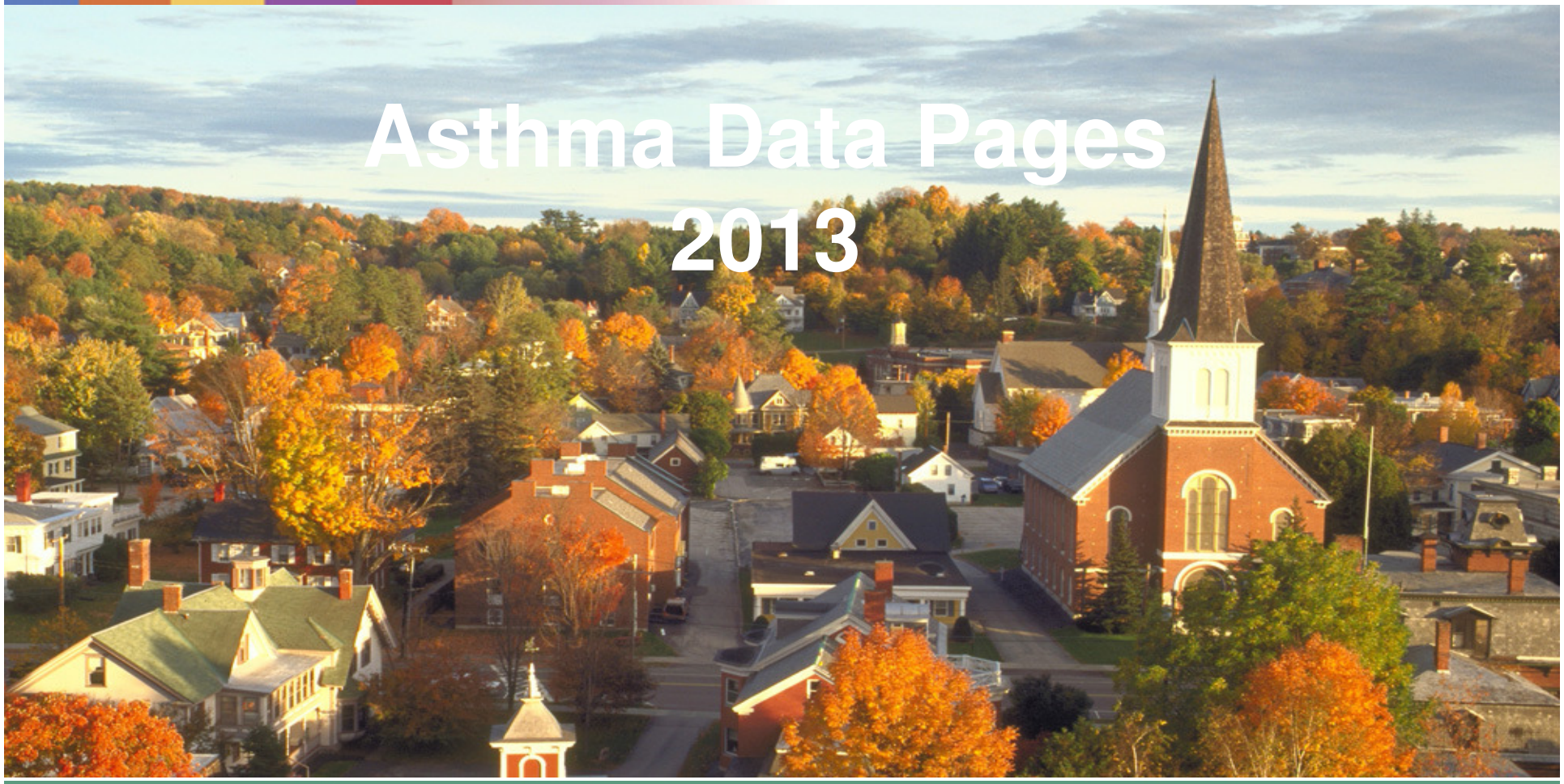
Vermont Department of Health

Asthma Data Pages 2013



Guidance • Support • Prevention • Protection

Vermont Department of Health

October, 2014

VERMONT
DEPARTMENT OF HEALTH

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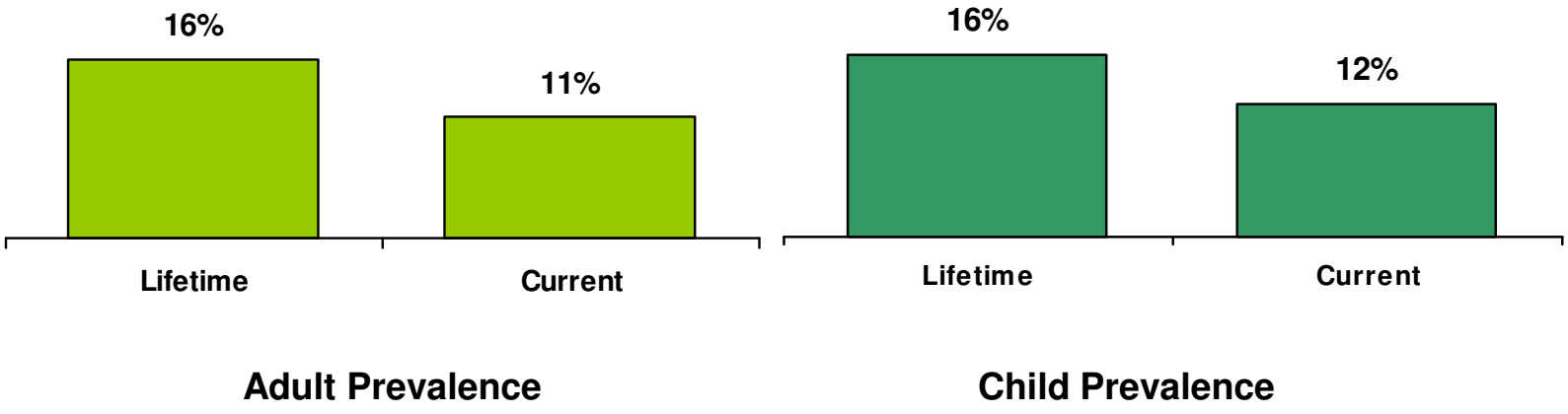
Asthma Prevalence

Asthma Prevalence In Vermont

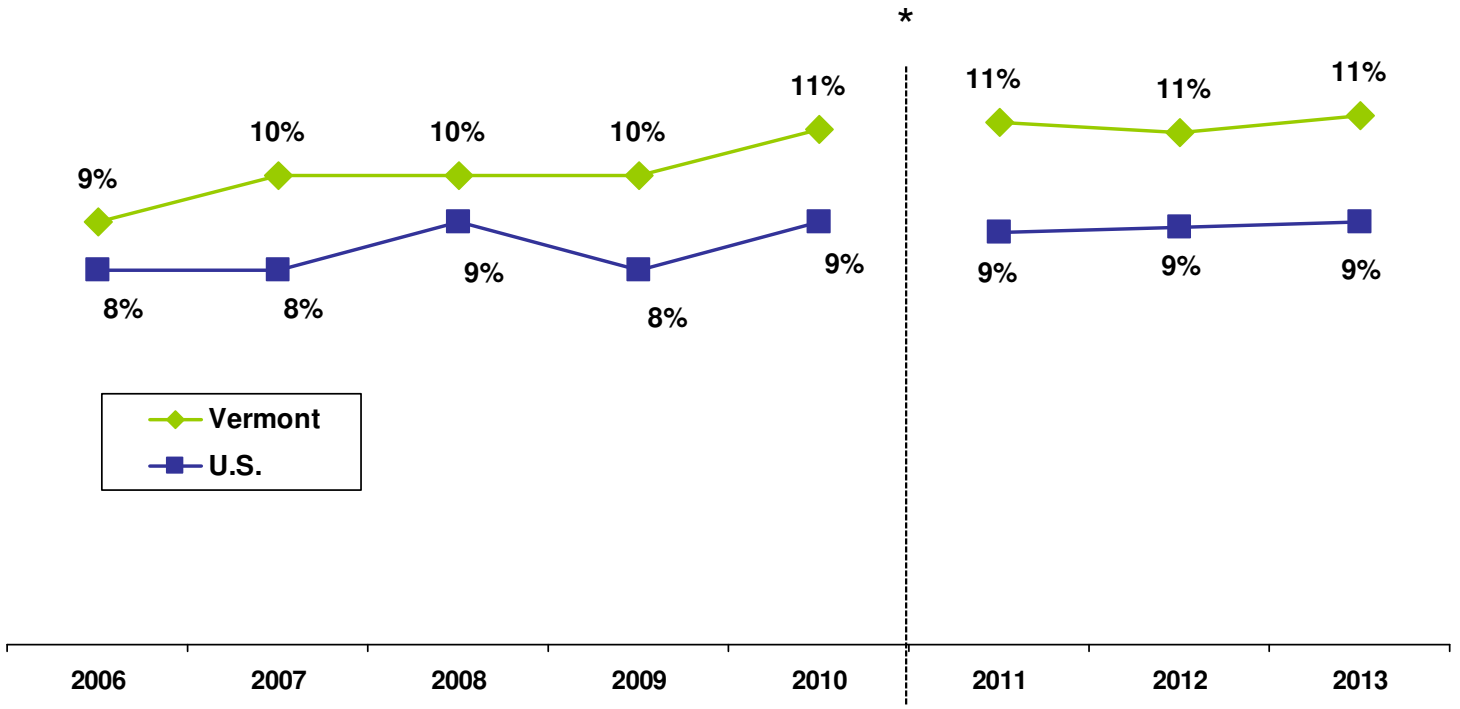
In 2013, 11% of adult Vermonters reported having current asthma and 16% of adult Vermonters reported being diagnosed with asthma at some point in their lifetime. This equated to approximately 57,000 adult Vermonters with current asthma in 2013. One in 8 children in Vermont had current asthma in 2013, which equates to approximately 13,000 children.



Source: Behavioral Risk Factor Surveillance System, Adult 2013, Child 2013

Asthma Prevalence Among Adults

From 2007-2013, the prevalence of asthma in adult Vermonters has been significantly higher than the adult asthma prevalence in the U.S.

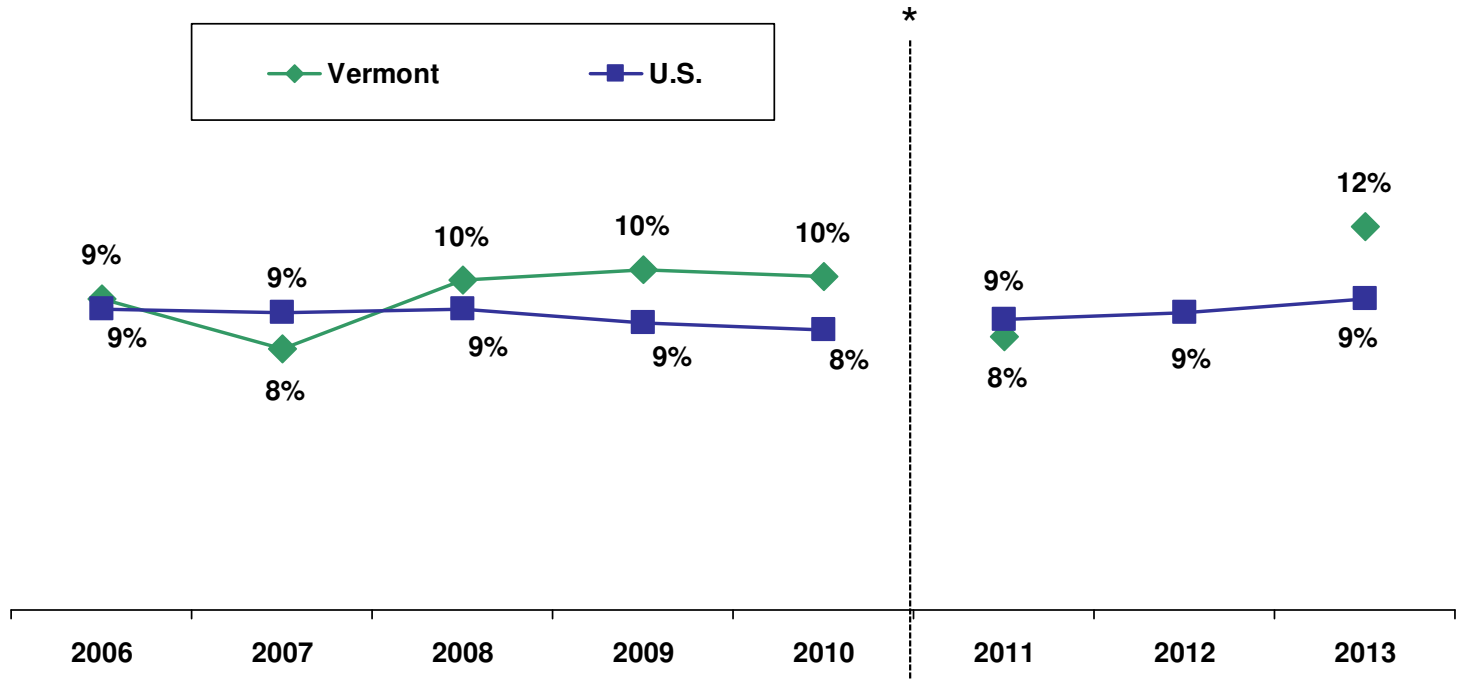


* Due to weighting methodology changes beginning in 2011, comparisons between data collected in 2011 and later and that from 2010 and earlier should be made with caution.

Source: VT Behavioral Risk Factor Surveillance System, 2006-2013; US BRFSS, 2006-2013

Asthma Prevalence Among Children

From 2006-2013, the prevalence of asthma among Vermont youth has not been significantly different from the prevalence in the U.S.

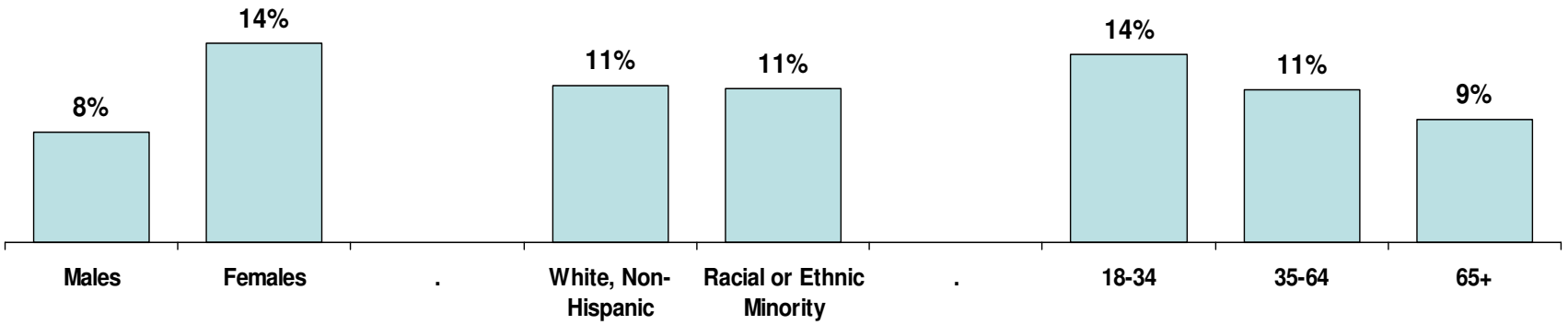


* Due to weighting methodology changes beginning in 2011, comparisons between data collected in 2011 and later and that from 2010 and earlier should be made with caution.

Source: VT and US Behavioral Risk Factor Surveillance System, 2006-2013, VT data for 2012 not available; Child defined as 17 years of age or less.

Asthma Prevalence Among Adults

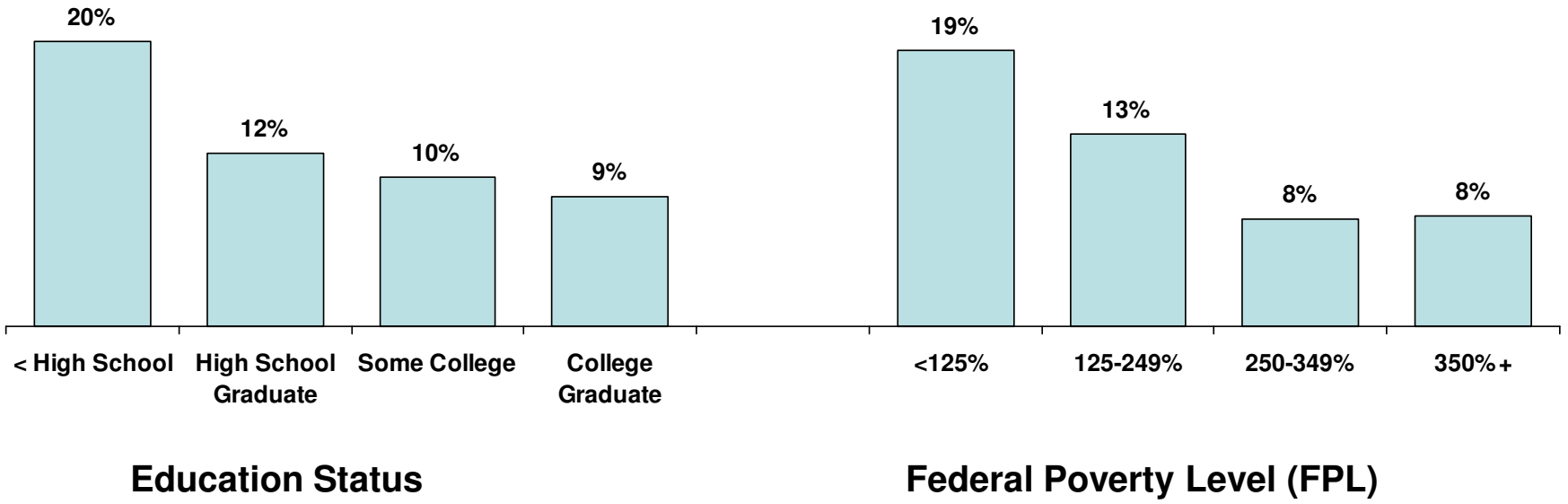
Women had a significantly higher prevalence of current asthma compared to men. Asthma prevalence did not differ significantly across racial groups. Adults 18-34 years of age had significantly higher prevalence of current asthma than adults 65 years and older.



Source: Behavioral Risk Factor Surveillance System, 2013

Adult Asthma Prevalence by Education and Income

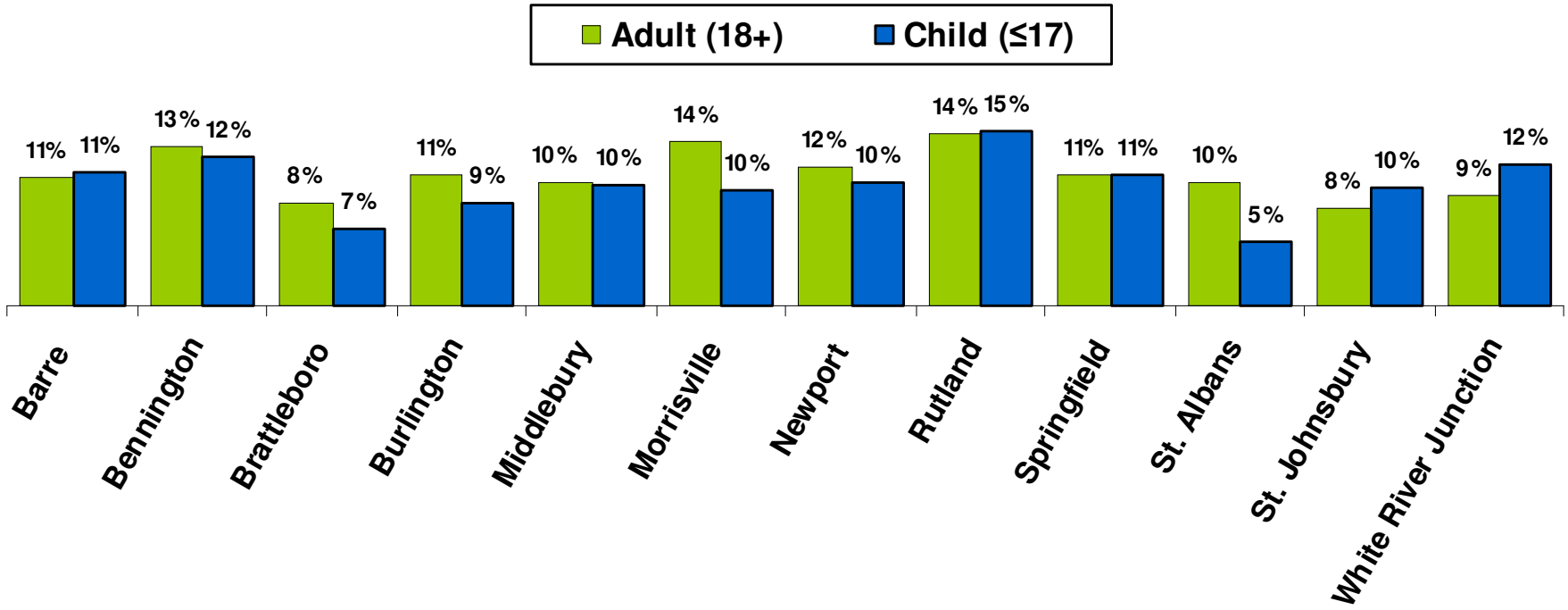
Adults that did not graduate from high school had a significantly higher prevalence of current asthma than Vermonters with higher levels of education. Adults with a household income closer to the federal poverty level (FPL < 249%) had a significantly higher prevalence of current asthma than those with higher levels of household income.



Source: Behavioral Risk Factor Surveillance System, 2013

Adult and Child Asthma Prevalence by District Office

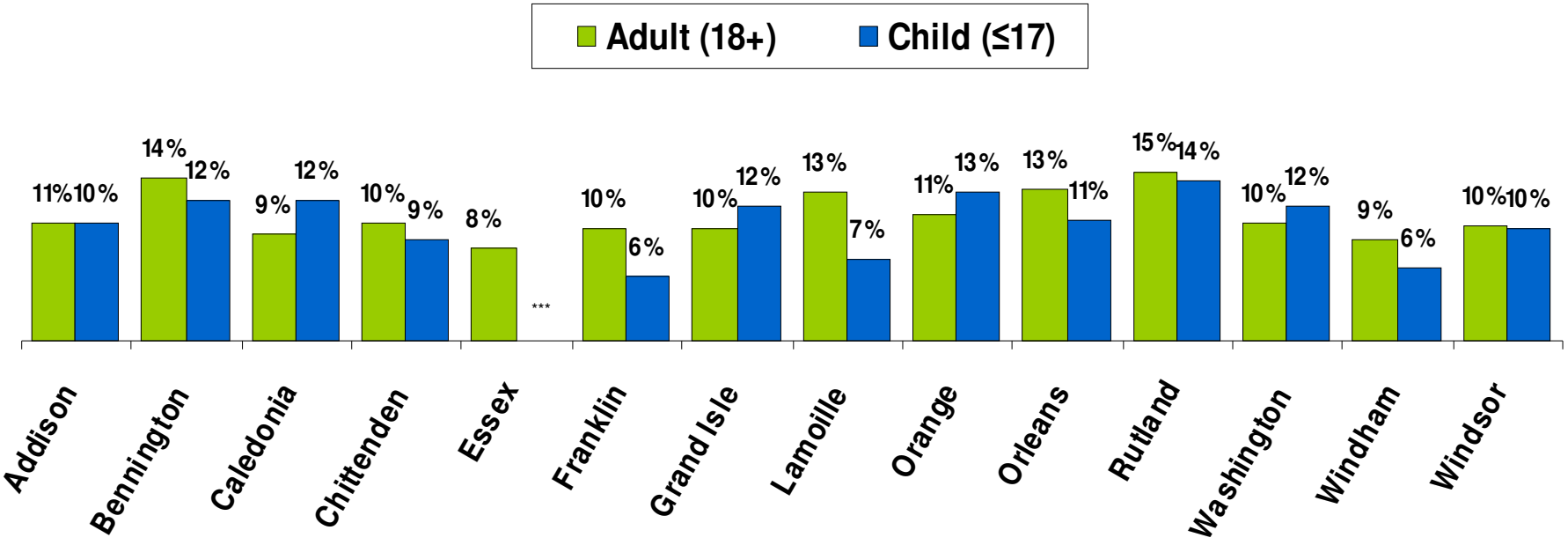
The prevalence of current asthma in adult Vermonters ranged from 8% at the Brattleboro and St. Johnsbury District Offices to 14% at the Morrisville and Rutland District Offices (DO). Child asthma prevalence followed a similar pattern. There were no statistically significant differences between current asthma prevalence by DO and the statewide prevalence for adults or children.



Source: Behavioral Risk Factor Surveillance System, Adult 2012-2013, Child 2011, 2013

Adult and Child Asthma Prevalence by County

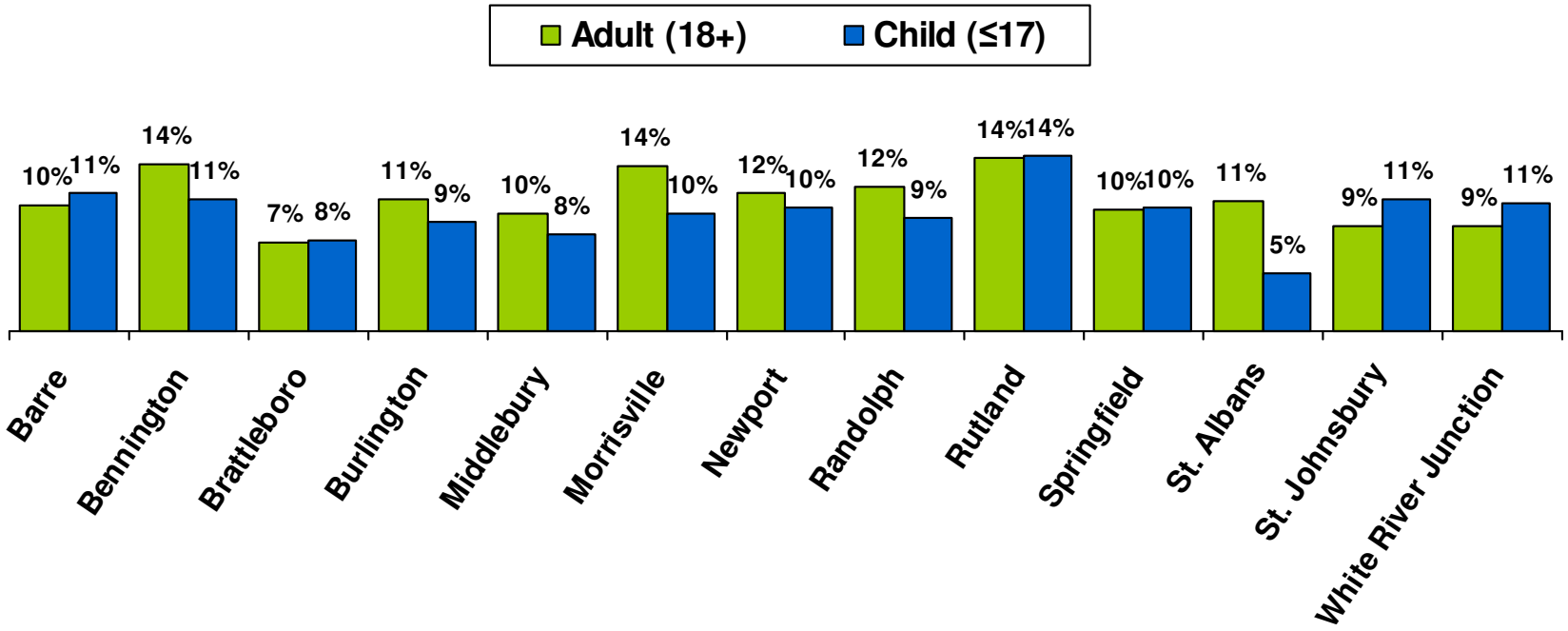
Current asthma prevalence among Vermont adults ranged from 8% in Essex County to 15% in Rutland county. The current asthma prevalence in Rutland county was significantly greater than the state prevalence. Child asthma prevalence by county followed a similar trend though no counties were significantly different from the statewide child prevalence.



Source: Behavioral Risk Factor Surveillance System, Adult 2012-2013, Child 2011, 2013; *** Numbers too small to report.

Adult and Child Asthma Prevalence by Hospital Service Area

Current asthma prevalence of adult Vermonters ranged from 7% in the Brattleboro hospital service area (HSA) to 14% in the Bennington, Morrisville and Rutland HSAs. The asthma prevalence in Brattleboro HSA was significantly lower than the statewide prevalence. The child asthma prevalence in St. Albans was significantly less than the statewide child prevalence.



Source: Behavioral Risk Factor Surveillance System, Adult 2012-2013, Child 2011, 2013

Asthma Morbidity

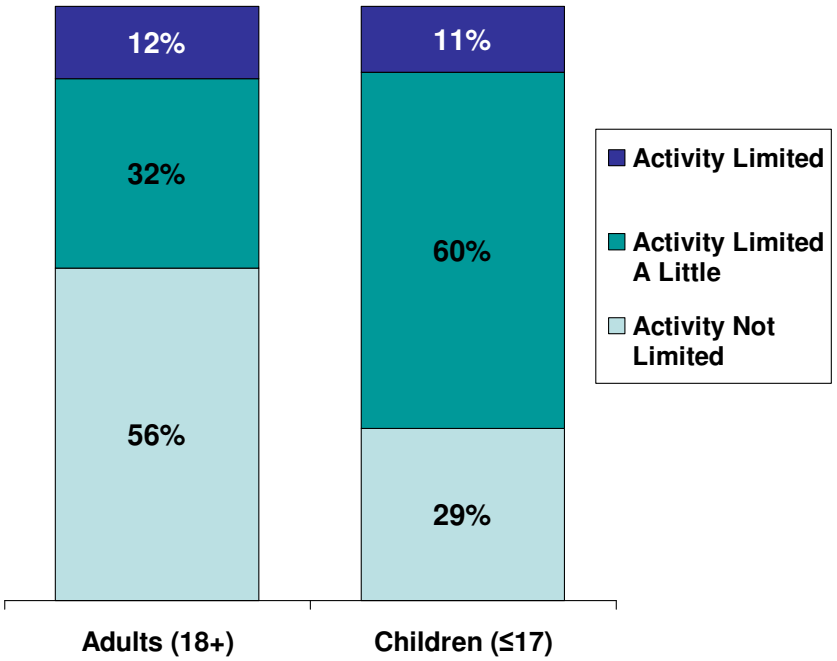
Quality of Life

Activity Limitation
Forty-four percent of adults and seven in ten youths indicated their daily activities were at least a little limited by asthma.

Sleep
Among adults with current asthma, 22% reported that symptoms made it difficult for them to sleep on one or more nights in the past month.

Absenteeism
Approximately one in five adults with asthma reported missing at least one day of work in the past year due to their asthma (19%). In 2010, nearly half of school-aged youths with asthma missed school at least once in the past year because of their asthma (46%).

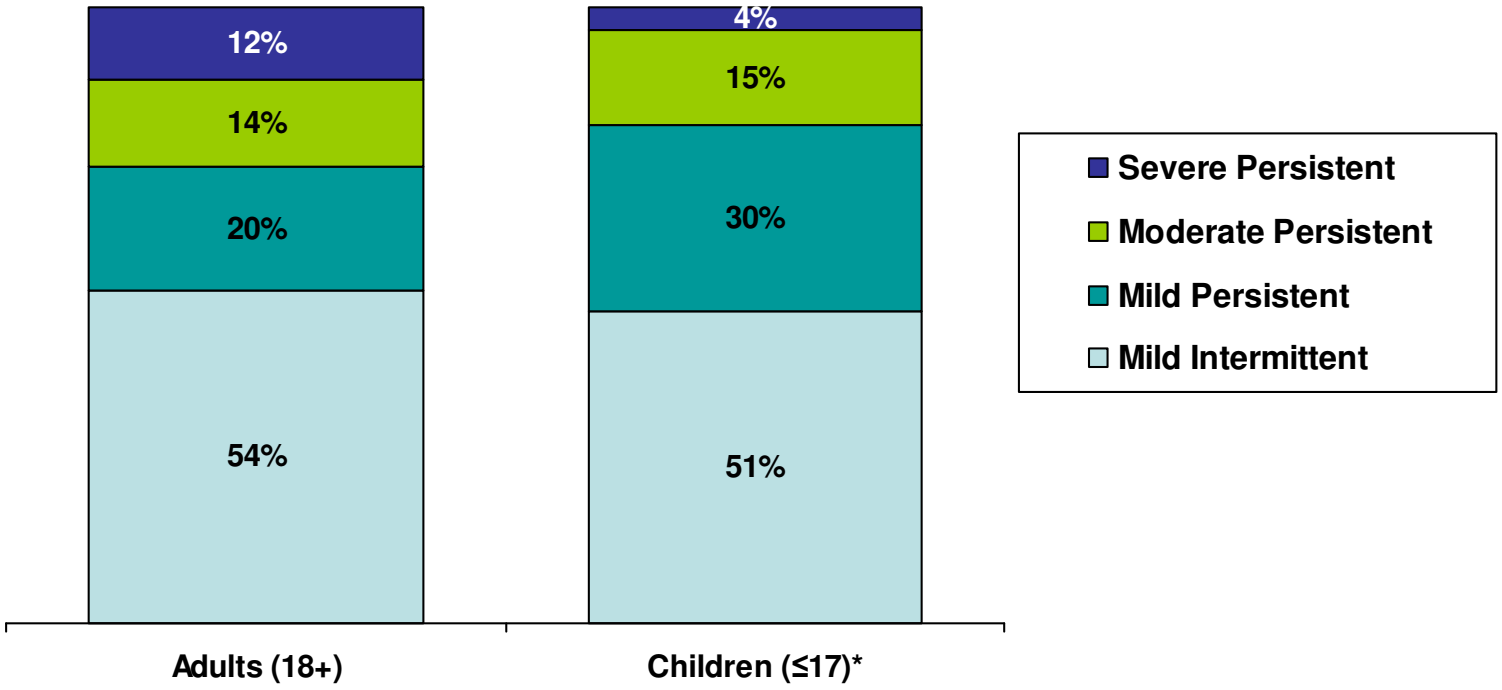
Activity Limitations Among Those with Current Asthma



Source: Asthma Callback Survey, Adult 2013, Child 2010

Quality of Life - Asthma Severity

Approximately half of adults and youths with current asthma reported that their asthma was mild and intermittent. One out of four of adults and one out of five youths reported either moderate or severe asthma.



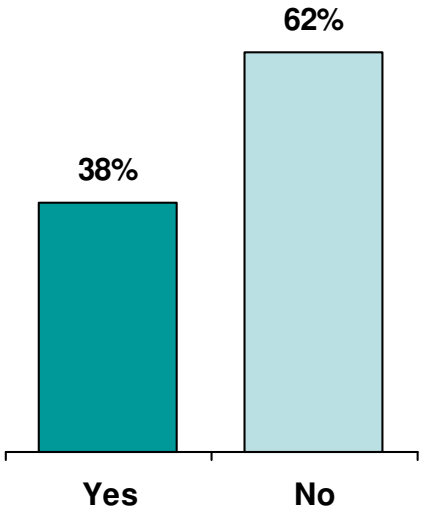
*Due to small numbers, youth data includes 2009-2010 data

Source: Adult Asthma Callback Survey 2013, Child Asthma Callback Survey, 2009-2010

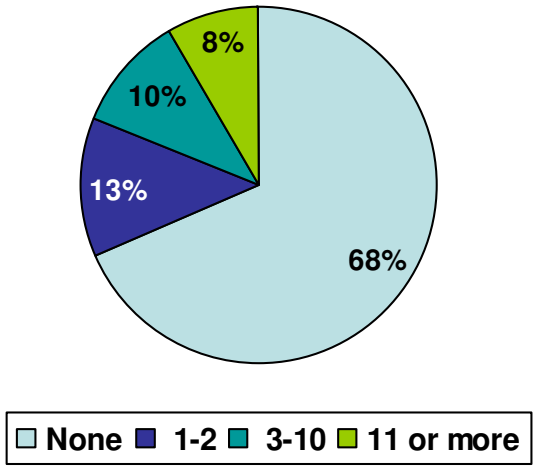
Asthma Exacerbations- Adult

Approximately 4 out of 10 adults with current asthma reported that they experienced an asthma exacerbation within the past year. One in five adults with current asthma experienced 3 or more episodes of asthma exacerbation within the last 3 months. The duration of the last asthma exacerbation ranged from minutes to hours for the majority of adults with current asthma (82%) while 18% of respondents experienced exacerbations lasting days to weeks.

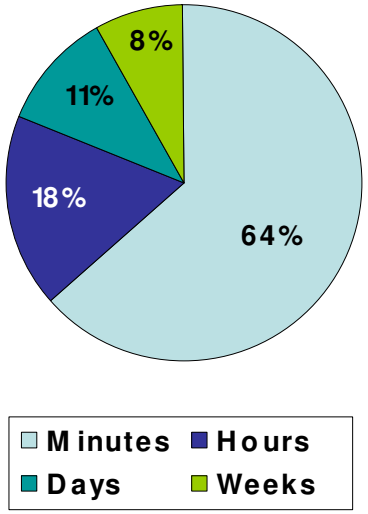
Asthma exacerbation within past 12 months?



Number of asthma exacerbations within past 3 months



Duration of last asthma exacerbation

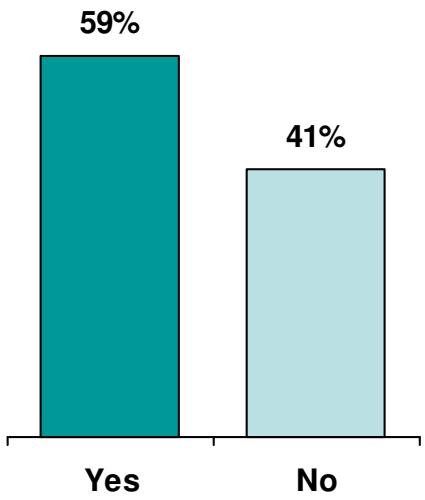


Source: Adult Asthma Callback Survey 2013

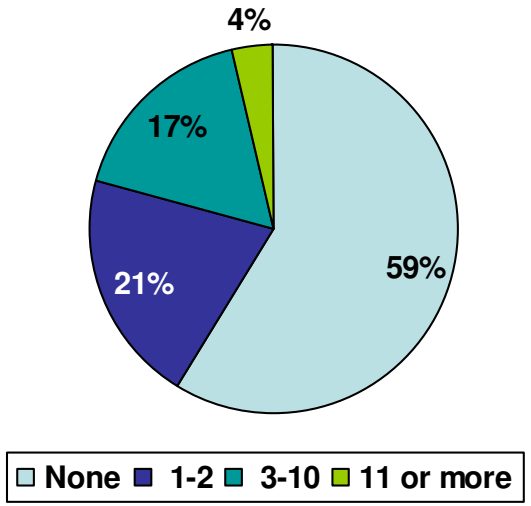
Asthma Exacerbations- Child

Approximately 6 out of 10 children with current asthma experienced an asthma exacerbation within the past year. Twenty-one percent of children with current asthma experienced 3 or more episodes of asthma exacerbation within the last 3 months. The duration of the last asthma exacerbation ranged from minutes to hours for the majority of children with current asthma (64%) while 36% experienced exacerbations lasting days to weeks.

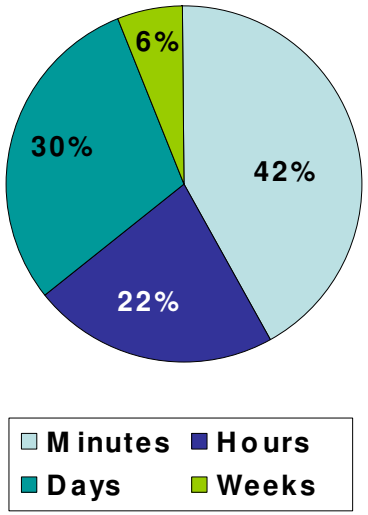
Asthma exacerbation within past 12 months?



Number of asthma exacerbations within past 3 months



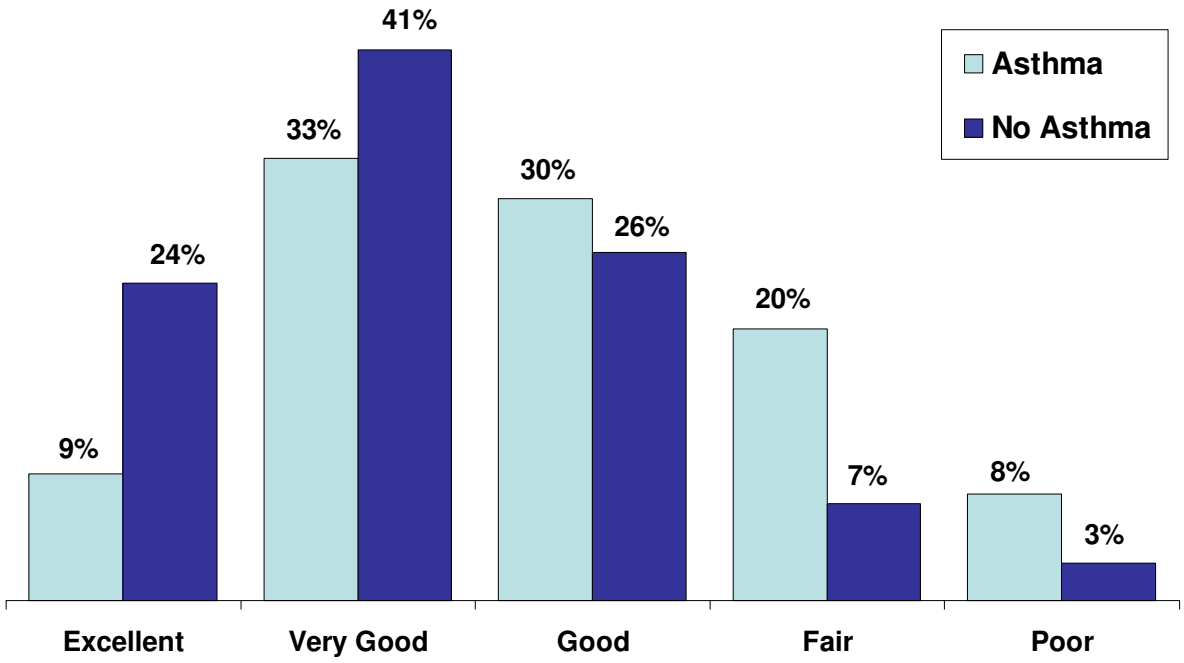
Duration of last asthma exacerbation



Source: Child Asthma Callback Survey 2009-2010

Asthma and Overall Health Status

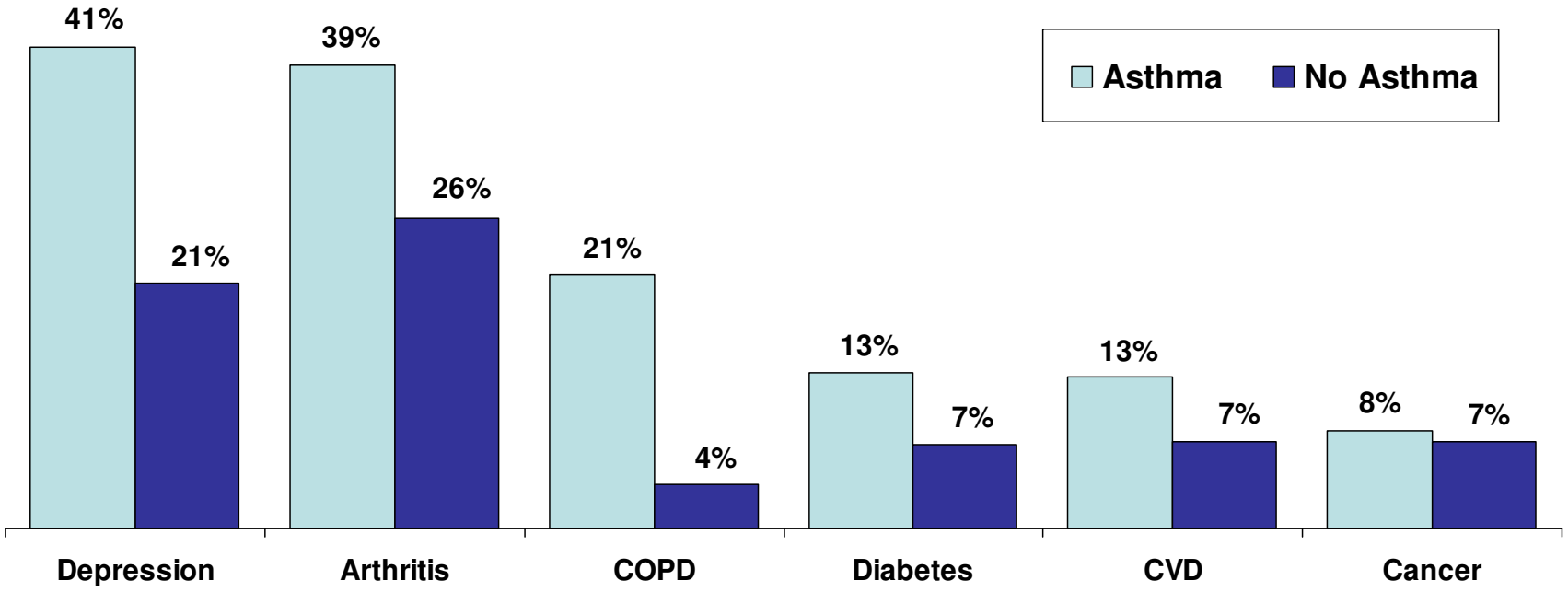
Adults with current asthma were significantly less likely to rate their health as excellent or very good and more likely to rate their health as fair or poor and when compared to adults that do not have asthma.



Source: Behavioral Risk Factor Surveillance System, 2013

Adult Asthma Co-Morbidities

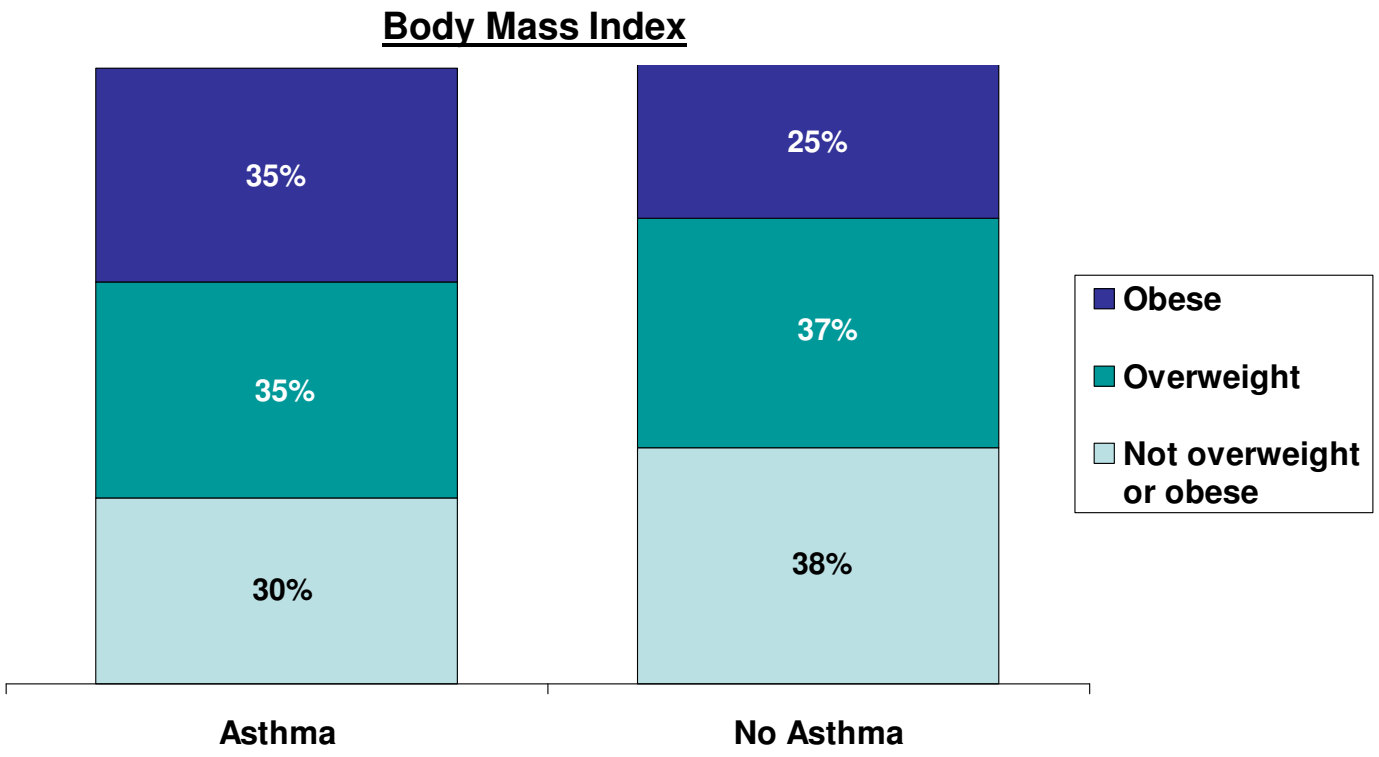
Those with current asthma were significantly more likely to report arthritis, depression, chronic obstructive pulmonary disease (COPD), diabetes, and cardiovascular disease (CVD) than those without asthma. There were no significant differences in cancer rates based on current asthma status.



Source: Behavioral Risk Factor Surveillance System, 2013

Adult Asthma Comorbidities

Vermont adults with current asthma were significantly more likely to be obese than those without asthma.

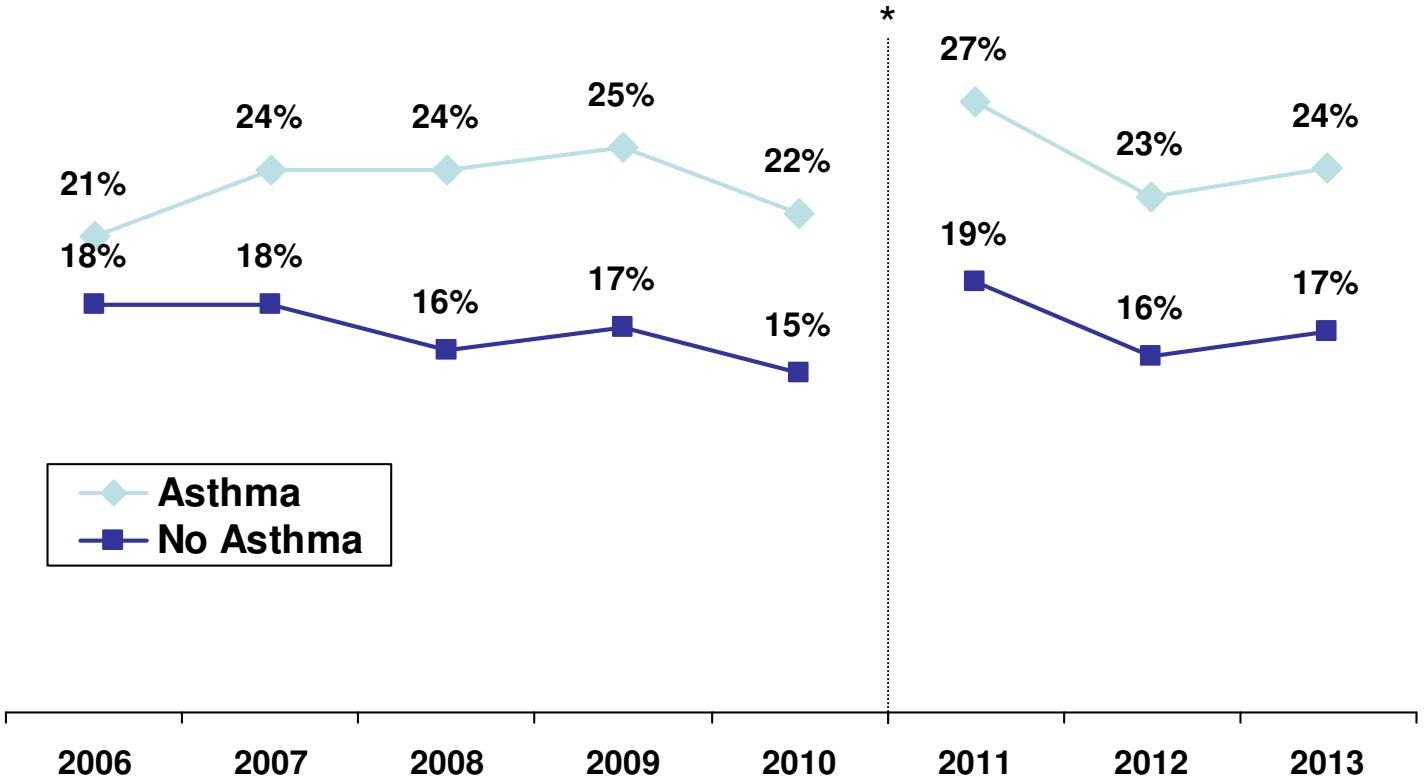


Source: Behavioral Risk Factor Surveillance System, 2013; Data are age adjusted to the 2000 U.S. standard population.

Asthma Risk Factors

Asthma Risk Factors – Smoking Prevalence

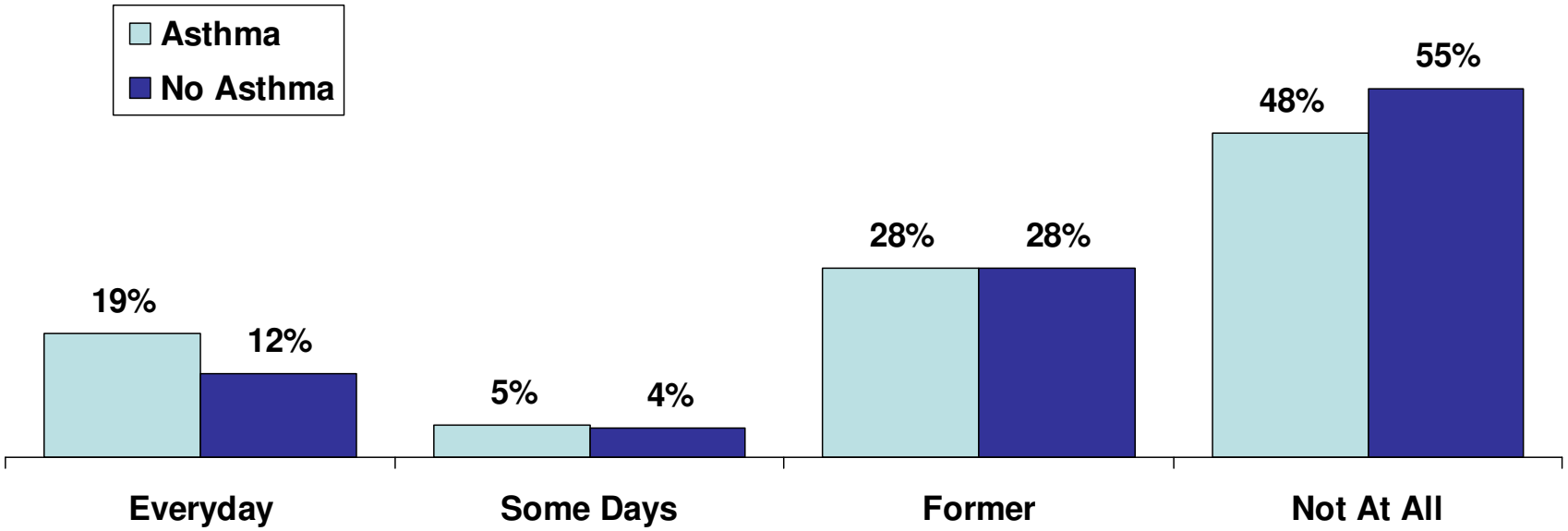
In the past several years, there has been a higher prevalence of smoking among adult Vermonters with current asthma than adults that do not have asthma. For each year since 2007, adult Vermonters with current asthma were significantly more likely to smoke than adults without asthma.



Source: Behavioral Risk Factor Surveillance System, 2006-2013; Data are age adjusted to the 2000 U.S. standard population.
* 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.

Asthma Risk Factors - Smoking

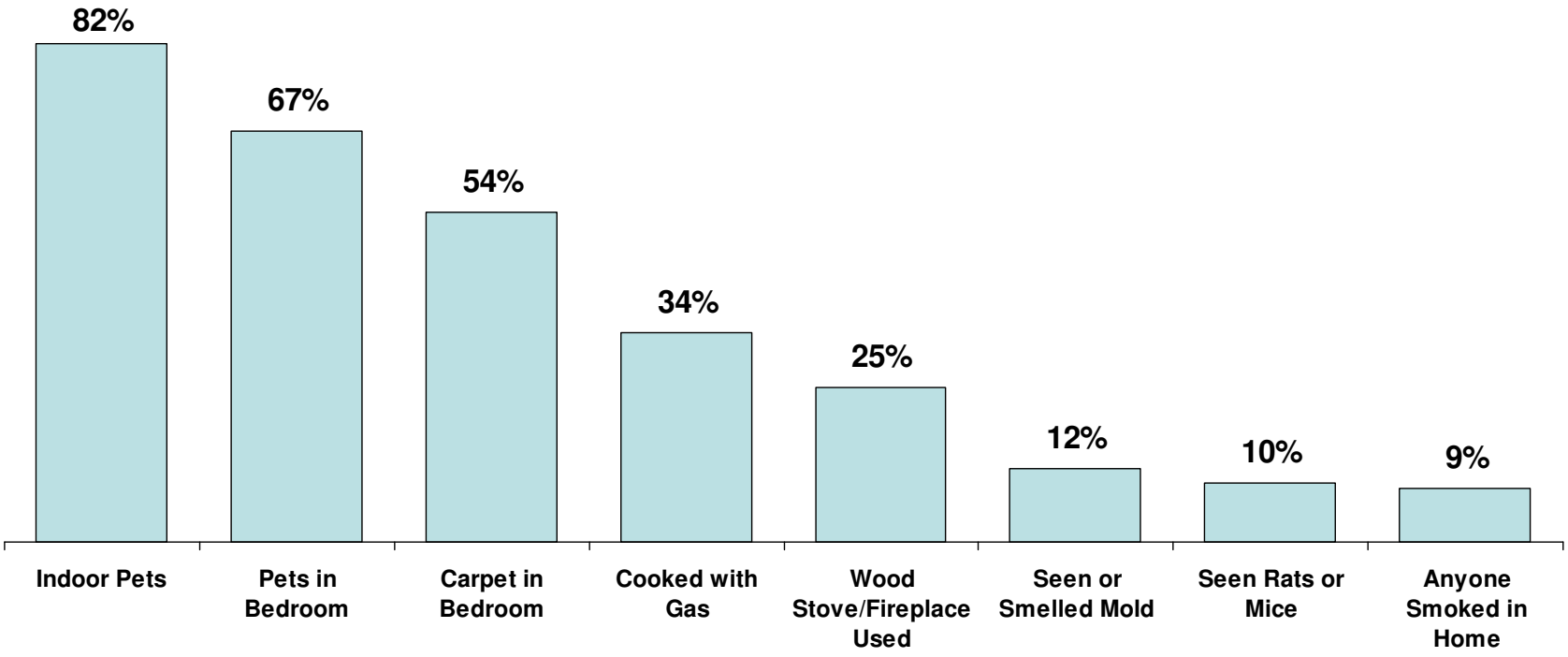
Adults with current asthma were significantly more likely to smoke everyday than adults that did not have asthma (19% and 12% respectively). The number of quit attempts, where one stops smoking for at least a day, was similar among adults with current asthma (60%) and adults without asthma (56%).



Source: Behavioral Risk Factor Surveillance System, 2013. ; Data are age adjusted to the 2000 U.S. standard population.

Asthma Risk Factors - Individual Triggers at Home

In 2013, the most common environmental trigger among adults with current asthma was having an indoor pet. Allowing pets in the bedroom and carpeting in one's bedroom were also common with more than half of adults with current asthma reporting each respective trigger. The least common trigger was having anyone smoke inside one's home.

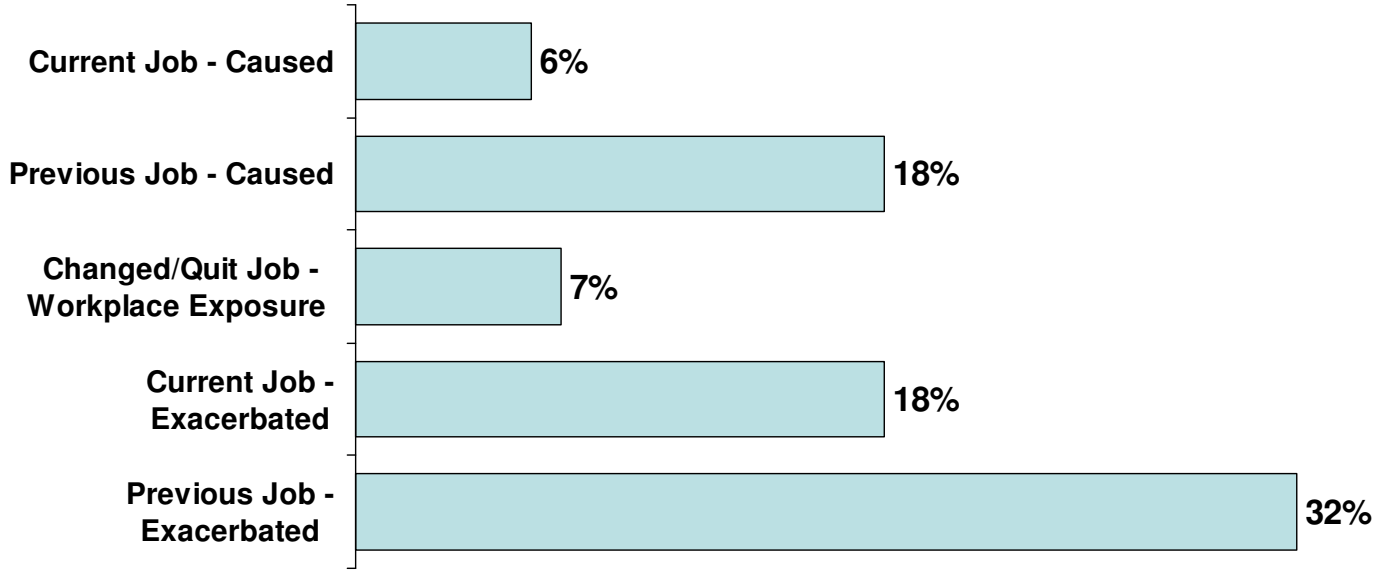


Source: Asthma Callback Survey, 2013

Asthma Risk Factors - Workplace Exposure

In 2013, 6% of Vermont adults with current asthma indicated they believe their asthma was caused by chemicals, smoke, fumes, or dust at their current workplace. Another 18% believe their asthma was made worse by these factors in their current job. Among adults with current asthma, 7% reported quitting a job due to workplace factors they believed caused their asthma or made it worse.

Despite the relatively high percentage of adults who reported issues with workplace exposures and asthma exacerbation, only 10% had told a doctor they believed their asthma was related to work and only 8% had actually been told by a doctor that their asthma was related to their work. Fourteen percent of adults with current asthma reported discussing with their health care provider whether their asthma may be work related.



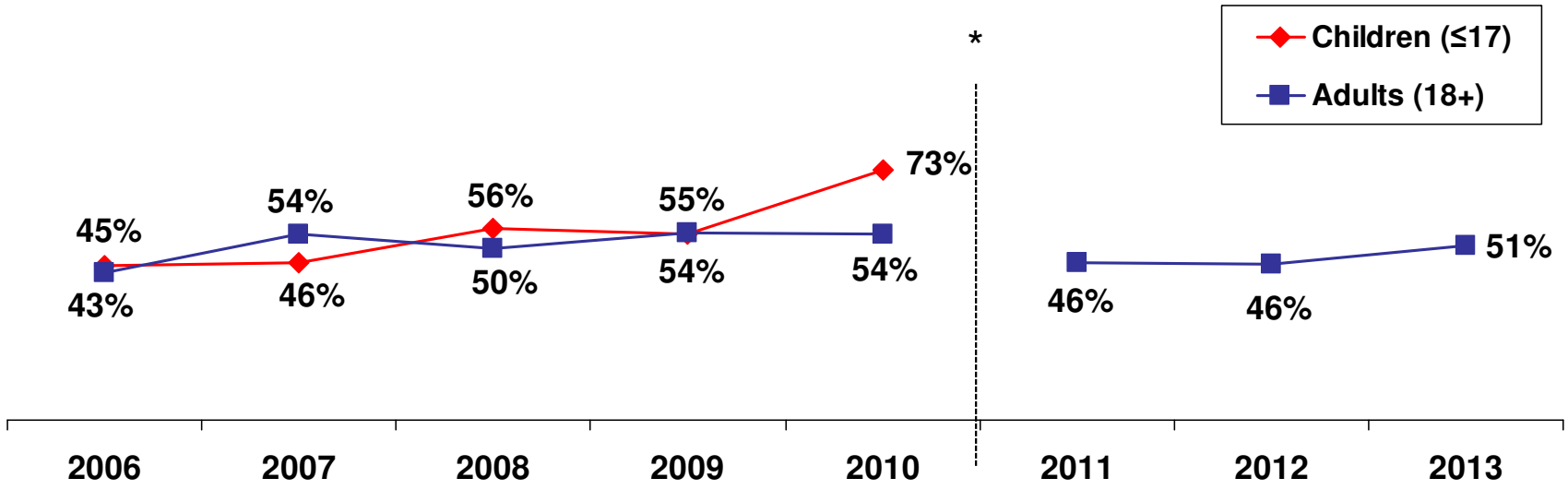
Source: Asthma Callback Survey, 2013

Asthma Risk Factors - Immunization

In 2013, approximately half of adults with current asthma (51%) had a flu shot/spray within the previous year. Among youths with current asthma in 2010, 73% had a flu vaccination within the previous year.

Adults with asthma were significantly more likely to receive a pneumonia vaccine (47%) when compared to adults without asthma (32%) in 2013.

Flu Vaccine in the Past Year - Current Asthma



Source: Behavioral Risk Factor Surveillance System, 2006-2013 and Child Asthma Callback Survey, 2006 – 2010

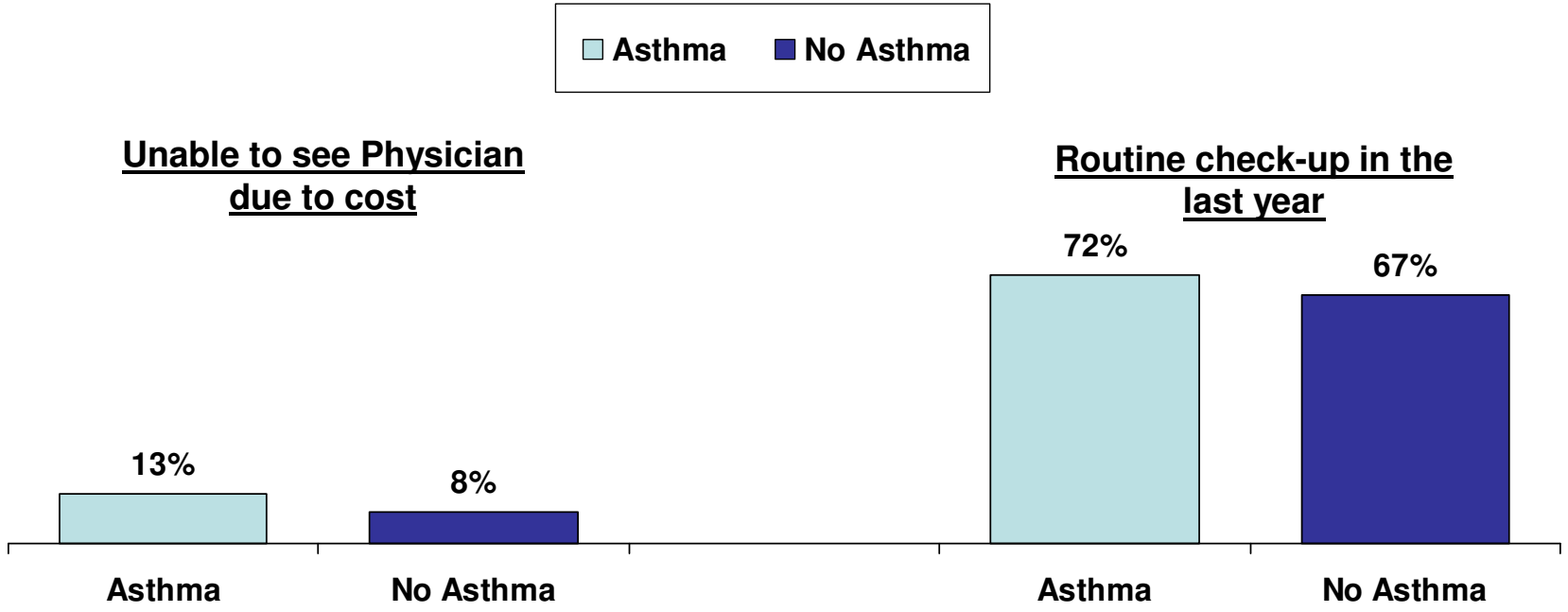
* Due to change in survey methodology, comparisons between data collected in 2011 and later and that from 2010 and earlier should be made with caution.

Self and Clinical Care Management

Health Care and Health Insurance

In 2013, 90% of adults with current asthma reported they had some type of health care coverage, which could include private insurance or government plans such as Medicare. However, 16% of adults with current asthma reported having a gap in health insurance during the last 12 months.

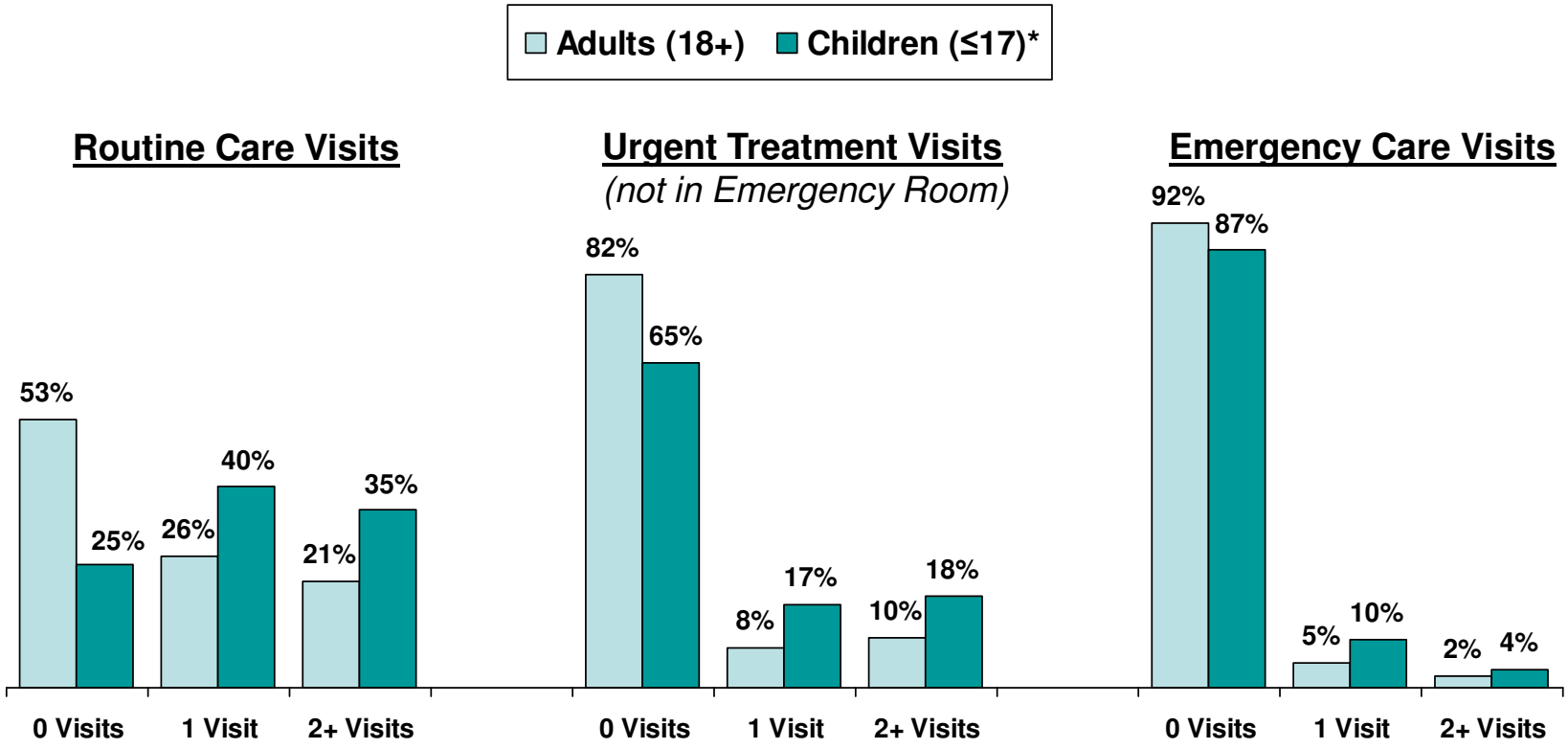
Adults with current asthma were significantly more likely to report that they could not see a physician due to cost than those without asthma. Approximately 3 out of 4 adults with current asthma had a routine check-up in the last year.



Source: Adult Asthma Callback Survey, 2013 and Behavioral Risk Factor Surveillance System, 2013

Asthma Management – Clinical Care

More than half of all adults with asthma reported no routine care visit for their asthma in the last 12 months. Compared to adults, a higher proportion of youth had one or more routine or urgent care visits. Nine out of ten adults and youths did not need an emergency care visit for their asthma.

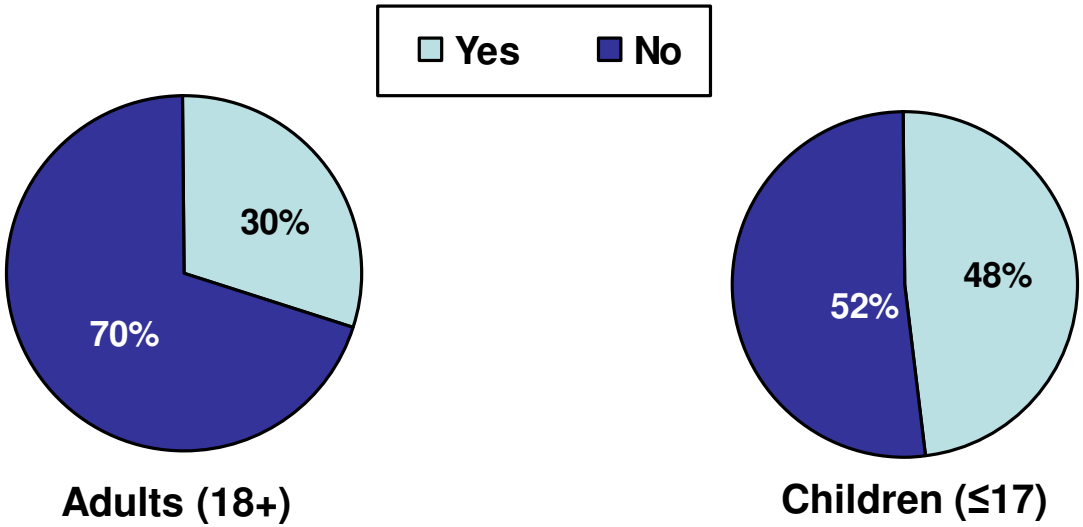


Source: Adult Asthma Callback Survey, 2013, Child Asthma Callback Survey, 2009-2010; *Due to small numbers, child data includes 2009-2010 data.

Asthma Management – Action Plans

Approximately three in ten adult Vermonters with current asthma reported having ever received an asthma action plan from a health care provider. Almost half of youths had ever received an asthma action plan from their health care provider.

Have you ever received an asthma action plan?

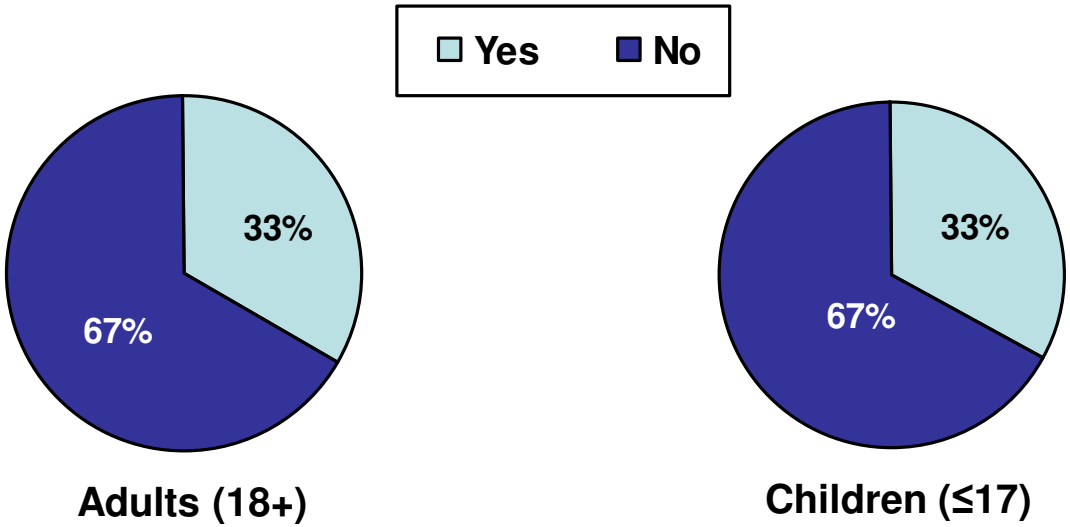


Source: Adult Asthma Callback Survey, 2013, Child Asthma Callback Survey, 2010; Data are age adjusted to the 2000 U.S. standard population.

Asthma Management – Advised to Modify Environment

One third of Vermont adults and youths with current asthma report that they have been advised by their health professional to change things in your home, school, or work to improve their asthma.

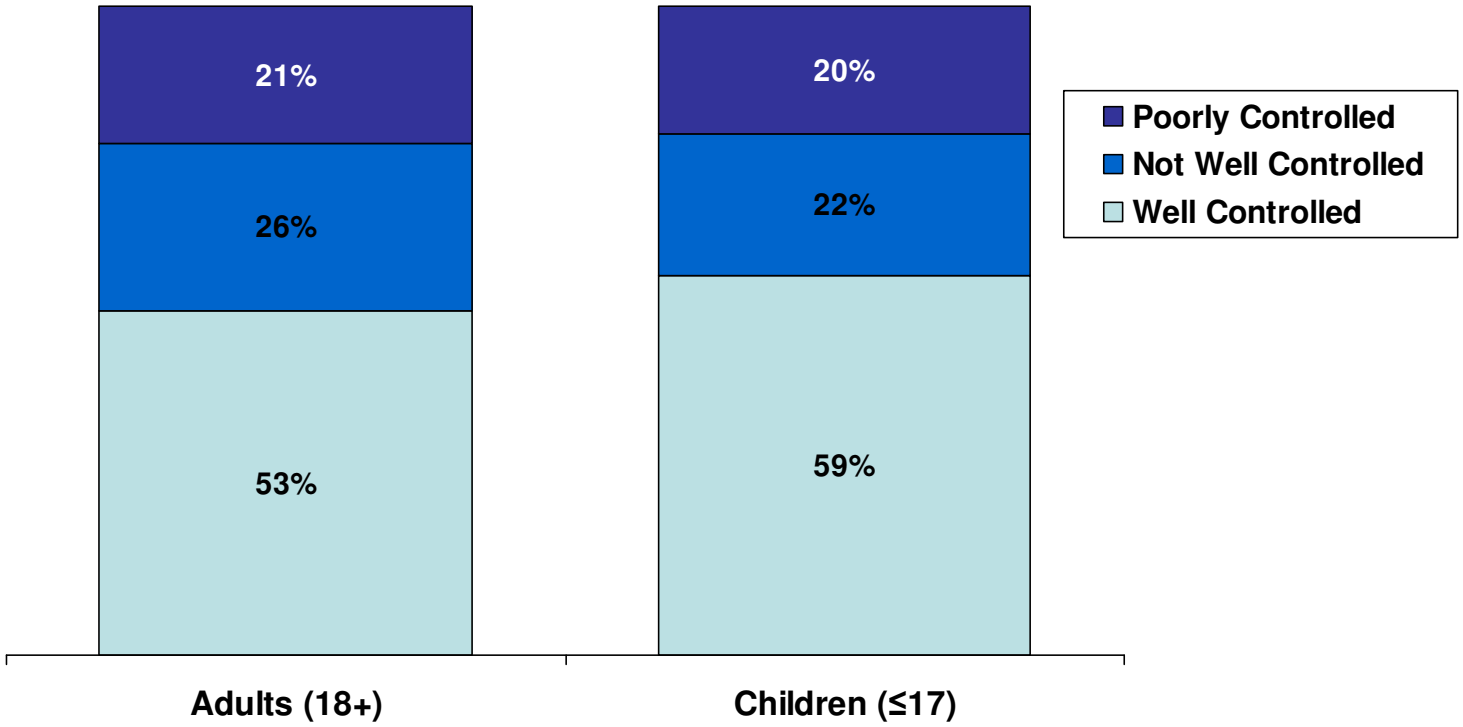
Have you ever been advised to modify things your environment?



Source: Adult Asthma Callback Survey, 2013, Child Asthma Callback Survey, 2010; Data are age adjusted to the 2000 U.S. standard population.

Asthma Management - Control

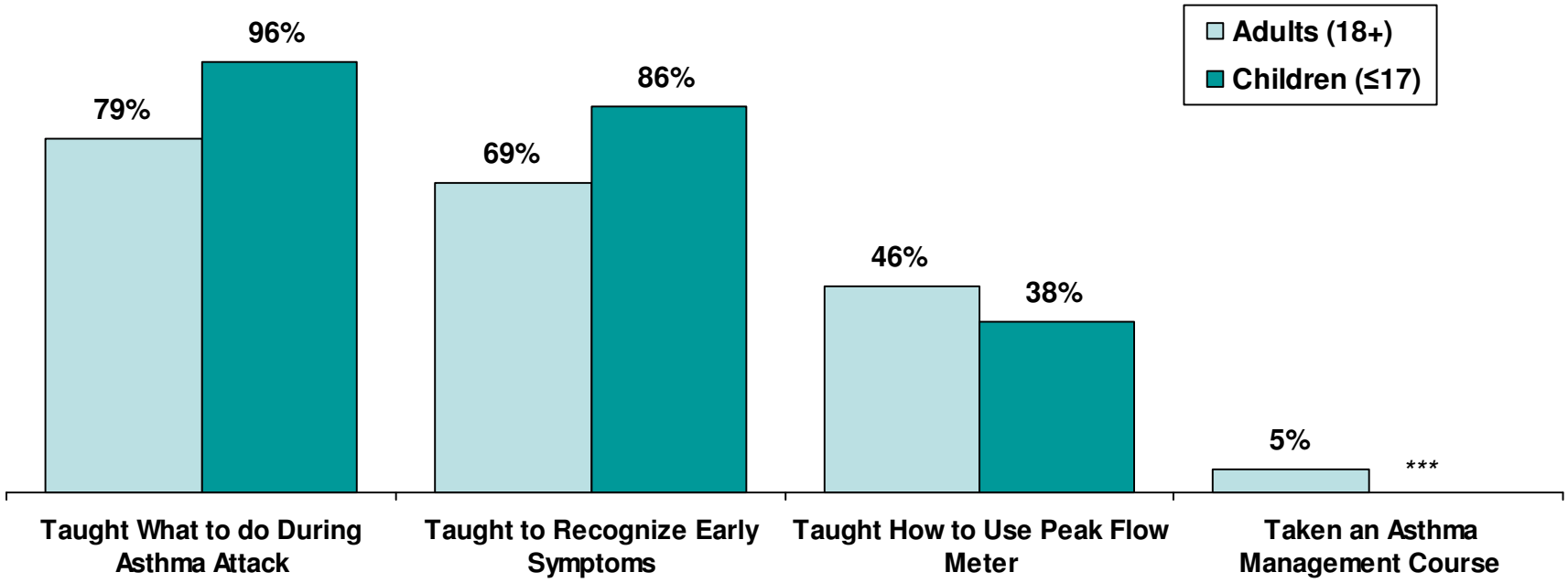
Among those Vermonters with current asthma, over half had their asthma well controlled. One quarter of adults and youths had their asthma not well controlled. Approximately one in five adults and youth had asthma that was very poorly controlled.



Source: Adult Asthma Callback Survey, 2013, Child Asthma Callback Survey, 2010

Asthma Management – Self Care

The majority of adults (79%) and youths (96%) with asthma reported that they were taught what to do during an asthma attack. Two-thirds of adults and most youths reported being taught to recognize early symptoms. Less than half of adults and youths reported being taught to use a peak flow meter. Very few adults and youths have ever taken an asthma management course.

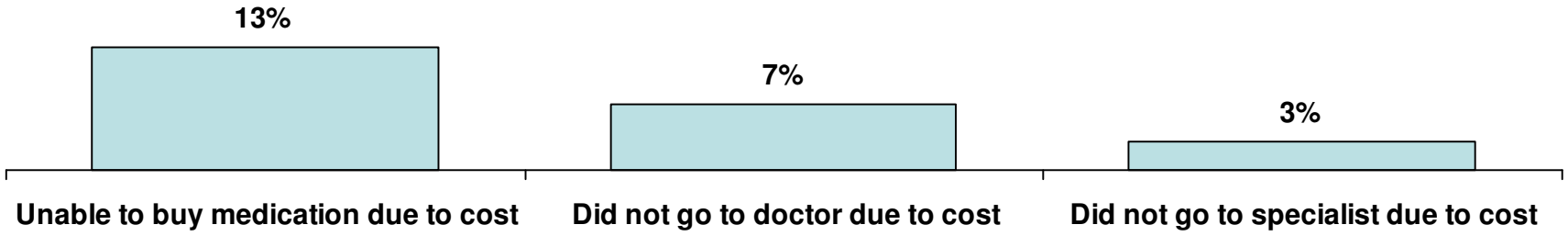


*** *Youth number too small to report*

Source: Adult Asthma Callback Survey, 2013, Child Asthma Callback Survey, 2010

Cost Barriers to Asthma Care

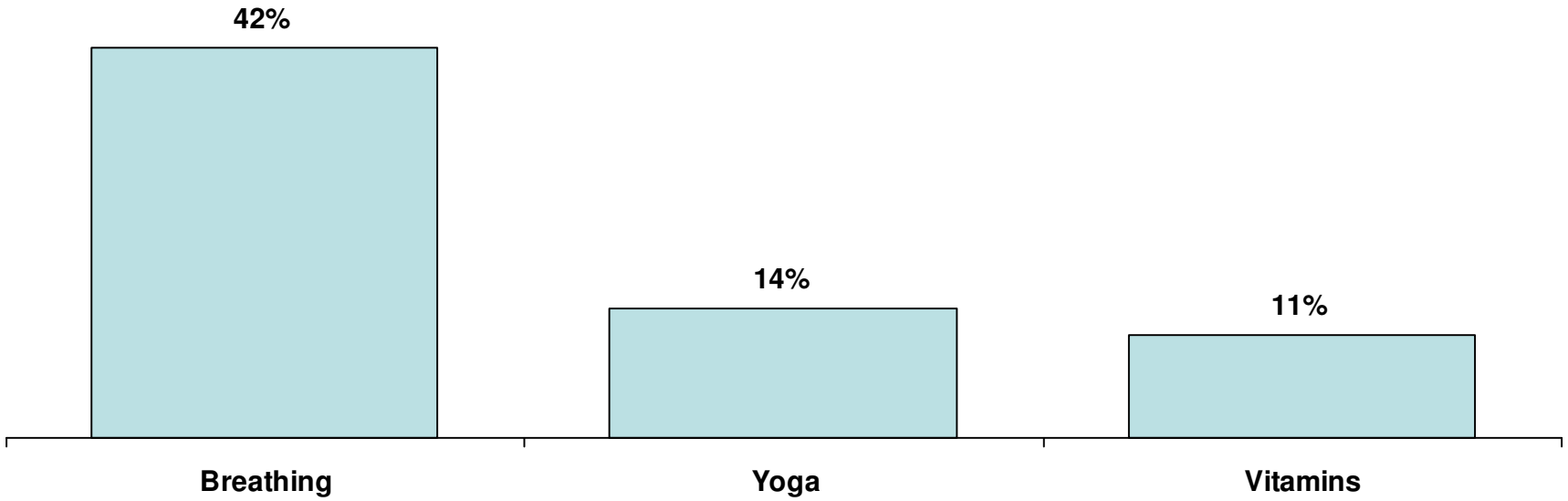
Thirteen percent of adults with current asthma indicated that they were unable to buy needed asthma medication due to cost. Seven percent of adults report that there was a time in the past 12 months when they needed to see their primary care doctor for their asthma but could not because of the cost. Three percent of adults indicated that they were referred to a specialist for asthma care but could not go because of the cost.



Source: Adult Asthma Callback Survey, 2013

Asthma Management – Complementary and Alternative Medicine

Adults with asthma can use methods other than prescription medications to help treat or control their asthma. These methods are referred to as complementary or alternative medicine (CAM) therapy. In 2013, 51% of those with current asthma used CAM therapy. The most commonly used CAM therapies were breathing, yoga and vitamins.



Source: Adult Asthma Callback Survey, 2013

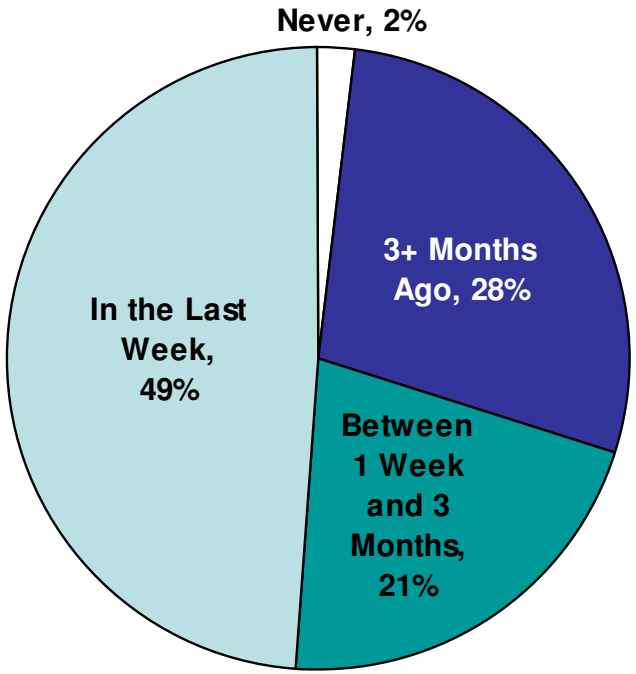
Asthma Management – Adult Medication Use

The majority of adults with asthma have used some type of asthma medication in the last three months (70%).

Among adults with asthma who used asthma medications in the past three months, inhalers were the most common medication used (100%). Other common medications used in the last three months include nebulizers (14%) and pills (13%).

In 2013, 97% of adults with current asthma reported they had ever used a prescription inhaler, while 30% said they had ever used an over the counter medication to control their asthma.

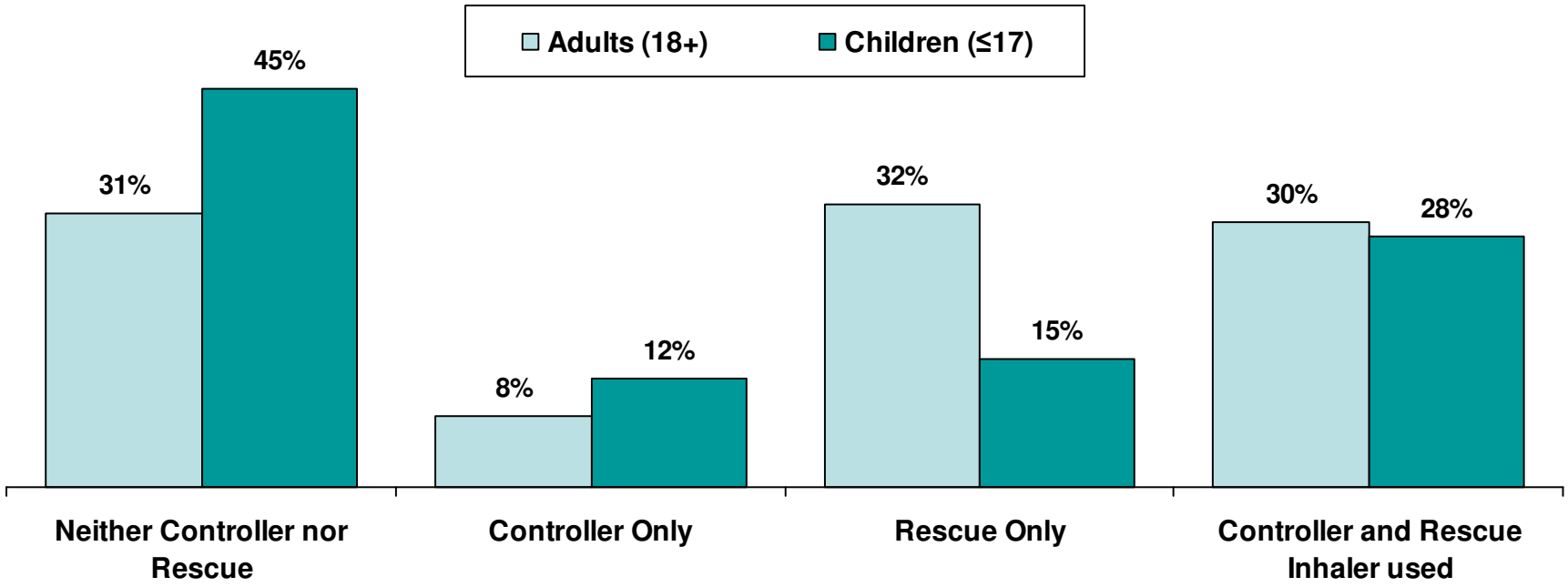
Recent Use of Asthma Medication



Source: Asthma Callback Survey, 2013

Rescue vs. Controller Use in Last 3 months

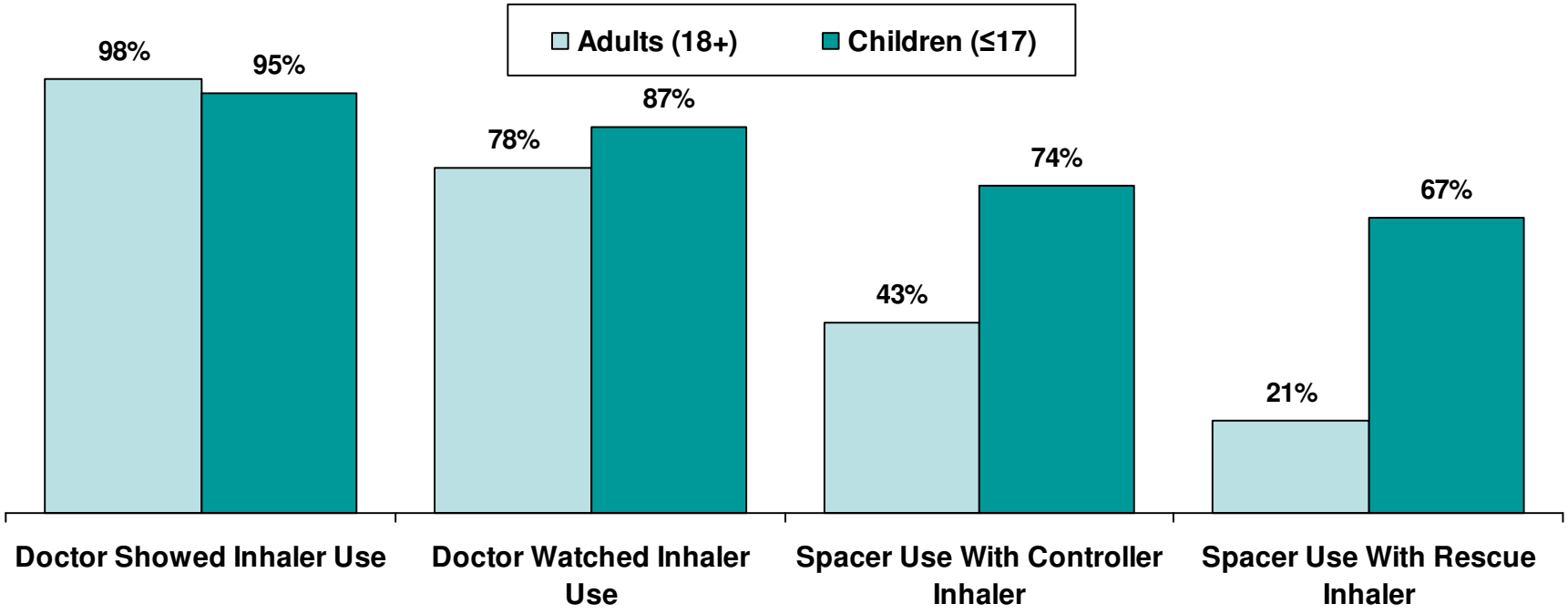
Three in ten adults and almost half of youths with current asthma have not used either a rescue or controller inhaler in the last three months. A third of adults and a quarter of youths have used both a controller and rescue inhaler. Three in ten adults have used a rescue inhaler only. One in 10 adults and youths have used a controller inhaler only.



Source: Adult Asthma Callback Survey, 2013, Child Asthma Callback Survey, 2010

Inhaler Use - Technique

Most adults with current asthma have been shown how to use an inhaler by their physician (98%), while 78% have had their doctor watch them use their inhaler. Overall, 23% of adults used a spacer with their prescription inhaler and ranged from 43% for those using controller inhalers to 21% for those using rescue inhalers. Youth were more likely than adults to use a spacer, with 74% of youth using a spacer with controller inhalers and 67% with rescue inhalers.



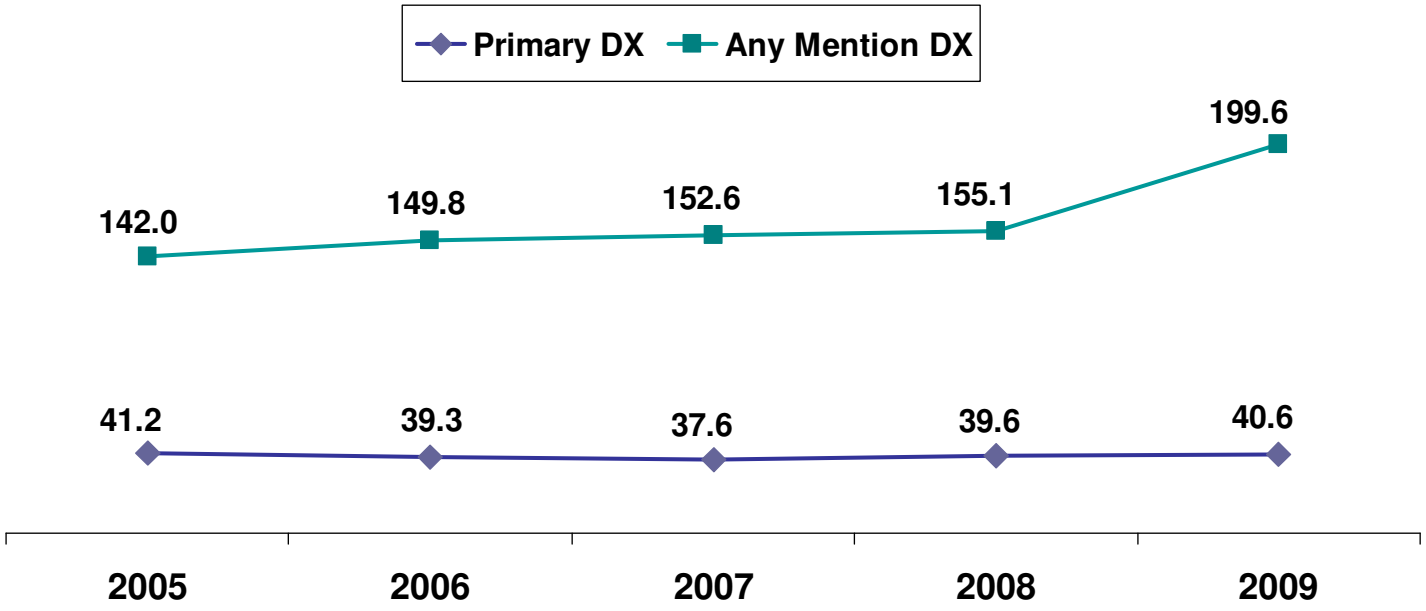
Source: Adult Asthma Callback Survey, 2013, Children Asthma Callback Survey, 2009-2010

Indications of Poor Asthma Management

Emergency Department Visits

In 2009, among Vermont residents, there were 2,537 emergency department visits with a primary diagnosis of asthma, a rate of 40.6 ED visits per 10,000 Vermonters. Asthma was listed as a contributing factor in 12,473 ED visits, a rate of 199.6 per 10,000 Vermonters. This represents a significant increase in ED visits where there was any mention of asthma from 2008 (155.1 per 10,000) to 2009 (199.6 per 10,000).

ED Visit with an Asthma Diagnosis (rate per 10,000) 2005-2009

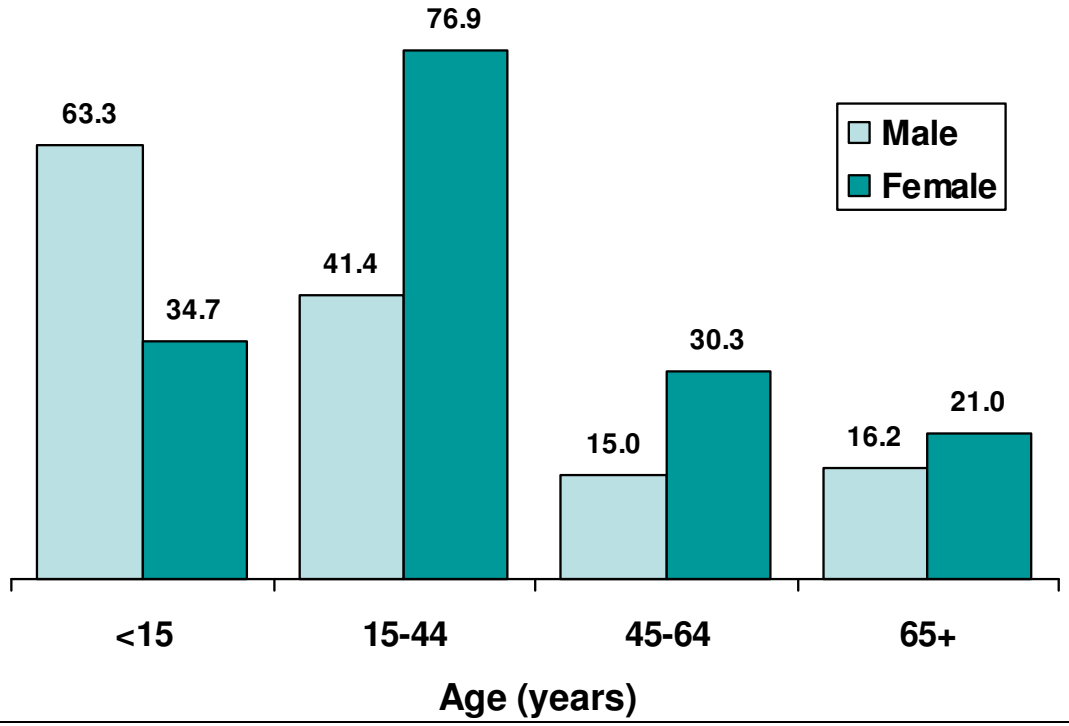


Source: Vermont Uniform Hospital Discharge Data Set (VUHDDS), 2005-2009

Emergency Department Visits

In 2009, when looking at emergency department data, females had a higher rate of visits with asthma as a primary diagnosis than males (47.1 per 10,000 vs. 34.0 per 10,000). When examined by age, the highest rates of emergency department visits with a primary diagnosis of asthma were seen among females 15-44 years of age, and males under the age of 15.

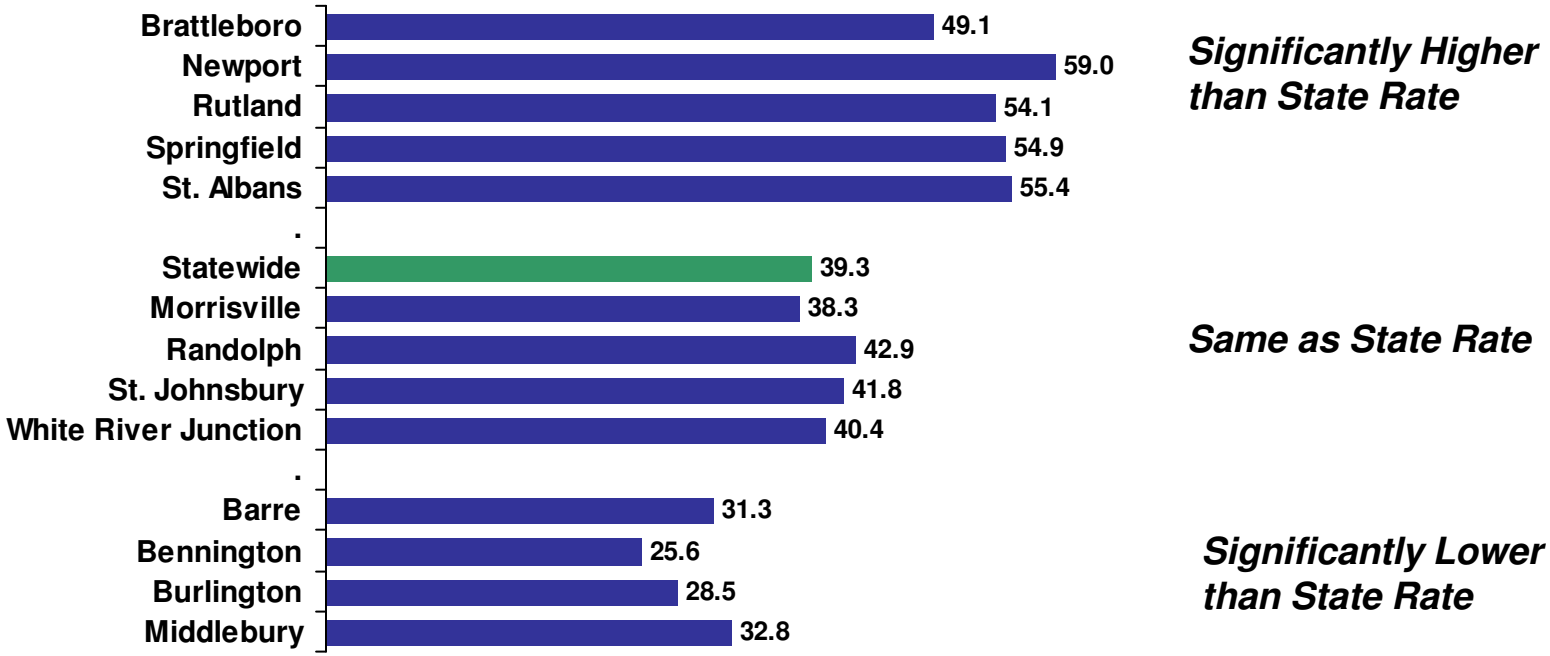
Primary Asthma Diagnosis (rate per 10,000), 2009



Source: Vermont Uniform Hospital Discharge Data Set (VUHDDS), 2009

Emergency Department Visits by Hospital Service Area

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

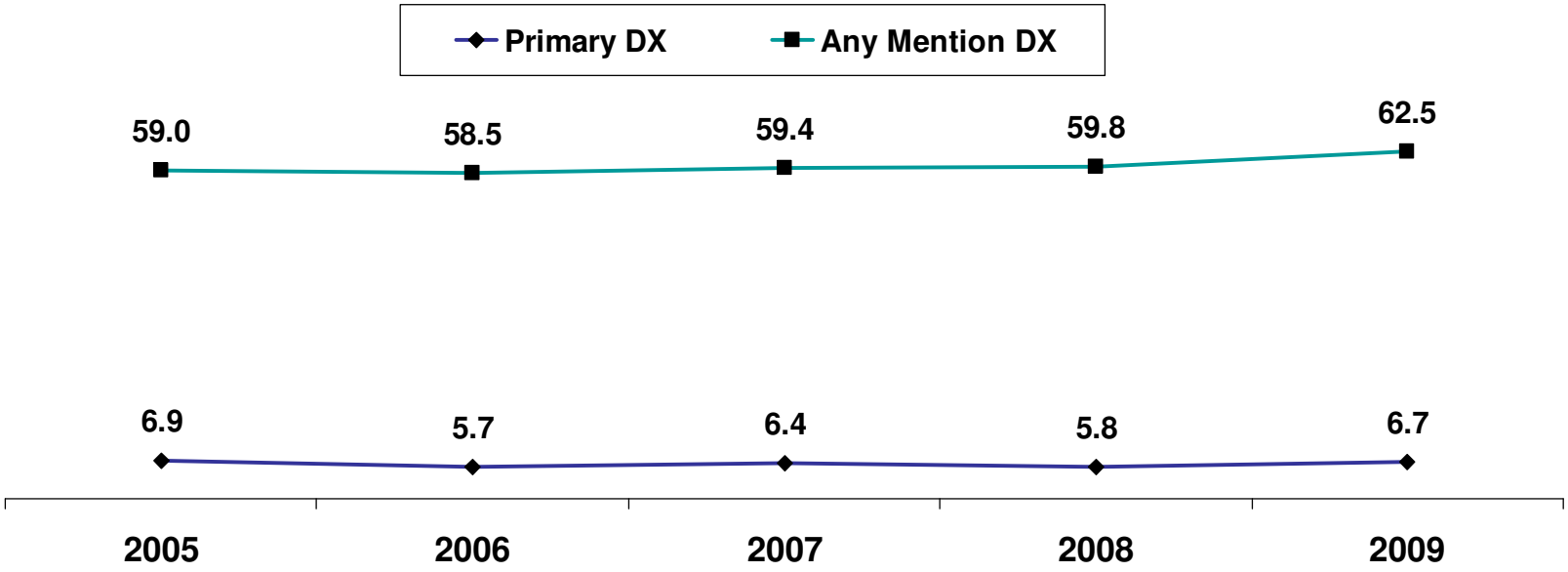


Source: Vermont Uniform Hospital Discharge Data Set (VUHDDS), 2007-2009

Hospitalizations

In 2009, 420 Vermonters were discharged from the hospital with a primary diagnosis of asthma (6.7 per 10,000 Vermonters). In 2009, there were 3,903 hospitalizations with any mention of asthma (62.5 per 10,000 Vermonters). The rate of hospitalizations with a primary diagnosis or any mention of asthma have remained relatively steady over the past five years.

Hospital Discharge with an Asthma Diagnosis (rate per 10,000) 2005-2009

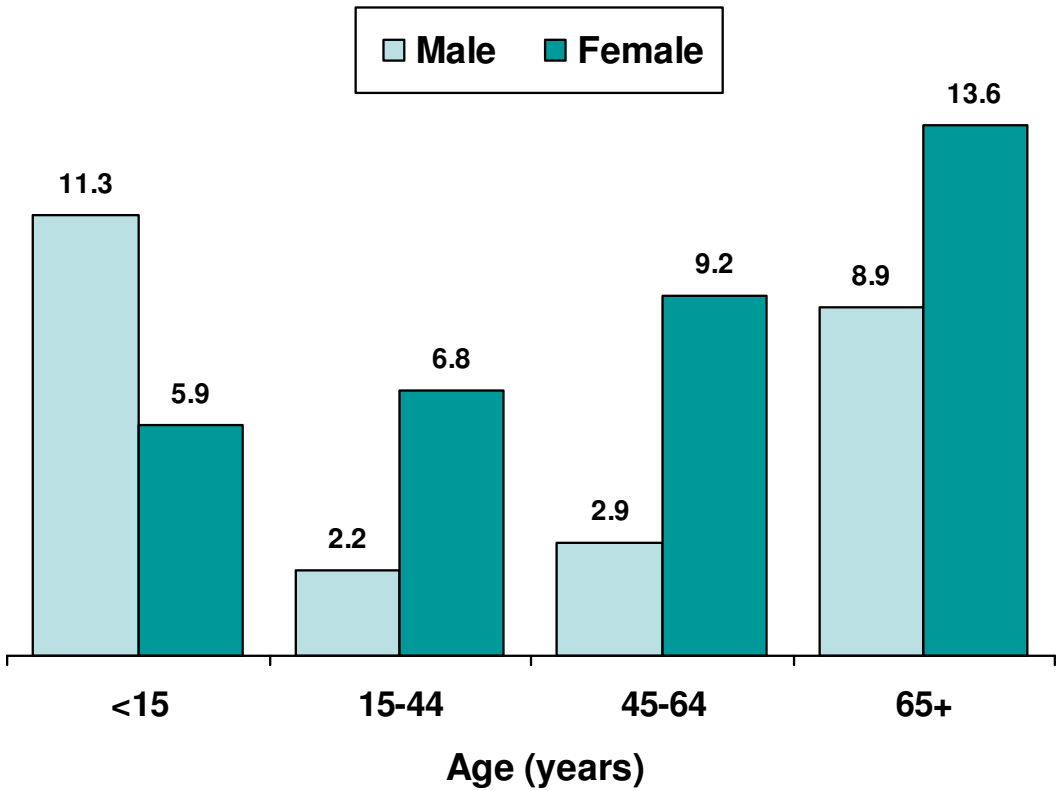


Source: Vermont Uniform Hospital Discharge Data Set (VUHDDS), 2005-2009

Hospitalizations

As with ED visits, females overall had a higher rate of hospitalizations than males (8.5 versus 4.9 per 10,000). The highest rate of hospitalizations with a primary diagnosis of asthma was seen among females 65 years and older and males under the age of 15.

Primary Asthma Diagnosis (rate per 10,000), 2009

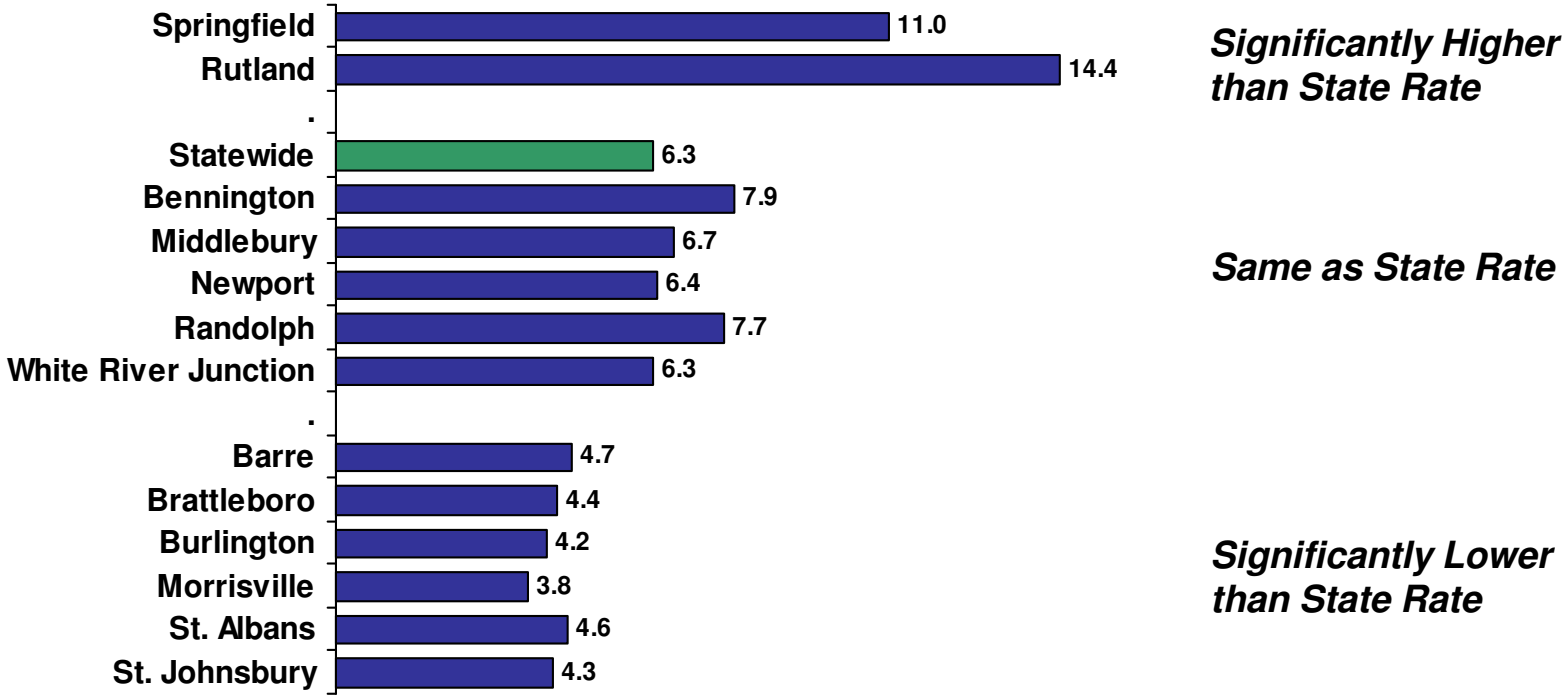


Source: Vermont Uniform Hospital Discharge Data Set (VUHDDS), 2009

Hospitalizations by Hospital Service Area

The rate of hospital discharges with a primary diagnosis of asthma varied when looked at by hospital service area (HSA). The Rutland and Springfield HSAs had significantly higher hospitalizations rates as compared to the statewide rate, while the Barre, Brattleboro, Burlington, Morrisville, St. Albans, and St. Johnsbury HSAs had significantly lower rates of hospitalizations per 10,000.

Hospitalizations with a Primary Asthma Diagnosis by HSA (rate per 10,000) , 2007-2009



Source: Vermont Uniform Hospital Discharge Data Set (VUHDDS), 2007-2009

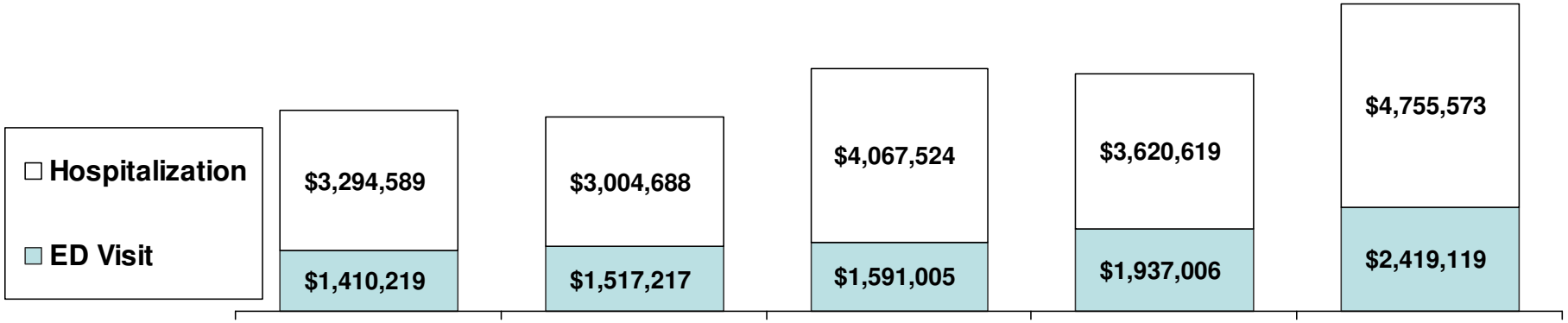
Charges of Poor Asthma Management

Death

In the past ten years, more than 70 Vermonters have died because of their asthma. In 2011, there were 7 deaths attributed to asthma. Between 2004 and 2011, there have been between 7 and 11 deaths per year due to asthma.

Health Care Charges

In addition to the negative health outcomes associated with poor asthma management, there are also financial costs. In 2009, hospitalizations and emergency department visits alone charged approximately $7.2 million dollars, an increase over previous years. In 2009, hospitalizations with a primary diagnosis of asthma, resulted in close to $5 million in charges; an average of ~$11,000 per patient and emergency department visits for asthma cost roughly $2.5 million (~$950 per patient).

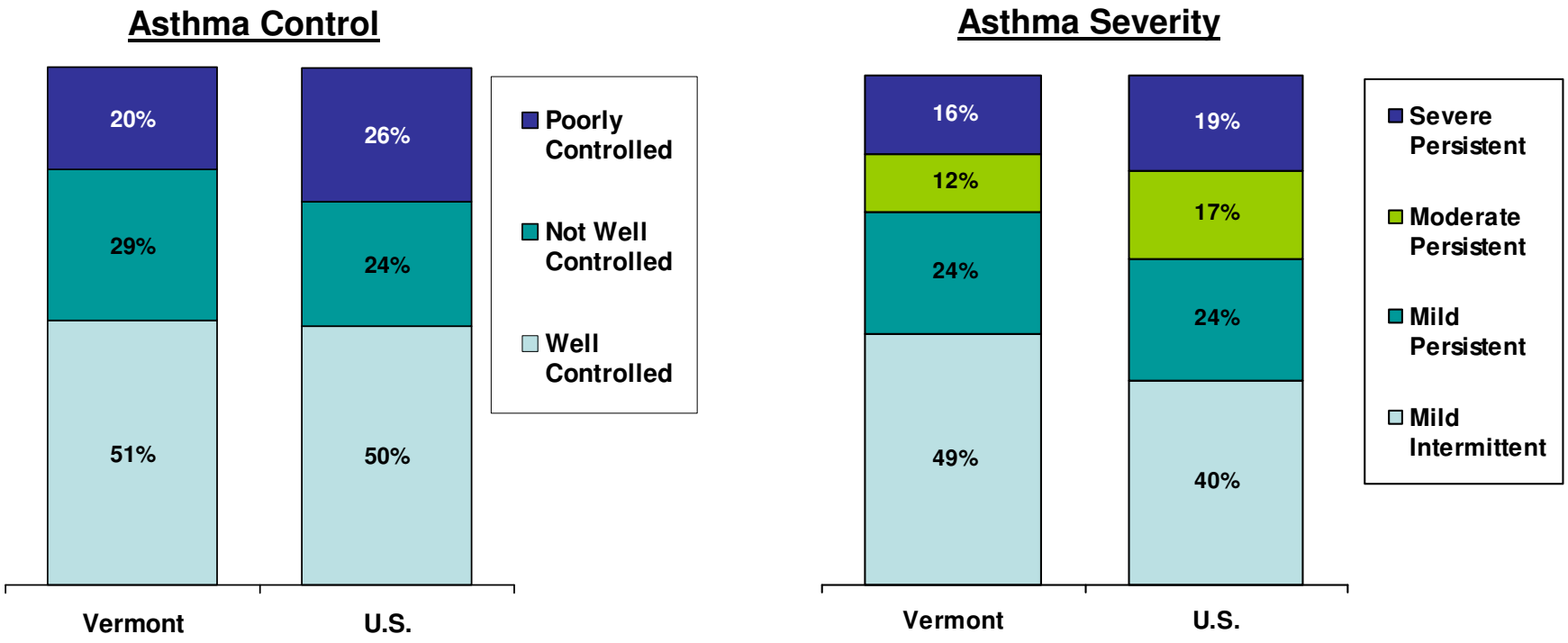


Source: Vermont Vital Statistics System, Vermont Uniform Hospital Discharge Data Set (VUHDDS), 2005-2009

Comparisons to U.S.

Vermont and U.S. Comparisons – Asthma Severity and Control

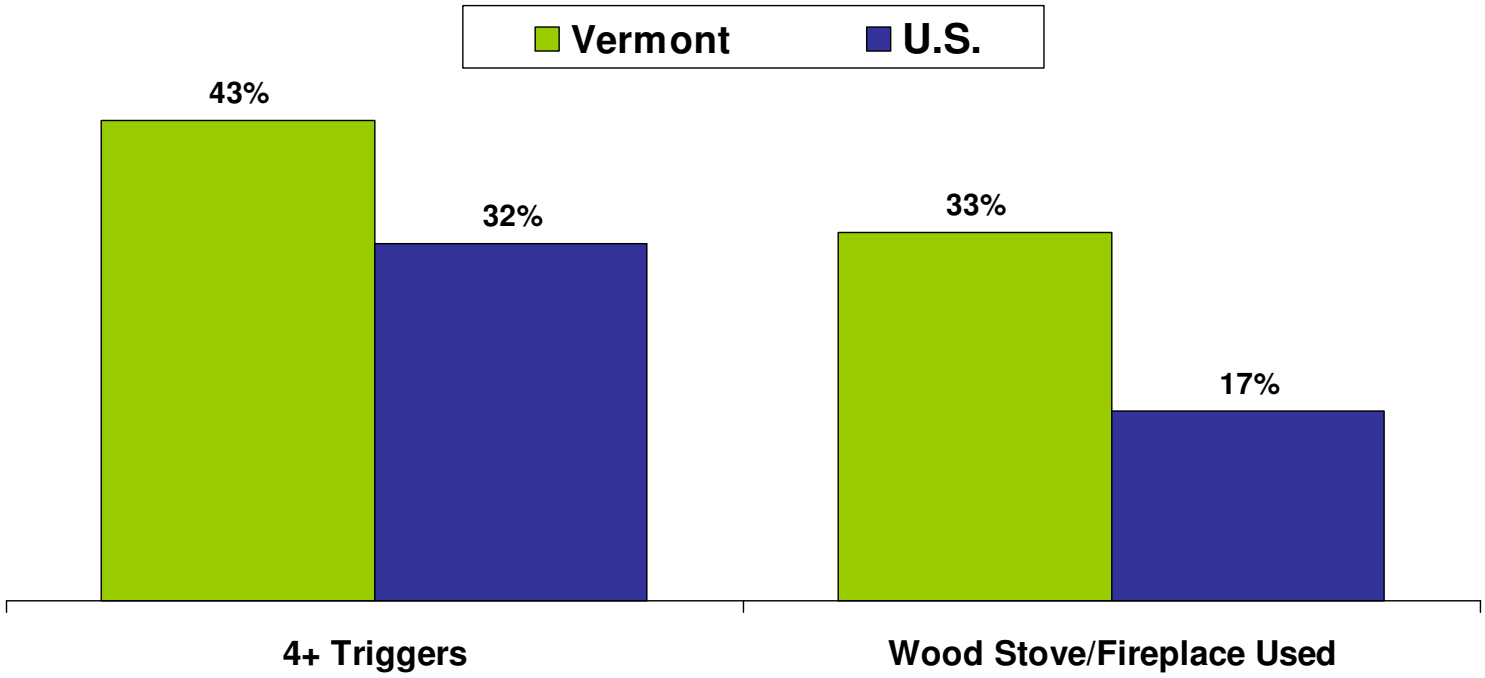
While Vermont has a higher adult asthma prevalence than the overall U.S. (11% vs. 9%, 2013), Vermonters with asthma did not differ significantly in control or severity than the U.S. states that do the Adult Asthma Callback Survey.



Source: Vermont and U.S. Asthma Callback Survey, 2012

Vermont and U.S. Comparisons – Individual Triggers at Home

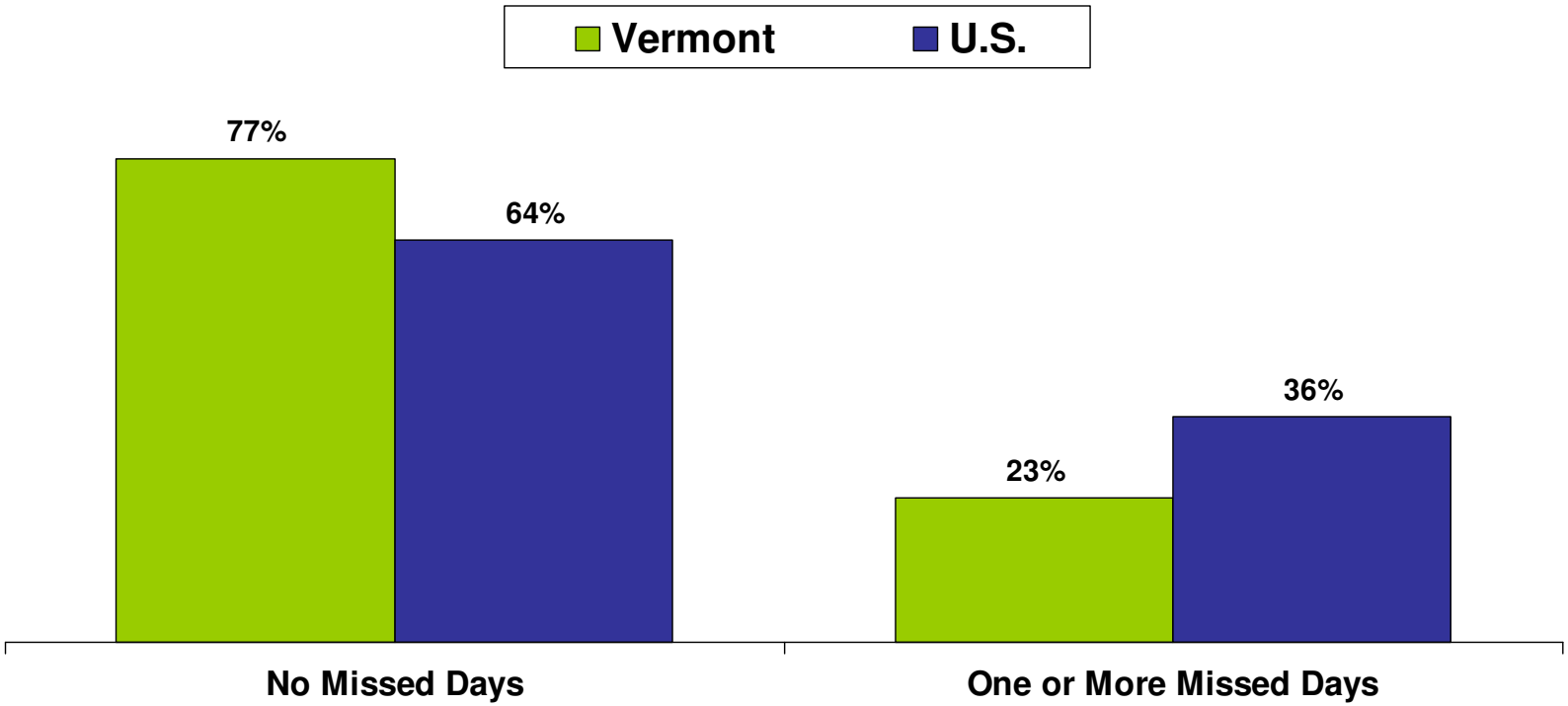
Adult Vermonters with asthma are more likely to have four or more triggers in their home compared to the U.S. states that do the Adult Asthma Callback Survey. Adult Vermonters with asthma are more likely to have used a wood stove or fireplace when compared to the U.S.



Source: Vermont and U.S. Asthma Callback Survey, 2012

Vermont and U.S. Comparisons – Absenteeism

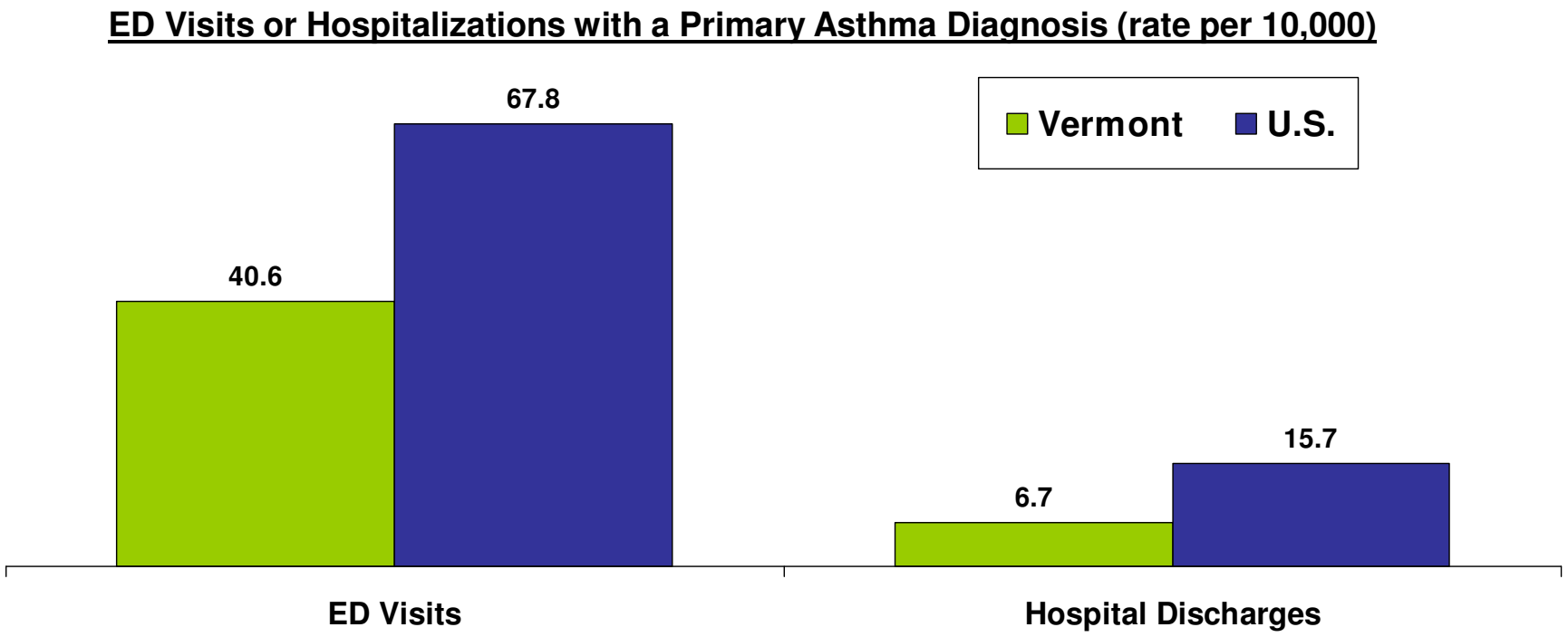
Three out of 4 Vermonters with asthma did not miss work in the past year due to their asthma. Vermonters with asthma were less likely to miss one or more days of work due to their asthma (23%) as compared to U.S. states that do the Adult Asthma Callback Survey (36%).



Source: Vermont and U.S. Adult Asthma Callback Survey, 2012

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

Emergency Department Visits and Hospital Discharges for asthma as the primary diagnosis were much lower for Vermonters than the rest of the U.S.



Source: Vermont Uniform Hospital Discharge Data Set (VUHDDS), 2009, National Hospital Discharge Survey, 2009

Data Sources

Behavioral Risk Factor Surveillance System (BRFSS): Annual telephone survey conducted by individual state health departments with support from the CDC. All 50 states complete a set of core BRFSS questions and some states chose to include additional questions that focus on health topics relevant to the state. 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): Annual survey conducted in 38 states for subjects that report having current asthma in BRFSS. In Vermont, this survey is conducted for both adults and children with current asthma. This survey allows for 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.

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 emergency department are included in the hospital discharge data set and are not included in the emergency discharge data set.

Vermont Vital Statistics System: Monitors vital events, including deaths. Information on the cause of death is obtained from a physician and reported on the death certificate.

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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