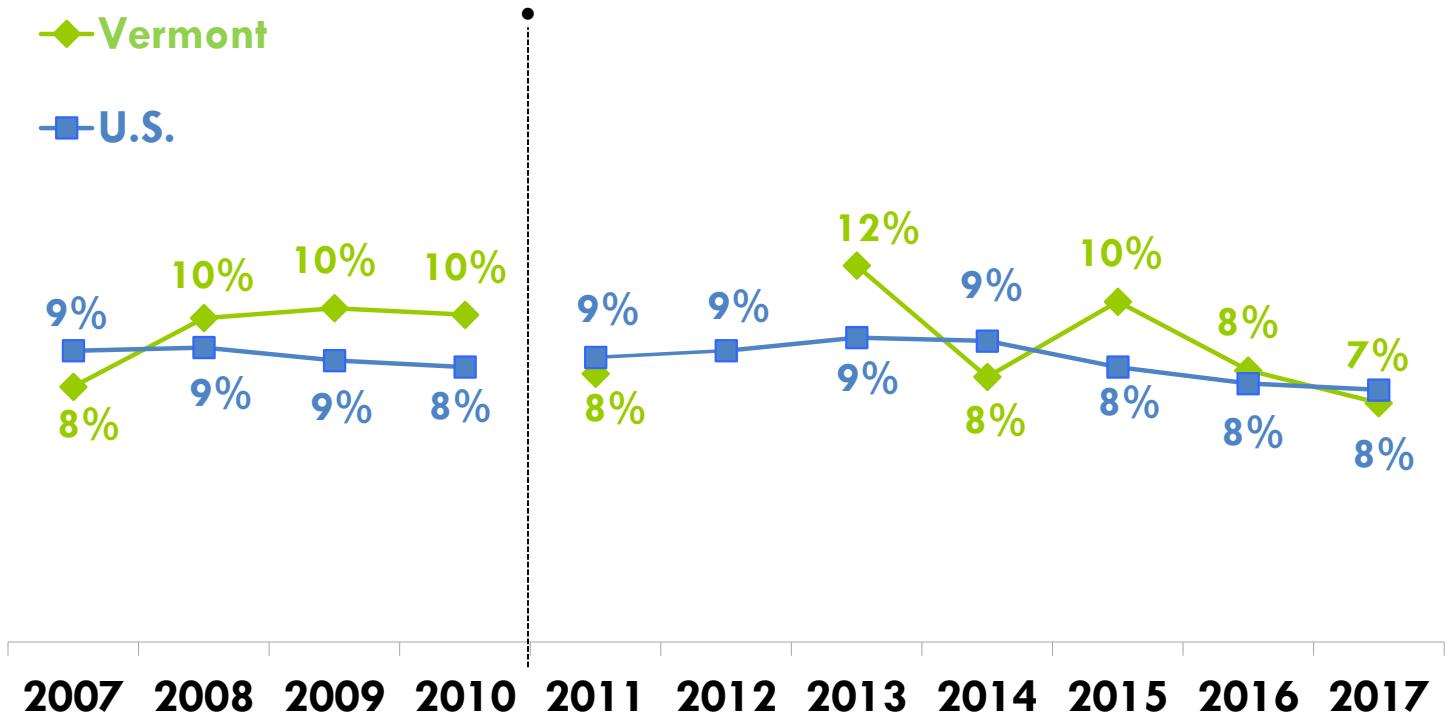


- Due to weighting methodology changes beginning in 2011, comparisons between data collected in 2011 and later and that from 2010 and earlier should be made with caution.

Vermont Department of Health - Source: VT and US BRFSS 2006-2017

Asthma Prevalence Among Children

From 2007-2017, the prevalence of asthma among Vermont youth has been similar to the U. S.

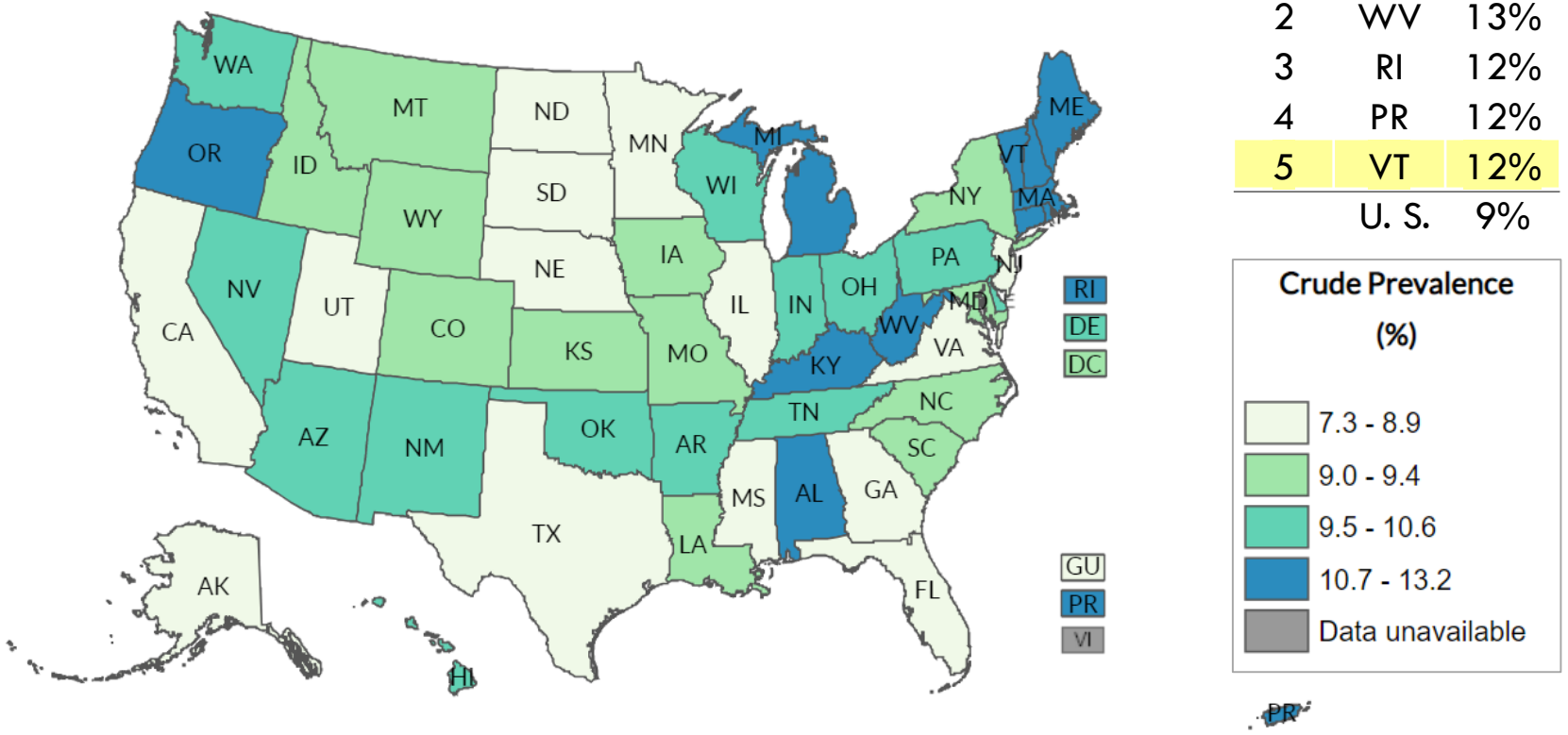


- Due to weighting methodology changes beginning in 2011, comparisons between data collected in 2011 and later and that from 2010 and earlier should be made with caution.

Vermont Department of Health - Source: VT and US BRFSS 2006-2017, Child data for 2012 not available; Child defined as 17 years of age or less.

Adult Current Asthma Prevalence by State

- In recent years Vermont's asthma rate has ranked high among U. S. states and territories. In 2017, Vermont had the fifth-highest rate of current asthma.

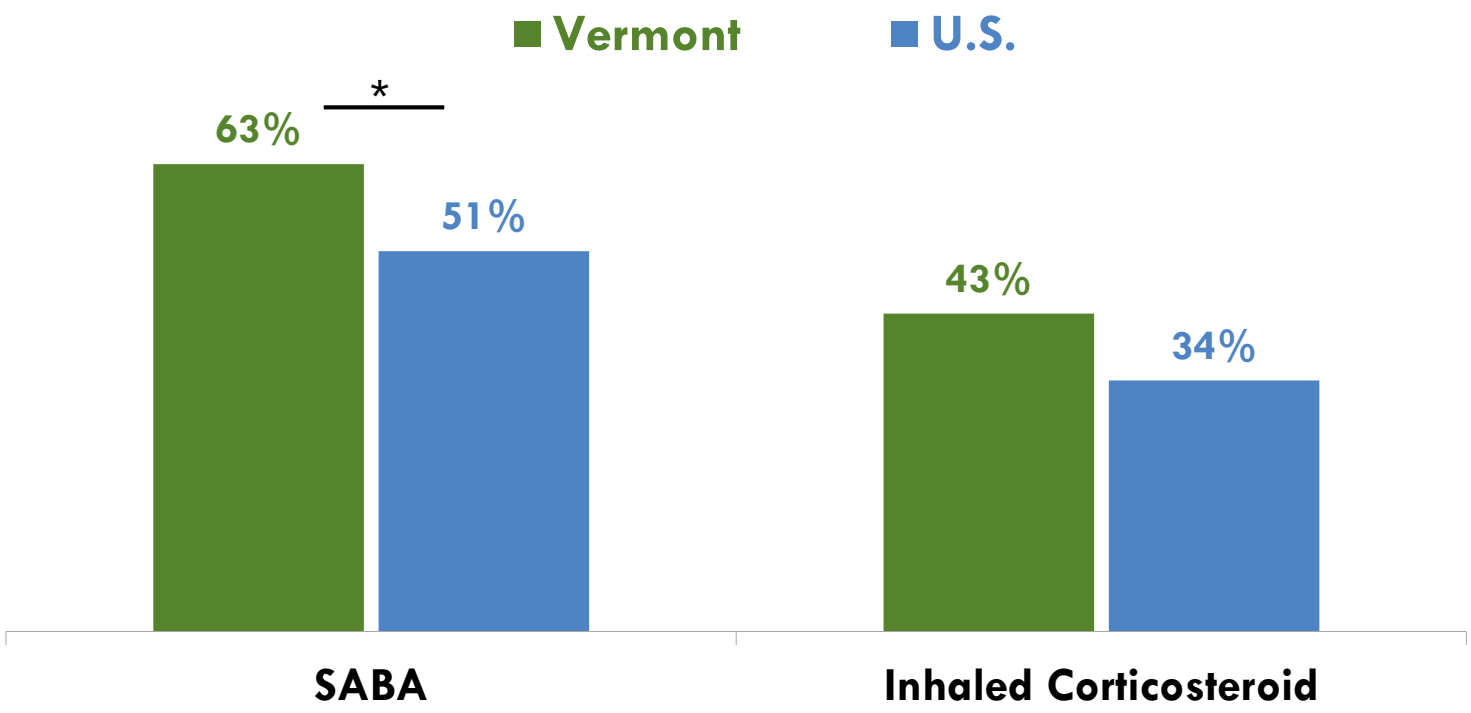


2017 Rankings		
1	NH	13%
2	WV	13%
3	RI	12%
4	PR	12%
5	VT	12%
	U. S.	9%

Vermont Department of Health - Source: 2017 U. S. BRFSS; https://nccd.cdc.gov/BRFSSPrevalence/rdPage.aspx?rdReport=DPH_BRFSS.ExploreByTopic&irbLocationType=StatesAndMMSA&islClass=CLASS03&islTopic=TOPIC06&islYear=2017&rdRnd=28217.

Vermont and U.S. Comparisons
Use of Short Acting Beta Antagonists (SABAs)

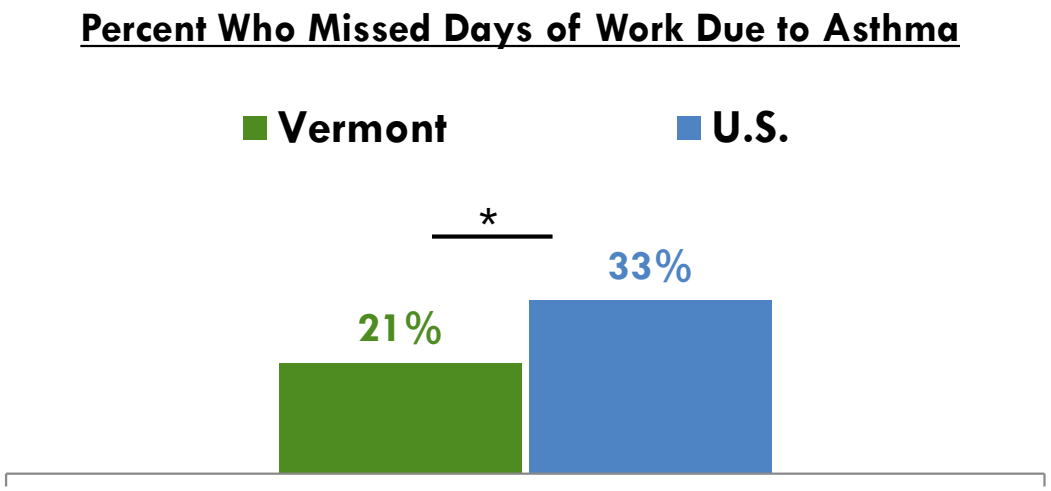
Adult Vermonters with current asthma were more likely to use SABAs compared to adults in the other U.S. states that do the Adult Asthma Callback Survey. There was no significant difference in use of inhaled corticosteroids.



Vermont Department of Health - * Significant difference between groups. Source: Vermont and U.S. Asthma Callback Survey (ACBS), 2014

Vermont and U.S. Comparisons
Absenteeism

One out of five Vermonters with asthma missed at least one day of work in the past year due to their asthma. Vermonters with asthma were significantly less likely to miss one or more days of work due to their asthma (21%) as compared to U.S. states that do the Adult Asthma Callback Survey (33%).

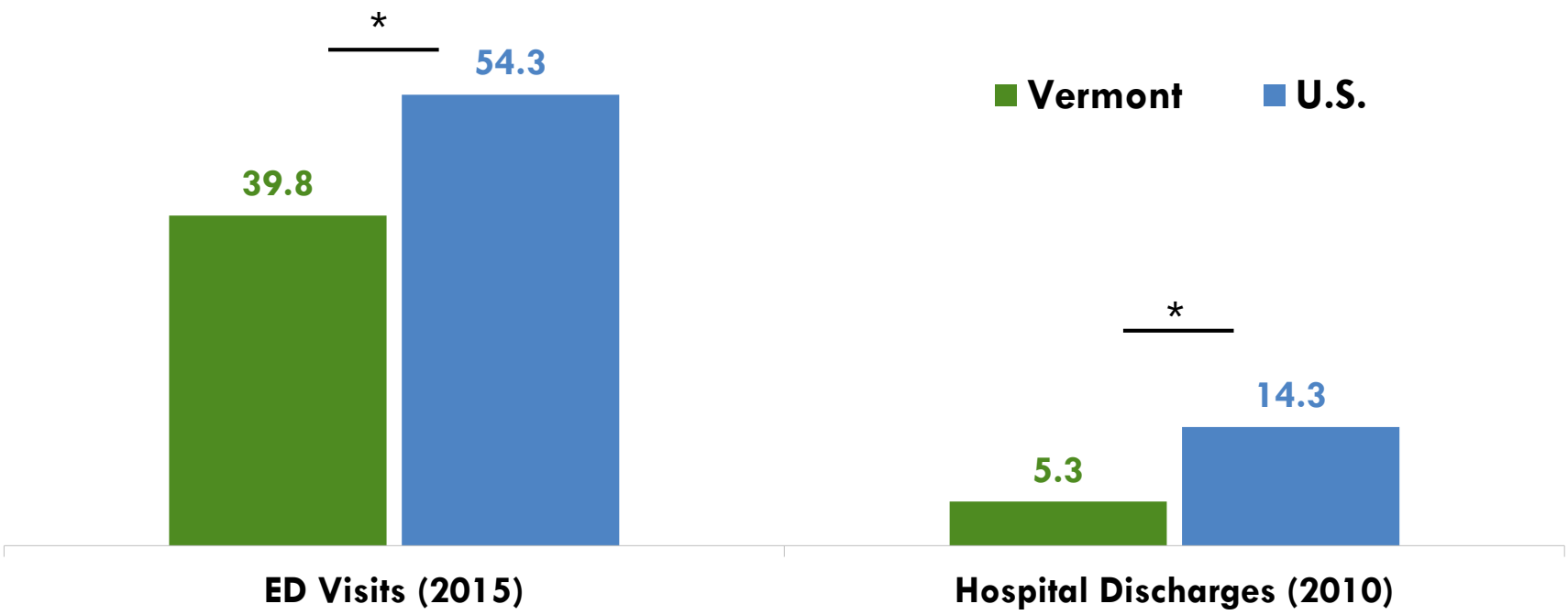


Vermont Department of Health - * Significant difference between groups. Source: Vermont and U.S. Adult ACBS 2014

Vermont and U.S. Comparisons
Emergency Department Visits and Hospital Discharges

Emergency department visits and hospital discharges for asthma as the primary diagnosis were significantly lower for Vermonters compared to the U. S. rate.

ED Visits or Hospitalizations with a Primary Asthma Diagnosis (rate per 10,000)



* Significant difference between groups.

Vermont Department of Health - Source: VUHDDS 2010, 2015; National Hospital Discharge Survey 2010, 2015

Data Sources and Notes

Behavioral Risk Factor Surveillance System (BRFSS): Annual telephone survey conducted by individual state health departments with support from the CDC regarding health risk factors, health conditions and preventative measures. One of the optional modules completed in the State of Vermont provides data on asthma prevalence in children. BRFSS data is weighted so that it is representative of the Vermont population. All analyses completed with BRFSS data utilized weighted data.

Asthma Call Back Survey (ACBS): In Vermont, this survey is conducted for both adults and children with asthma and collects more detailed information on asthma risk factors, control, severity, and self-management. Information collected for the youth ACBS is reported by a parent or guardian. Due to small sample size of the child data sets, preliminary child data for combined years (2015 and 2016) is presented.

Vermont Uniform Hospital Discharge Data Set (VUHDDS): Hospital and emergency department discharge data are collected from in-state hospitals and from hospitals in bordering states. The VUHDDS data set was narrowed to only include Vermont residents for this analysis. A primary asthma diagnosis refers to when asthma was listed as the first diagnosis code. Any asthma diagnosis refers to when asthma is listed as any of the twenty diagnosis codes.

- Patients admitted to the hospital from the ED are included in the hospital discharge data set and are not included in the ED data set.
- In 2009, the NH Department of Health and Human Services and the Department of Information Technology (DoIT), internalized the processing of their dataset. This change in the program may explain some of the differences between the 2010 data provided to VT and data provided to VT for prior years.
- MA data is not included beginning in 2014 and moving forward, but analyses show minor impact of this change.
- In quarter 4 of 2015, coding for the data set changed from ICD9 to ICD10. The ICD9 coding for asthma (493) did not transfer directly in ICD 10 (J45); some ICD9 asthma codes (493.2) translate to ICD10 codes for COPD (J44). Therefore direct comparison is not possibly between data derived from ICD9 and ICD10 coded data.

Vermont Vital Statistics System (Vitals): Monitors vital events, including deaths. Information on the cause of death is obtained from a physician and reported on the death certificate. Asthma was identified as underlying cause of death: J45 or J46.

Resources to Reduce the Burden of Asthma among Vermonters

① Vermont Asthma Program:
http://healthvermont.gov/prevent/asthma/index.aspx

② Physician's Guide to Managing and Diagnosing Asthma:
http://www.nhlbi.nih.gov/guidelines/asthma/asthma_qrg.pdf

③ Find support for you or a loved who is ready to quit smoking:
http://802quits.org/

④ CDC vaccination guidelines for those with asthma:
https://www.cdc.gov/asthma/flu.html

For additional information

Vermont Asthma Program:
http://healthvermont.gov/prevent/asthma/index.aspx

Vermont Asthma Surveillance:
http://healthvermont.gov/research/asthma/asthma_surv.aspx

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