



Asthma Data Pages

2019 Behavioral Risk Factor Surveillance Survey

2018 Adult Asthma Call-Back Survey

2015-2017 Child Asthma Call-Back Survey

Department of Health Surveillance

Published February 2022

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Executive Summary



In 2019, Vermont had the second highest prevalence among US states and territories for adult current asthma and the fortieth highest for child current asthma.



The prevalence of adult and child asthma has not changed significantly in Vermont in recent years. About 1 in 8 (12%) adults and 1 in 12 (8%) children have current asthma.



19% of adults who smoke every day have current asthma, a statistically higher rate than Vermonters in general (12%).



41% of adults and 25% of children do not have well-controlled asthma.



Registered asthma action plans in schools have increased in recent years. In the 2018-2019 school year, 53% of students with current asthma had an asthma action plan on file.

Asthma Prevalence in Vermont

Who has asthma in Vermont?

Who has asthma in Vermont?



1 in 8 (\approx 59,000) adults have current asthma.

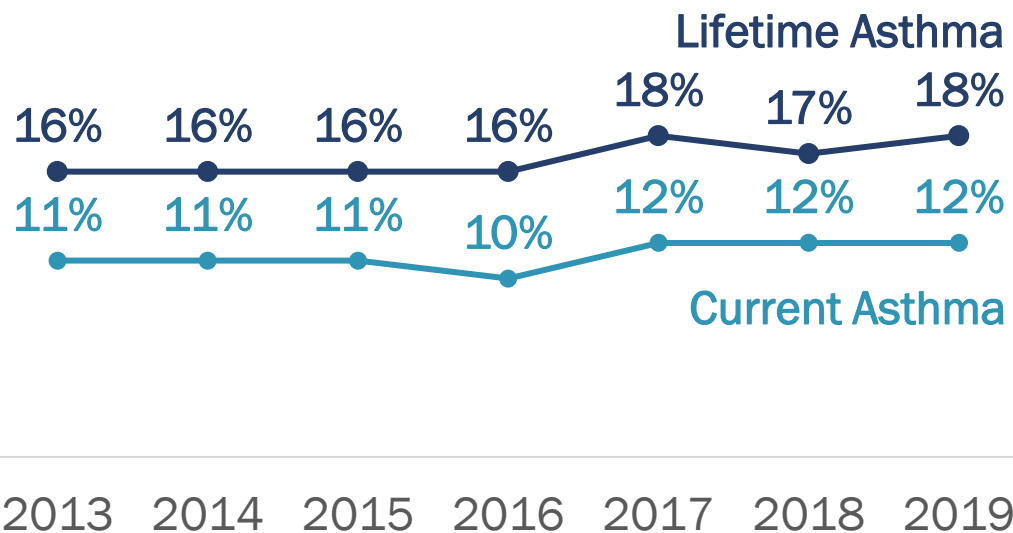


1 in 12 (\approx 9,000) children have current asthma.

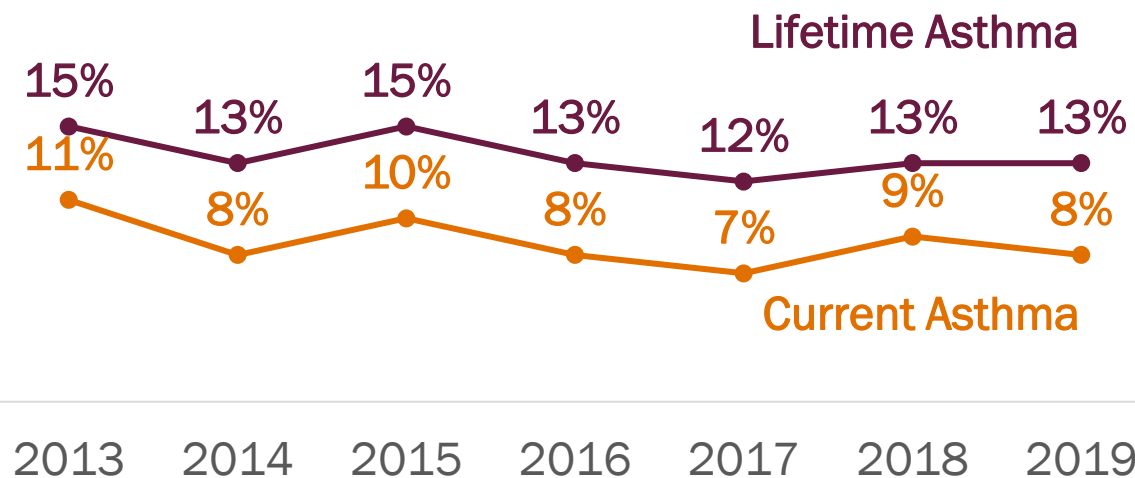
Who has asthma in Vermont?



Adult **lifetime**[°] and **current**[°] asthma have not changed significantly over time.



Child **lifetime** and **current** asthma have not changed significantly over time.



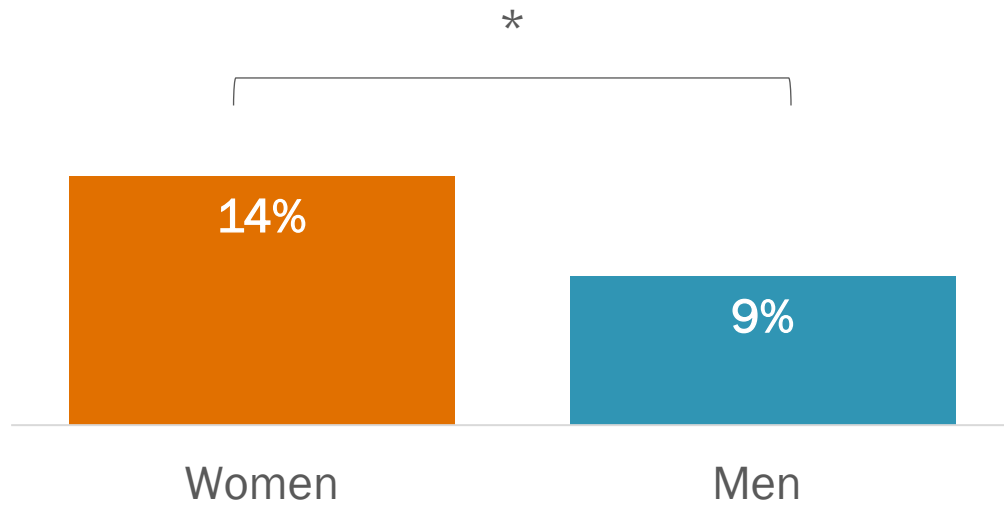
[°]An individual is considered to have **lifetime asthma** if they have ever been told by a health care professional that they had asthma.

[°]An individual is considered to have **current asthma** if they responded that they still have asthma.

Who has asthma in Vermont?

Women have a higher prevalence of current asthma than **men**.

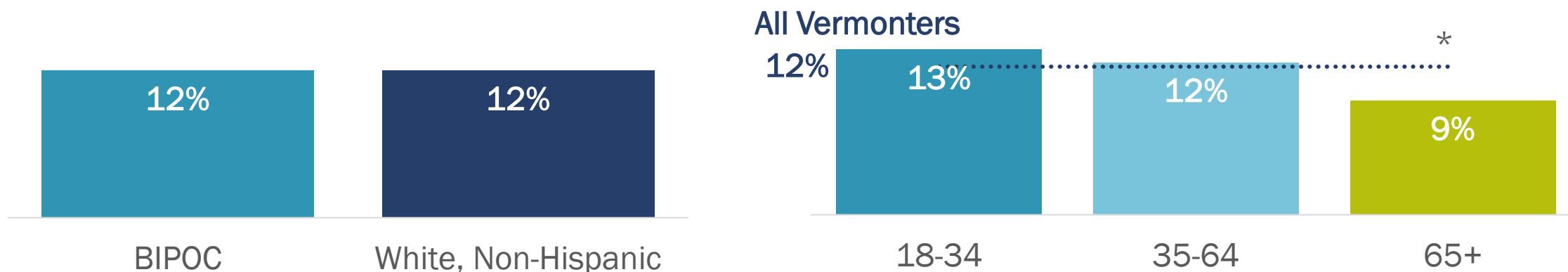
Current asthma prevalence does not differ between **LGBT** and **non-LGBT** Vermonters.



Who has asthma in Vermont?

Current asthma prevalence does not differ between **BIPOC^o Vermonters** and **white Vermonters**.

Vermonters 65 and older are less likely to have current asthma than **Vermonters in general**.

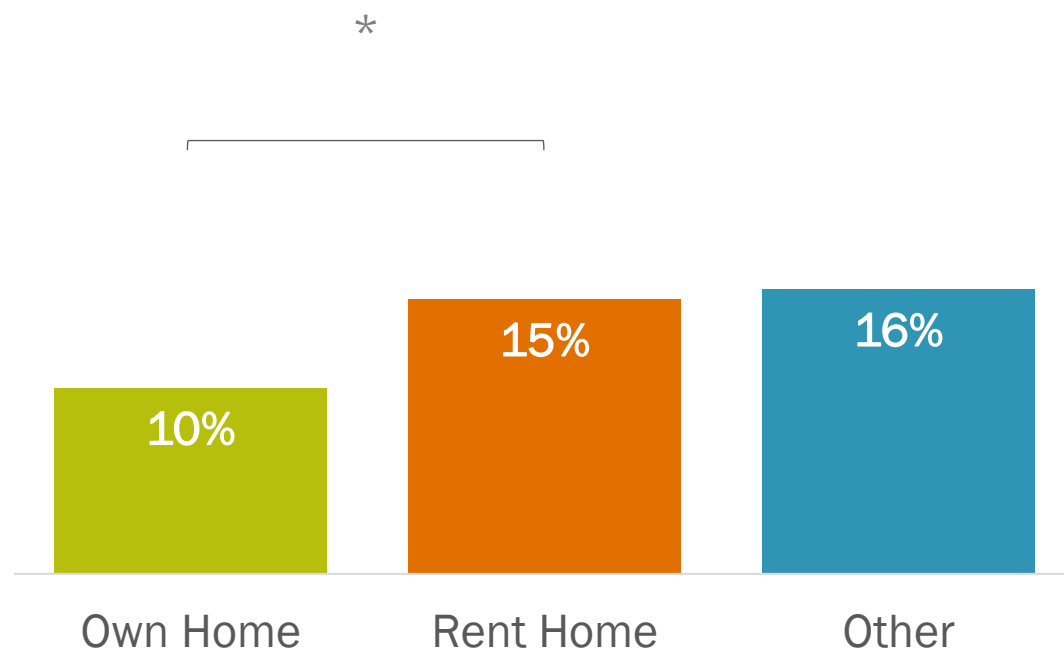
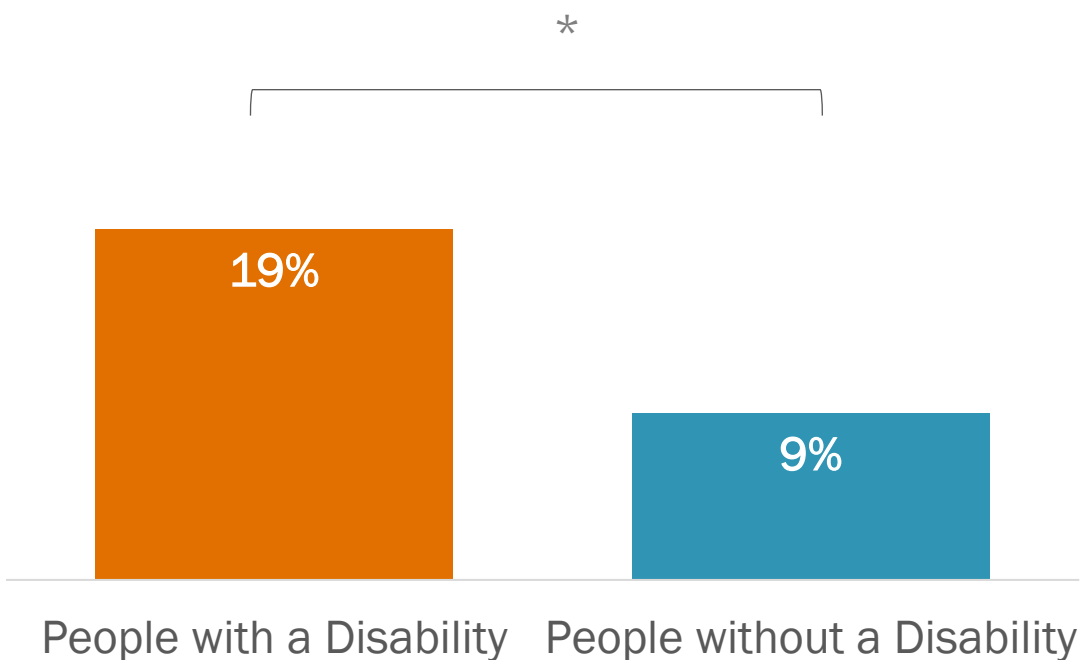


^oIndividuals who self-identified that they were of Hispanic, Latino/a, or Spanish origin and/or responded that their race is one or more of the following: Black or African American, American Indian or Alaska Native, Asian, Pacific Islander.

Who has asthma in Vermont?

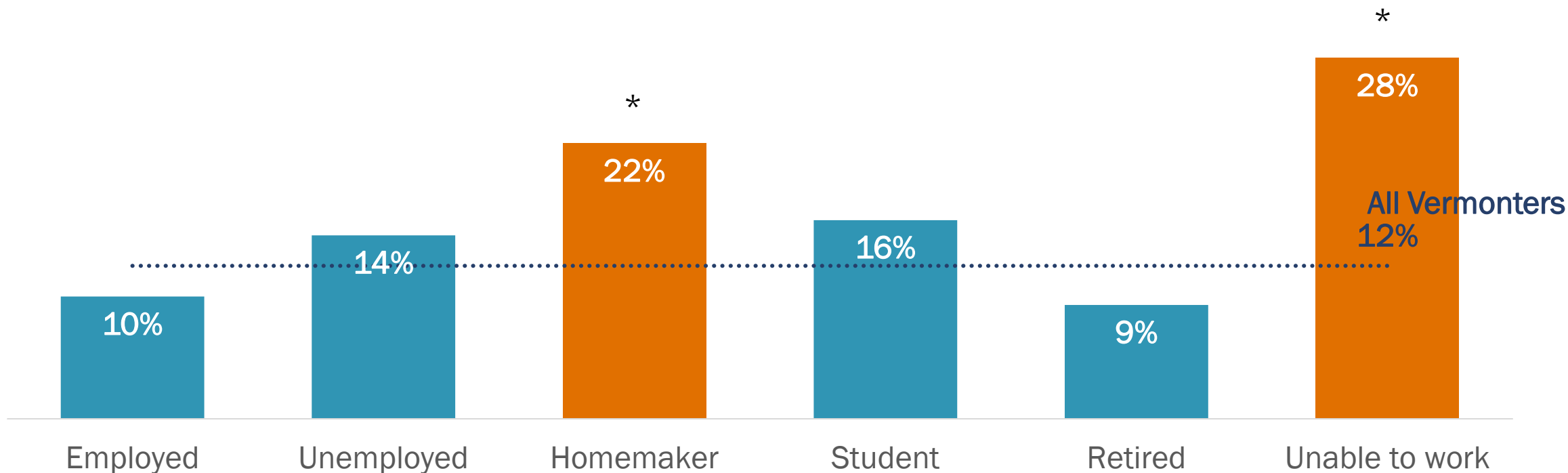
Vermonters with a disability are two times more likely to have current asthma than those **without a disability**.

Vermonters who **own homes** are less likely to have current asthma than those **who rent**.



Who has asthma in Vermont?

Homemakers and those unable to work are more likely to have current asthma than Vermonters in general.

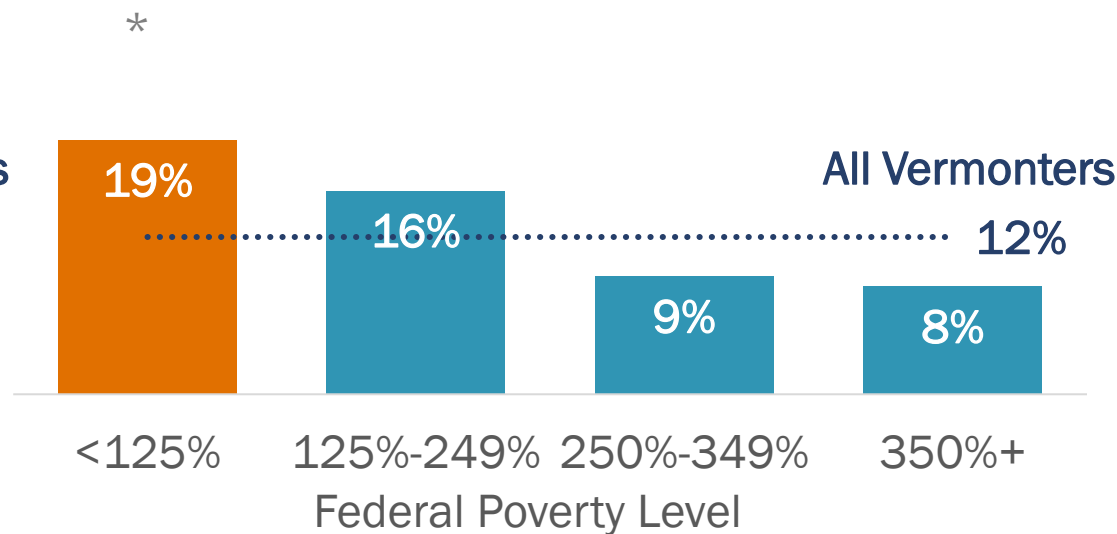
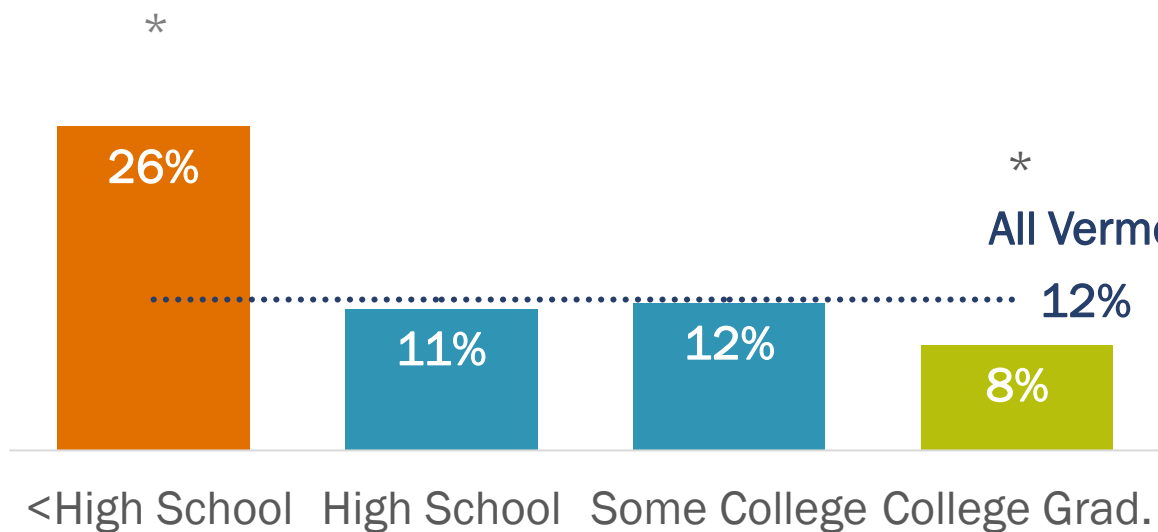


Who has asthma in Vermont?

Adults **who did not graduate from high school** are more likely to have current asthma than **Vermonters in general**.

Those who **graduated from college** are less likely to have asthma.

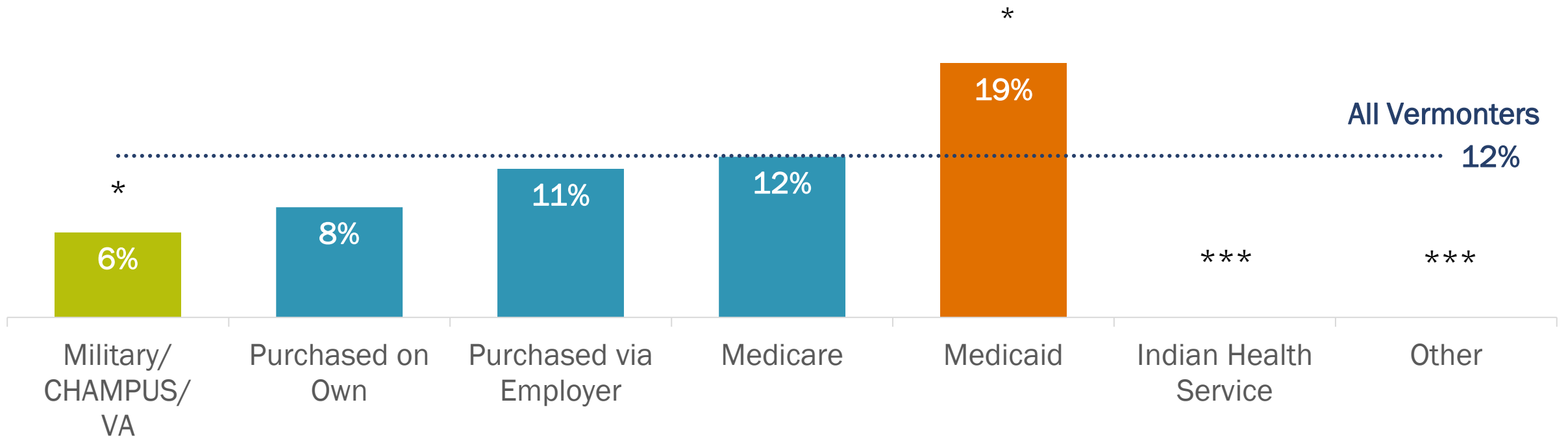
Adults in families with **income less than 125%** of the federal poverty level are more likely to have current asthma than **Vermonters in general**.



Who has asthma in Vermont?

Vermonters insured by Medicaid have higher current asthma prevalence than **Vermonters in general**.

Those insured by the military, CHAMPUS or Veterans Affairs have a lower current asthma prevalence than **Vermonters in general**.



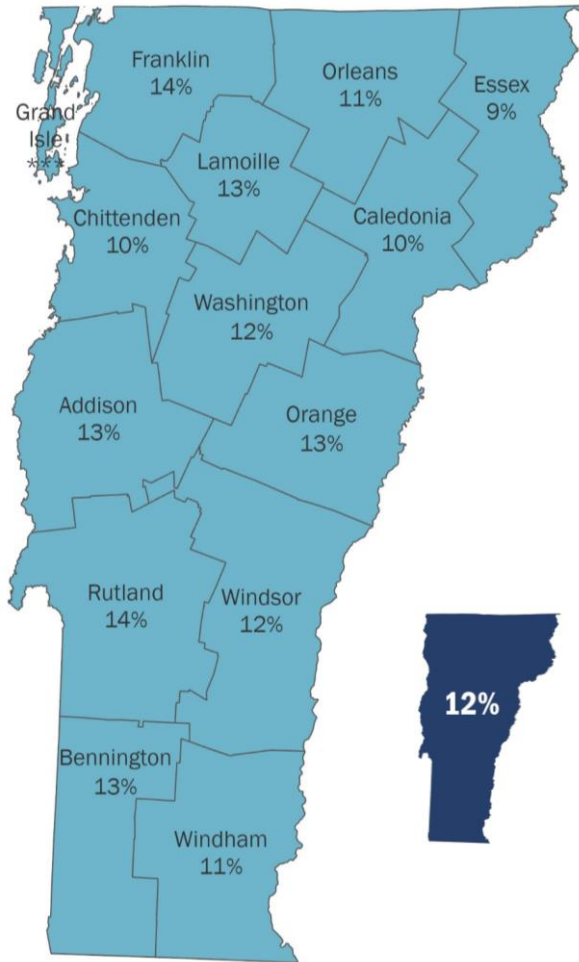
* Group is significantly different from Vermont population.

*** Sample size too small to report

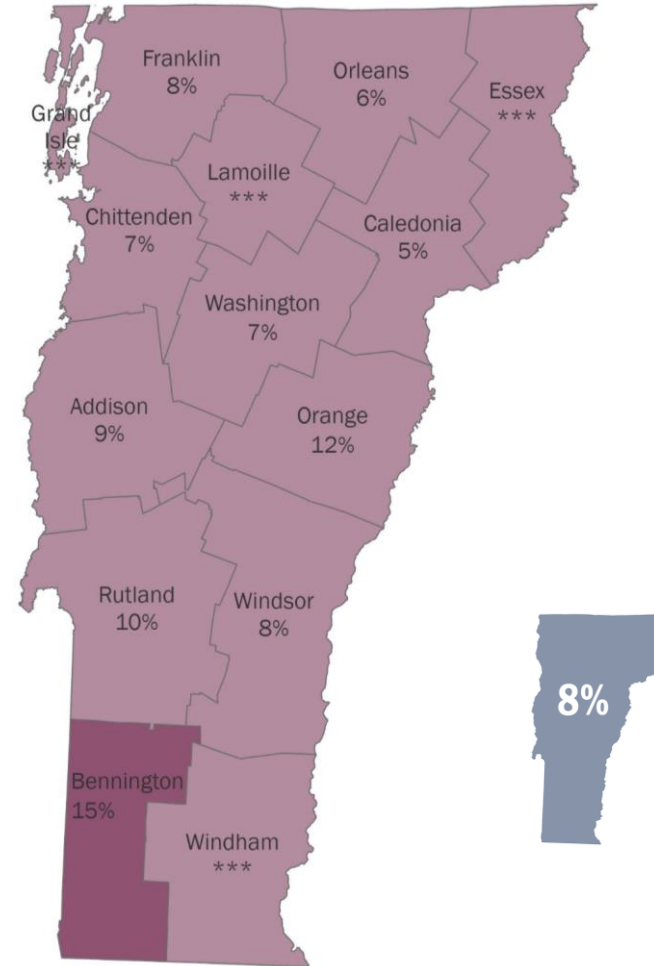
Vermont Department of Health Source: 2018 BRFSS



Current adult asthma prevalence in each county is like that of **Vermont as a whole**.



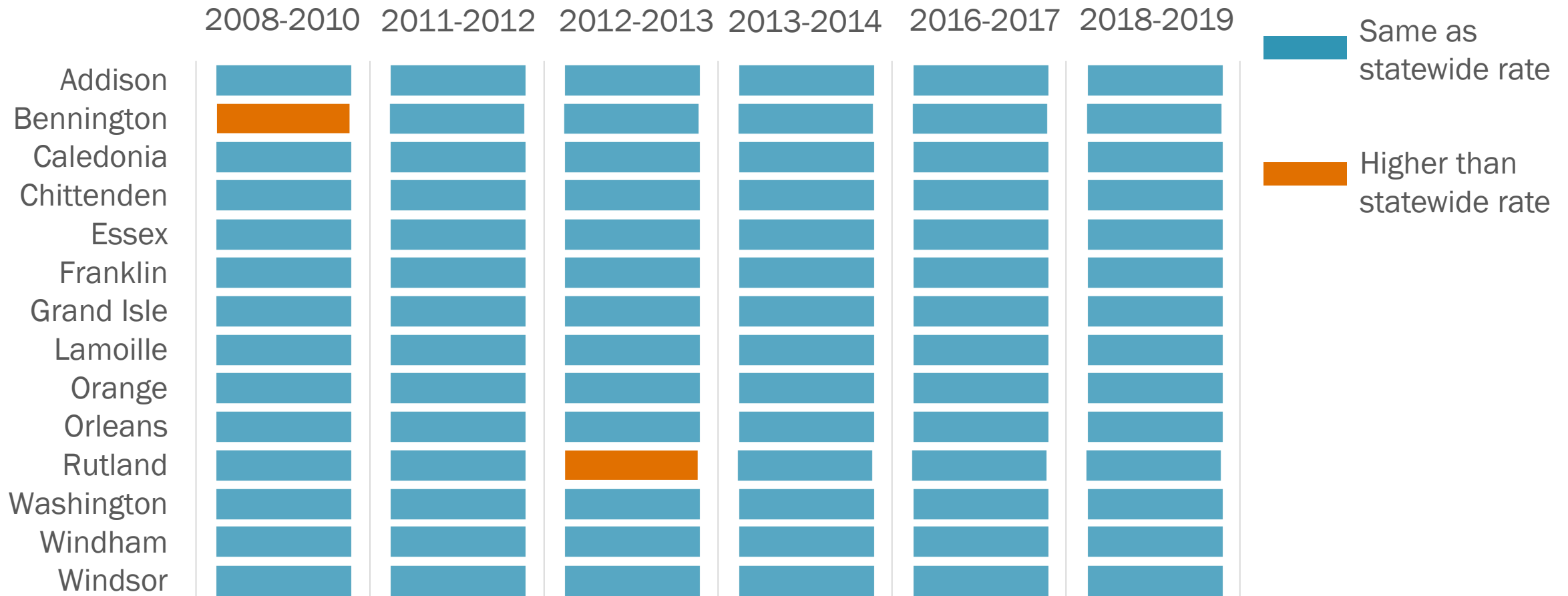
Current child asthma prevalence in **Bennington county** is higher than that of Vermont as a whole.





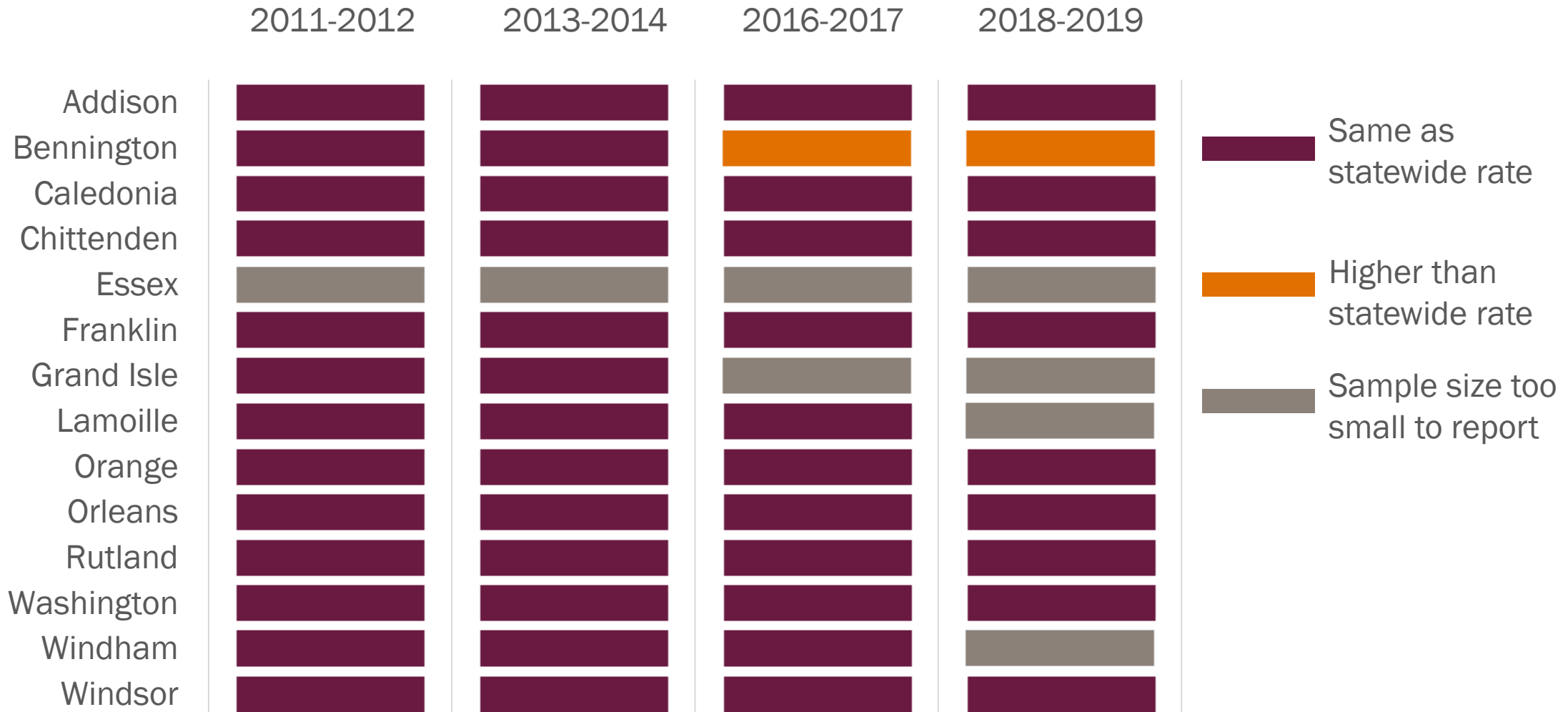
In recent years, Vermont counties have had the same adult asthma prevalence as the statewide rate.

Bennington's asthma prevalence was higher in 2008-2010, and Rutland's was higher in 2012-2013.



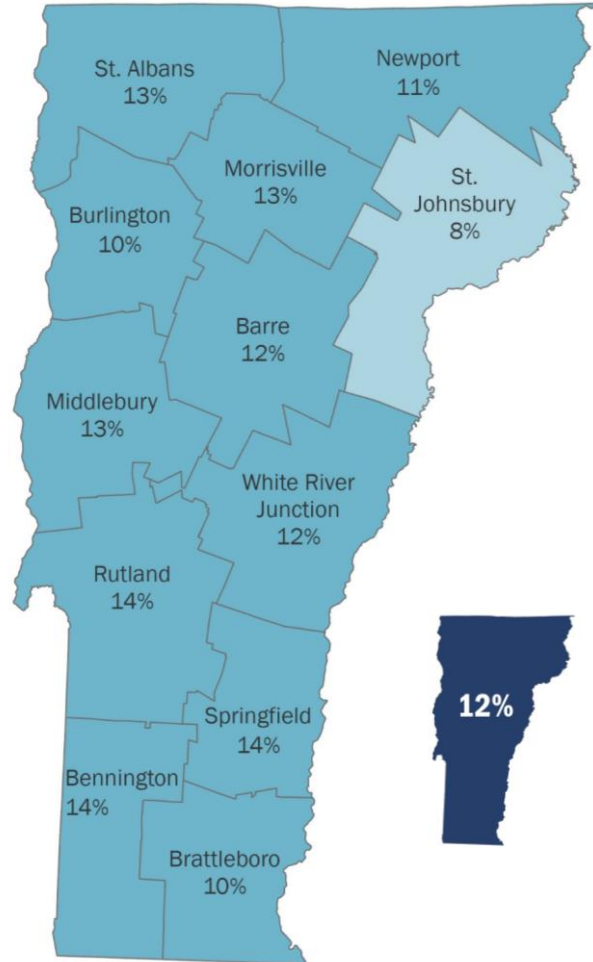


In recent years, Bennington county has had a higher child asthma prevalence than the statewide rate.

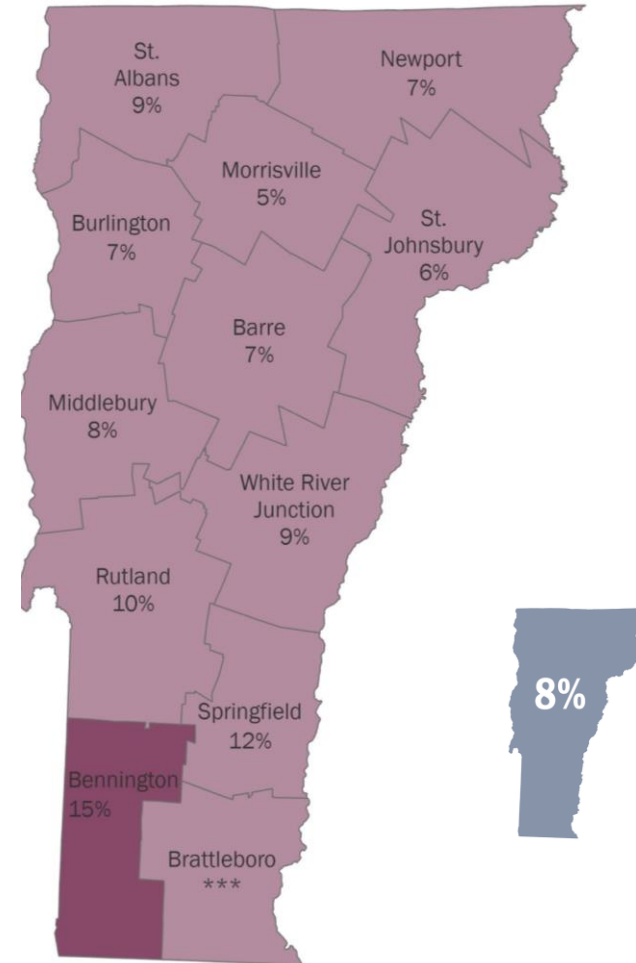




Current adult asthma prevalence in St. Johnsbury's health district is lower than Vermont as a whole.

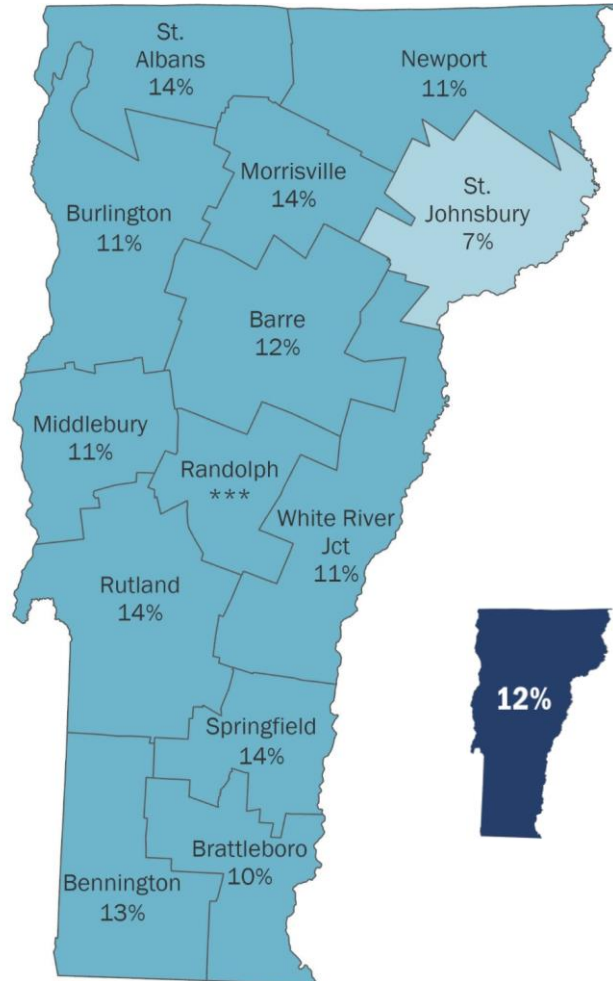


Current child asthma prevalence in Bennington's health district is higher than that of Vermont as a whole.

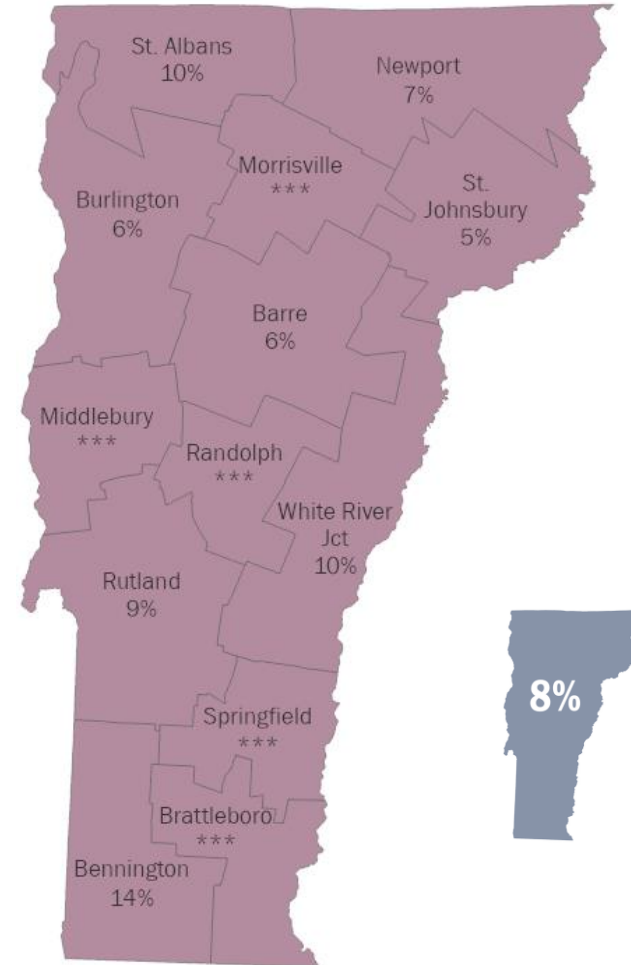




Current adult asthma prevalence in **St. Johnsbury's hospital service area** is lower than **Vermont as a whole**.



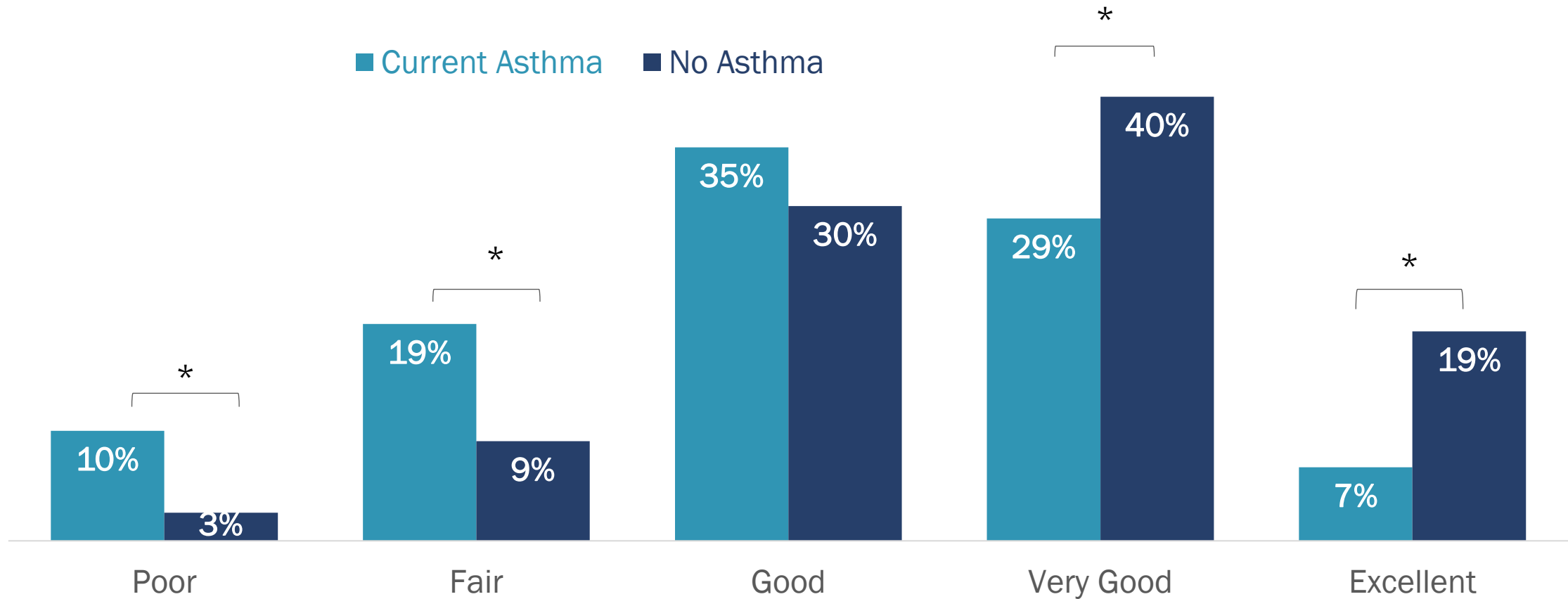
Current child asthma prevalence in each hospital service area is like that of Vermont as a whole.



Asthma Co-Morbidities

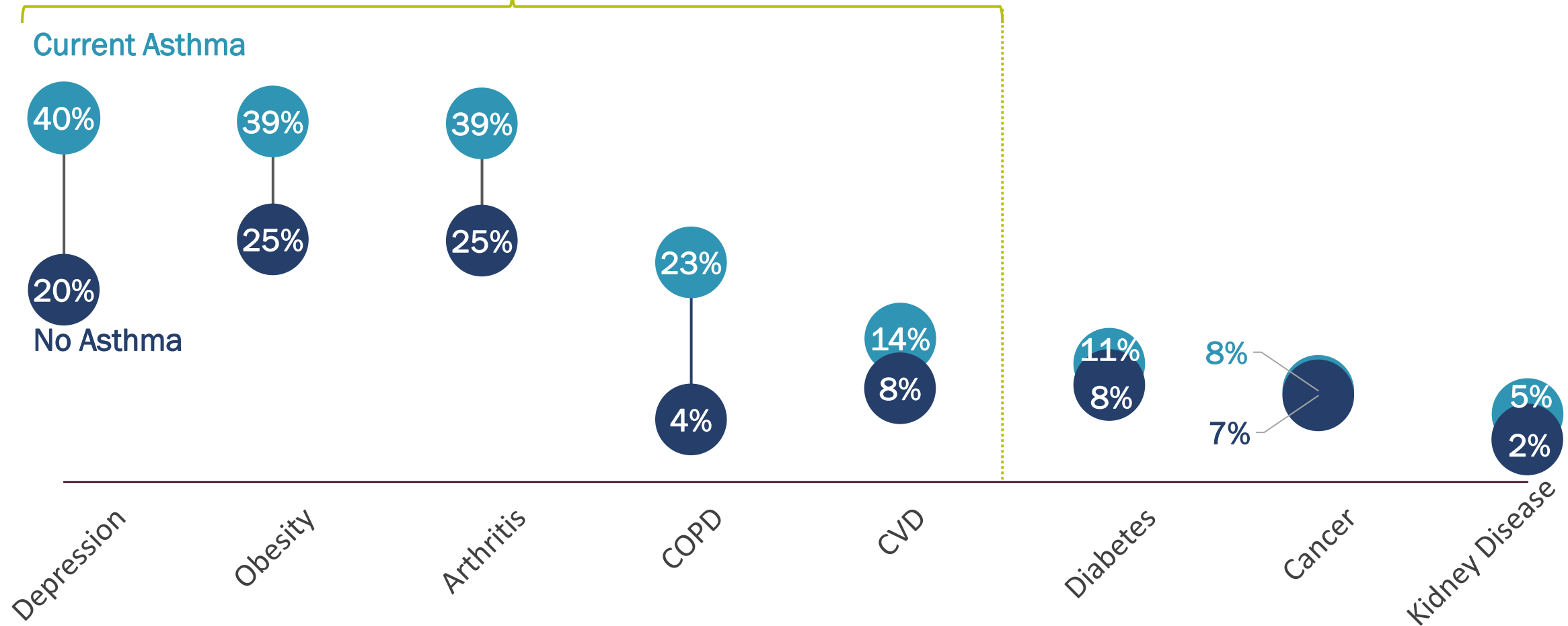
How does asthma interact with other conditions?

Adults **with current asthma** are more likely to rate their health **negatively** than those without asthma.



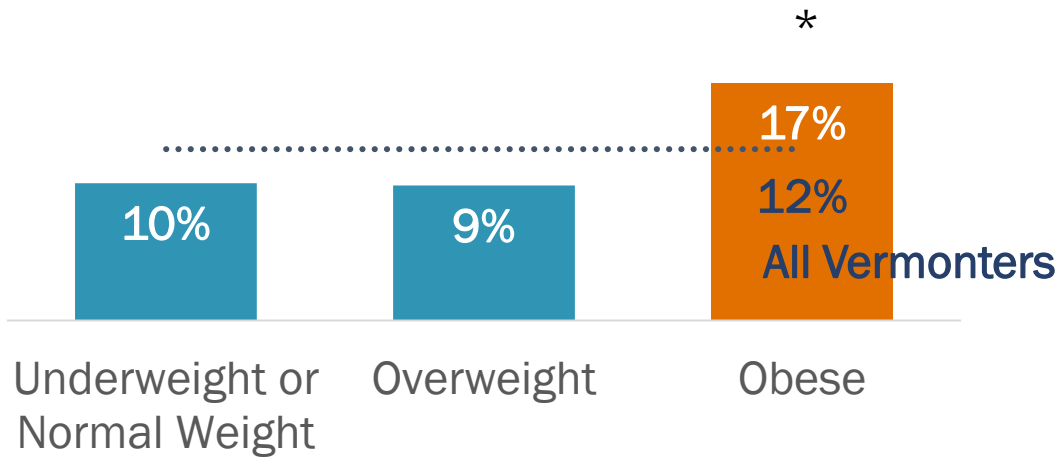
Vermonters **with current asthma** are more likely to report having another chronic disease than those **without current asthma**.

Significant difference between individuals with and those without current asthma.



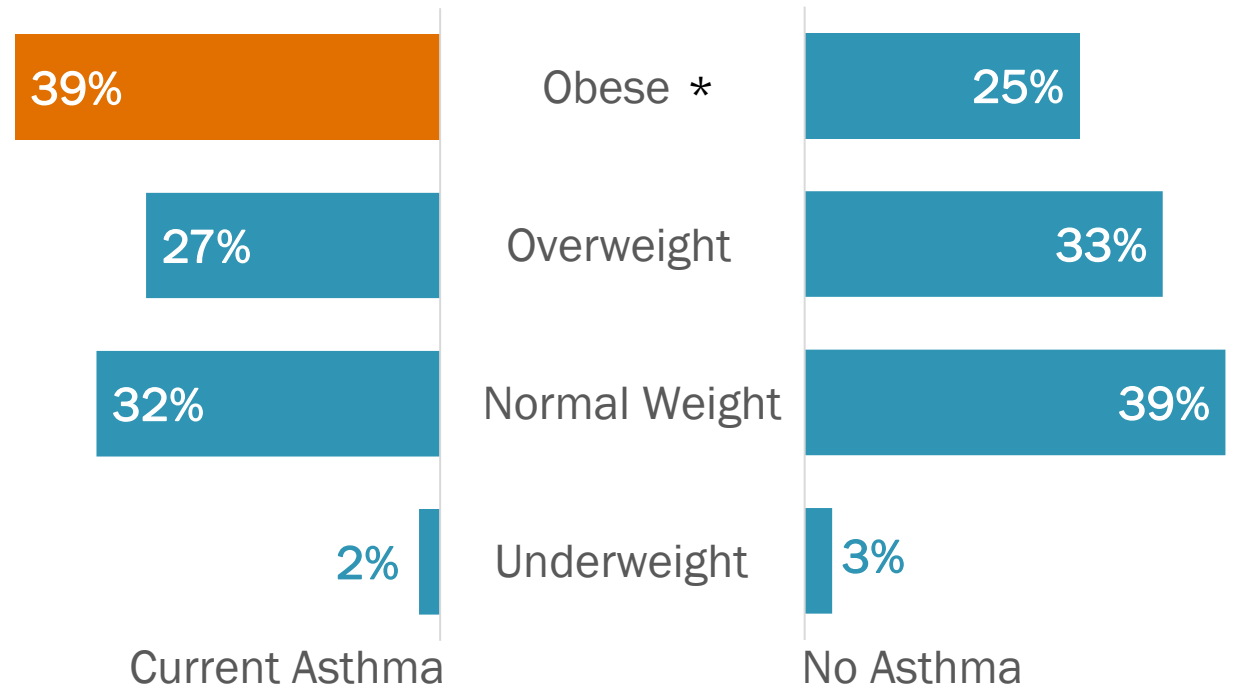
Are Vermonters with obesity at higher risk for asthma?

Adults who are **obese** are more likely to have current asthma than the Vermont population in general.



* Significantly different from another group of comparison.
 Vermont Department of Health Source: 2019 BRFSS

Adults with current asthma are more likely to be obese than those without asthma.‡



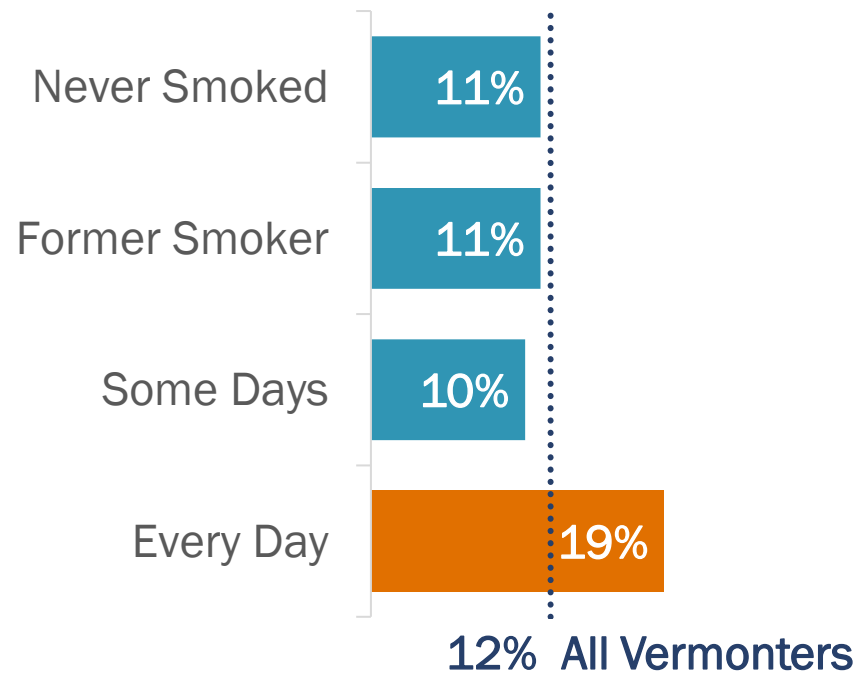
‡Estimates are age-adjusted to the 2000 U.S. standard population

Asthma Risk Factors

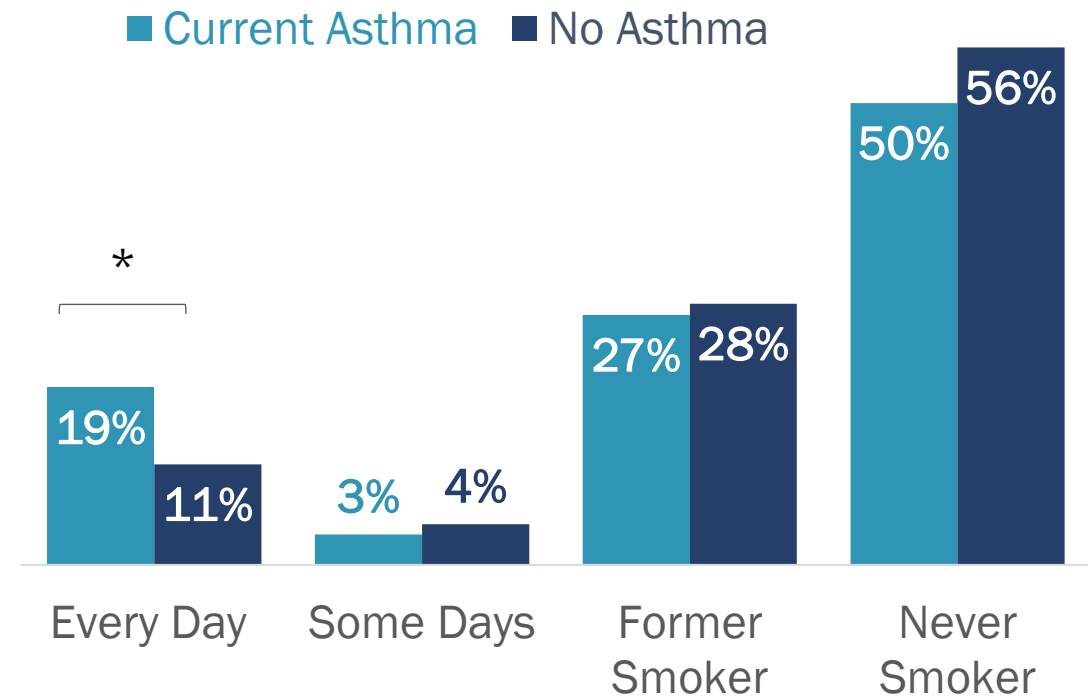
What factors increase the risk of having or exacerbating asthma?

Are Vermonters who smoke at higher risk for asthma?

Adults who smoke **every day** are more likely to have current asthma than Vermonters in general.



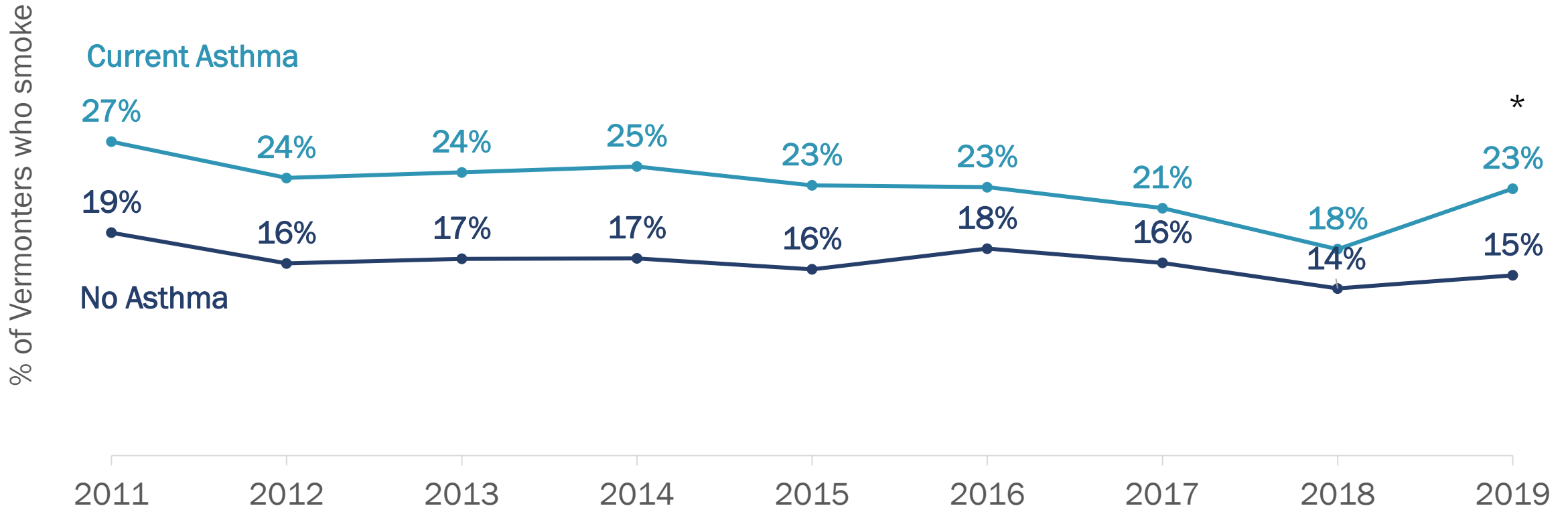
Adults **with current asthma** are more likely to smoke every day than **those without current asthma**.[‡]



* Significantly different from another group of comparison.

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

In 2019, adults with current asthma were more likely to smoke than adults without asthma.‡



* Smoking rates are significantly different from each other.

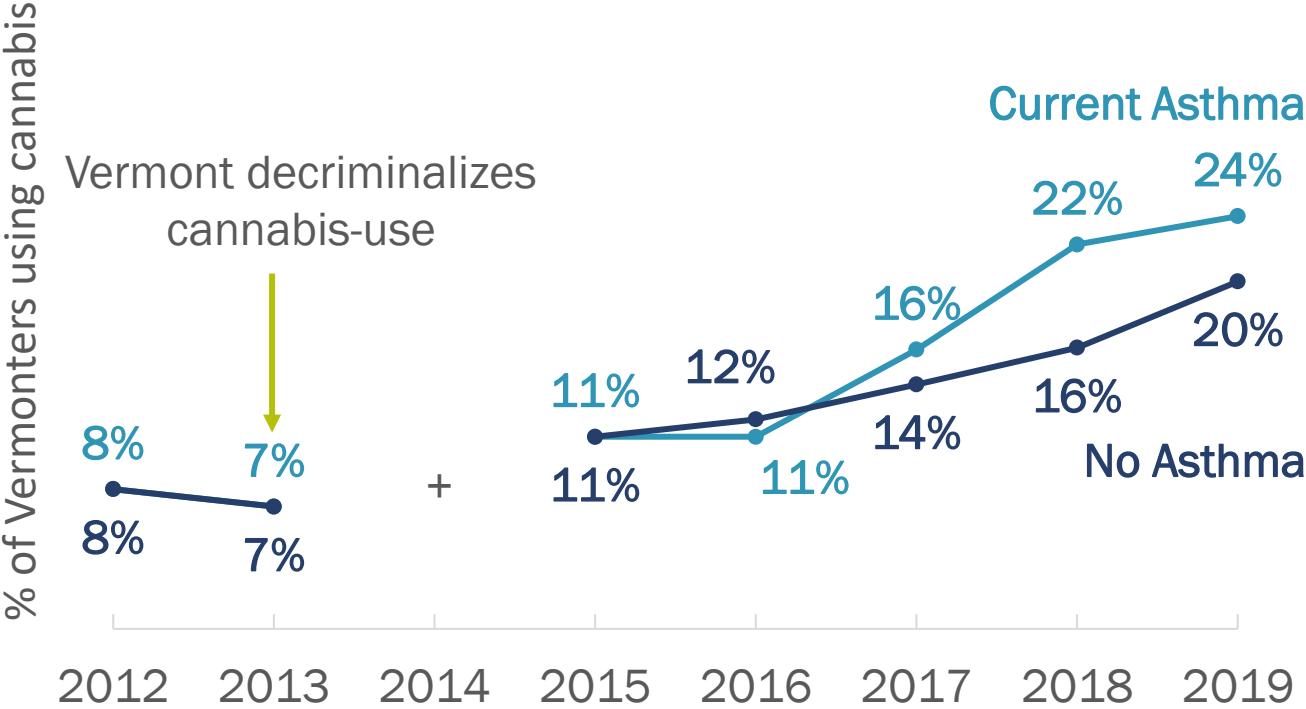
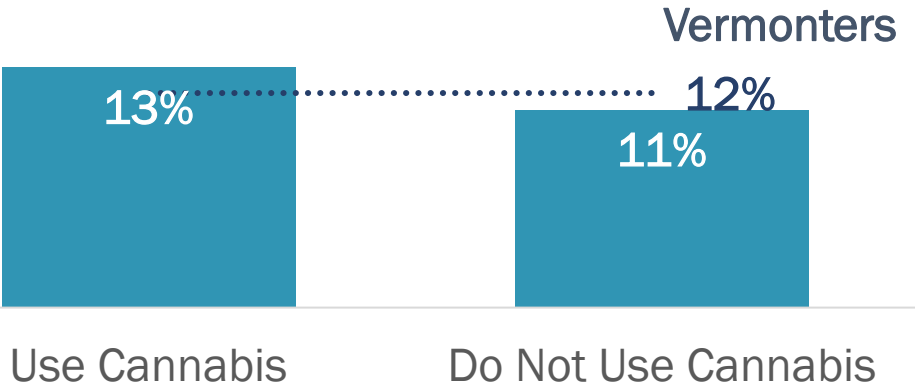
Vermont Department of Health Source: 2011-2019 BRFSS

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

Are Vermonters who use cannabis^o at higher risk for asthma?

Adults who use cannabis have a similar rate of asthma as those who do not use cannabis.

In 2019, the rate of cannabis use was the same for **adults with** and **adults without** current asthma.



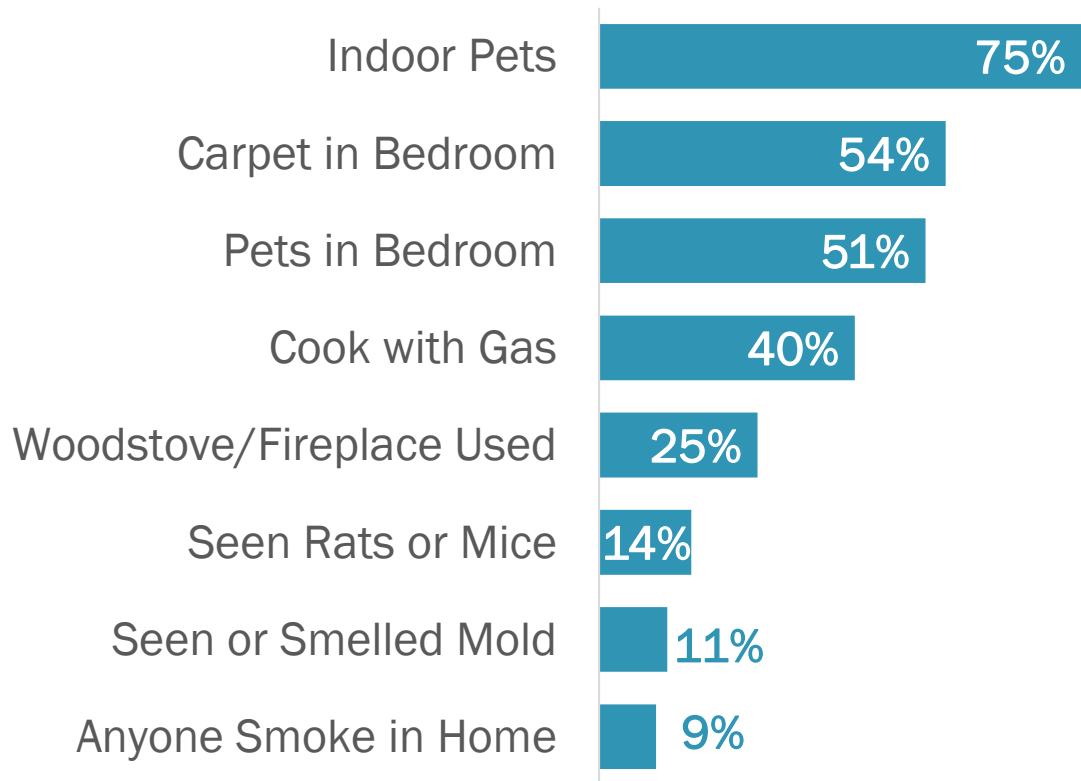
^oSome of the data sources referenced in this document use the term “marijuana” to refer to cannabis. We have used “cannabis” to reflect updated terminology.

Vermont Department of Health Source: 2012-2019 BRFSS

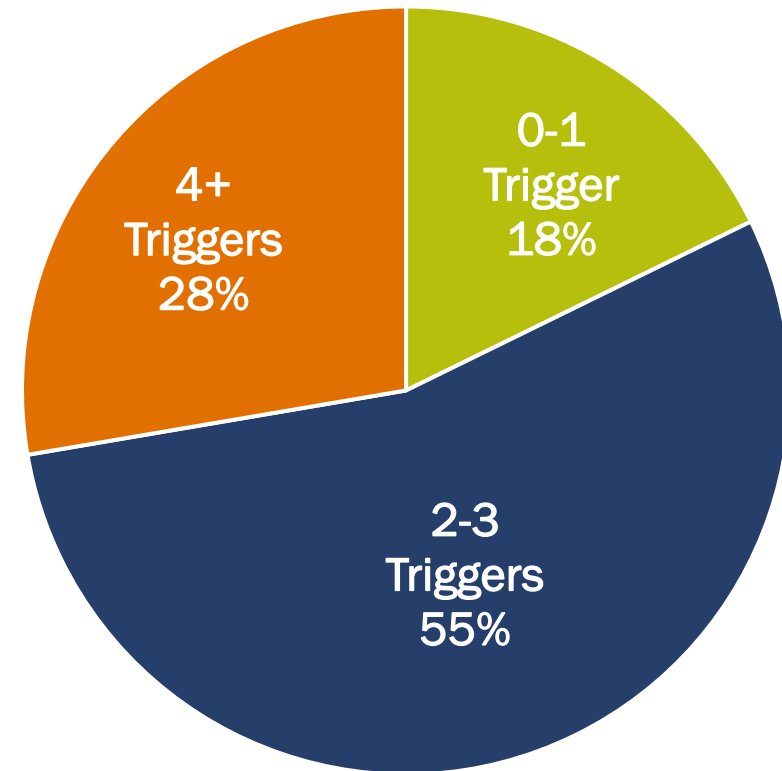
+ Data not available for 2014.

What environmental factors are adults with current asthma exposed to in the home?

More than half of adults with current asthma report indoor pets, carpet in the bedroom and pets in the bedroom.

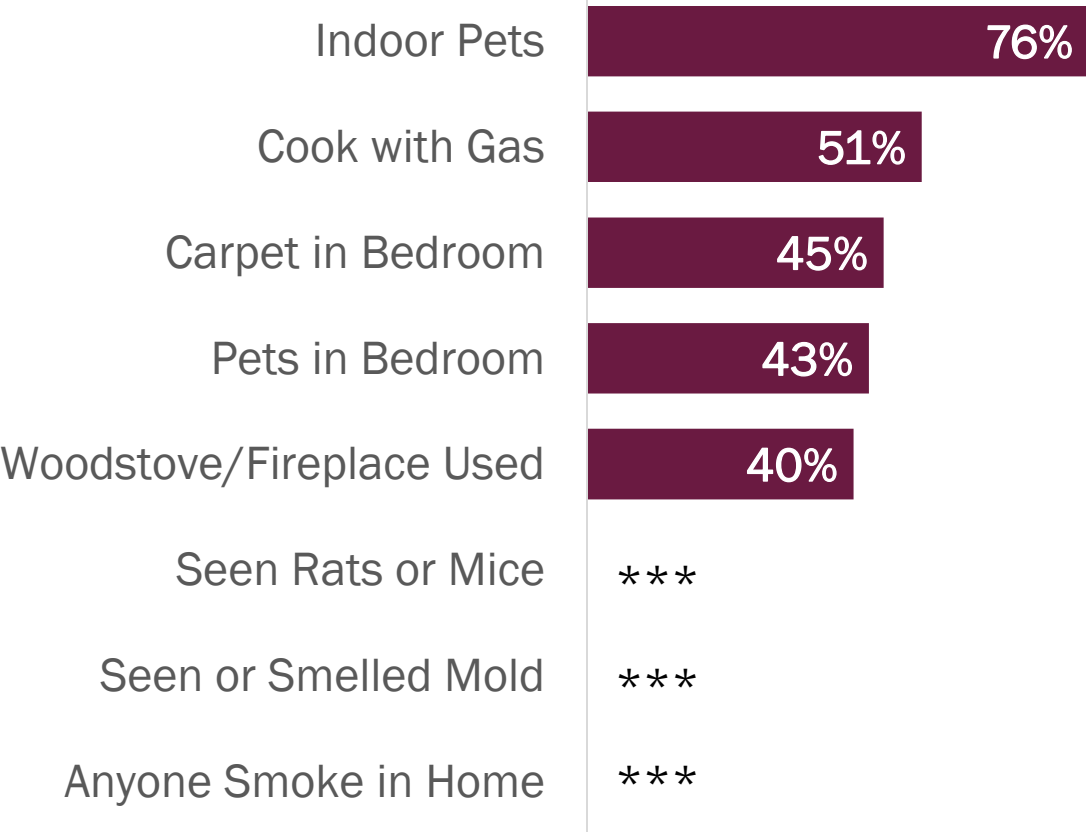


83% of adults with current asthma report 2 or more triggers in their home.

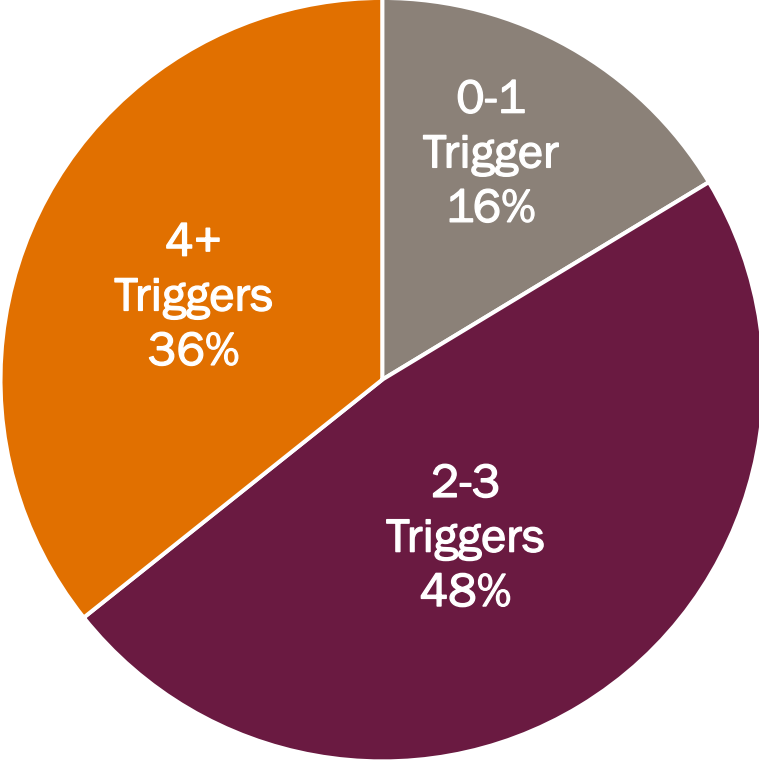


What environmental triggers are children with current asthma exposed to in the home?

Most children with current asthma are exposed to indoor pets and gas cooking stove in the home.

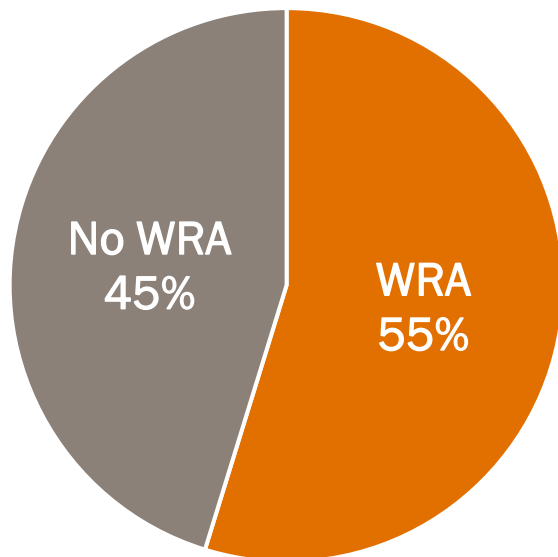


84% of children with current asthma are exposed to 2 or more triggers at home.



Do Vermonters have Work Related Asthma (WRA)?

More than half of adults with current asthma have **WRA**.



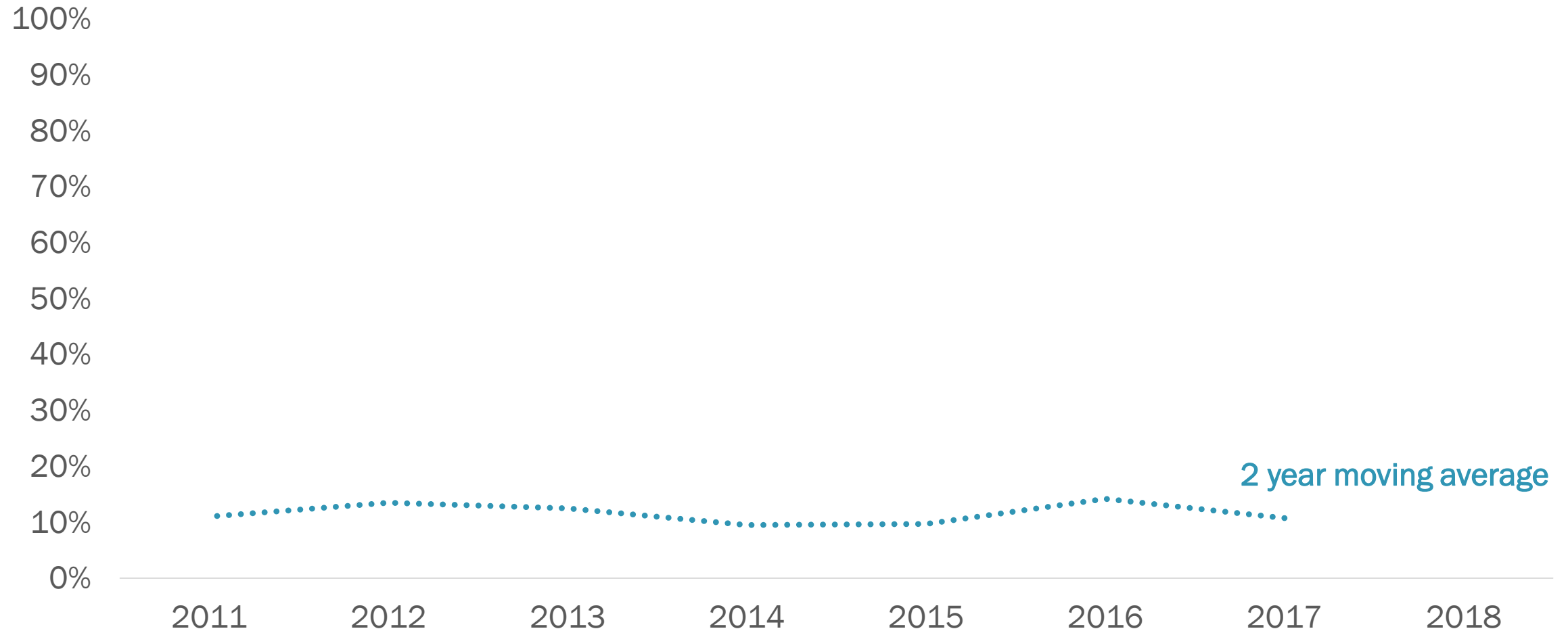
More than a quarter of adults with asthma report that their **previous** and/or **current** job has exacerbated their asthma.



Adults **with WRA** miss on average **10.1** days of work in a year, compared to **.7** days for those with asthma but **without WRA**.

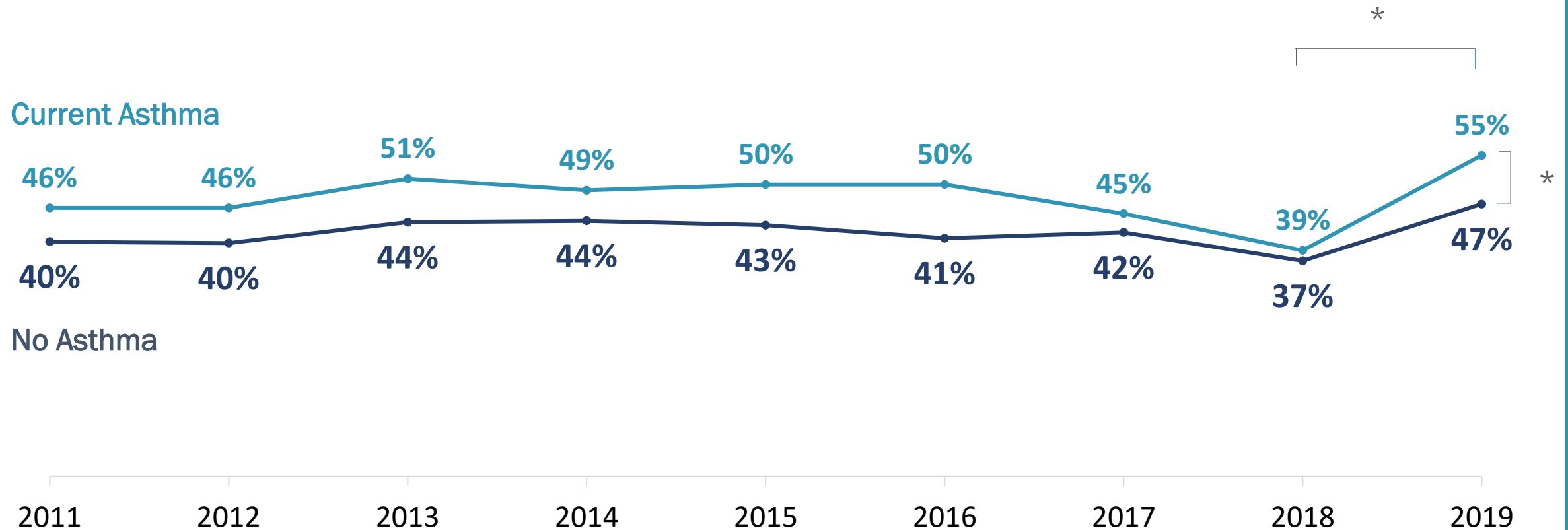


Approximately 10% of adults with current asthma have not been able to buy asthma medication due to cost in recent years.

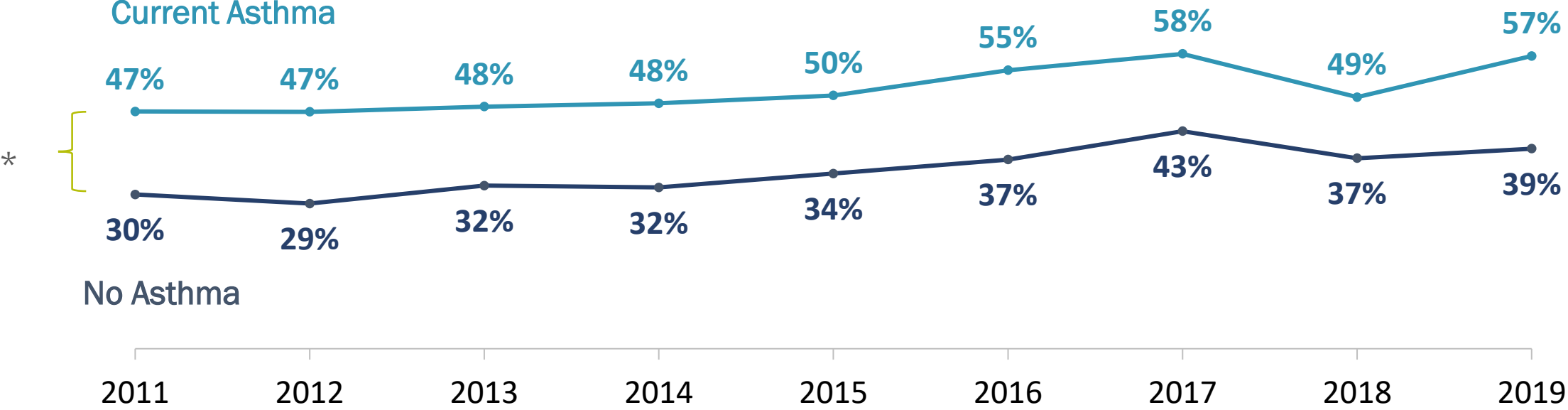


Adults with current asthma were more likely to receive the flu vaccine in 2019 than those without asthma.

Both populations received the flu vaccine at a higher rate in 2019 than in 2018.



Adults with **current asthma** have received the one-time pneumonia vaccine at a higher rate than those **without asthma** in recent years.

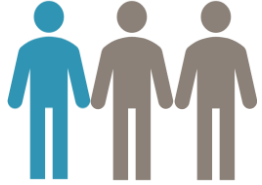


* Significantly different from another group of comparison.

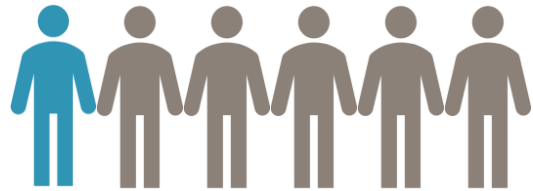
Quality of Life

How does having current asthma affect Vermonters' quality of life?

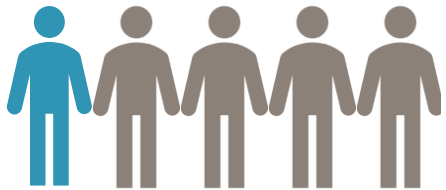
How are adults with current asthma affected by their asthma?



1 in 3 (33%) adults report activity limitation in the last month.



1 in 6 (16%) adults report missing at least one day of work in the last year.



1 in 5 (19%) adults report sleep disruption in the last month.

How are children with current asthma affected by their asthma?



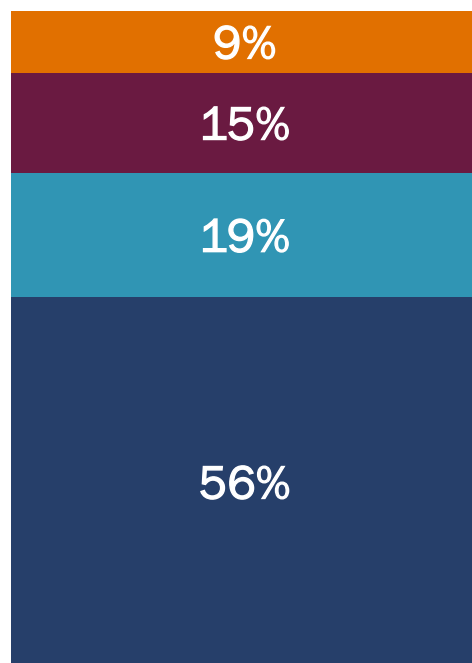
1 in 3 (31%) children had activity limitation in the last month.



More than 1 in 6 (18%) children missed at least one day of school in the last 12 months.

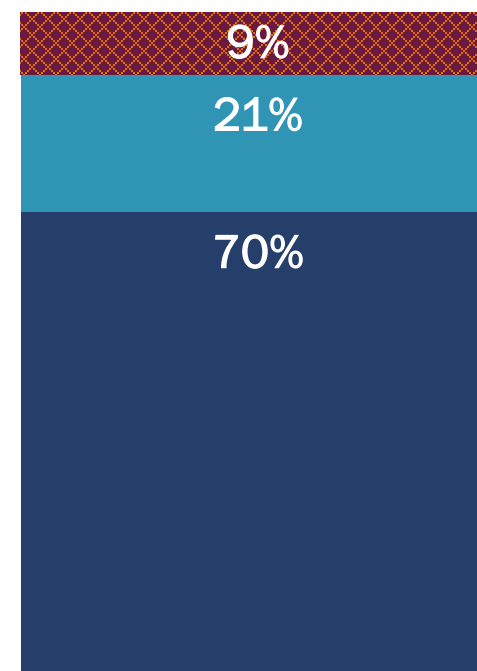
How severe is asthma in Vermont?

24% of adults have moderate persistent or severe persistent asthma.



Adults

9% of children have moderate persistent or severe persistent asthma.



Children

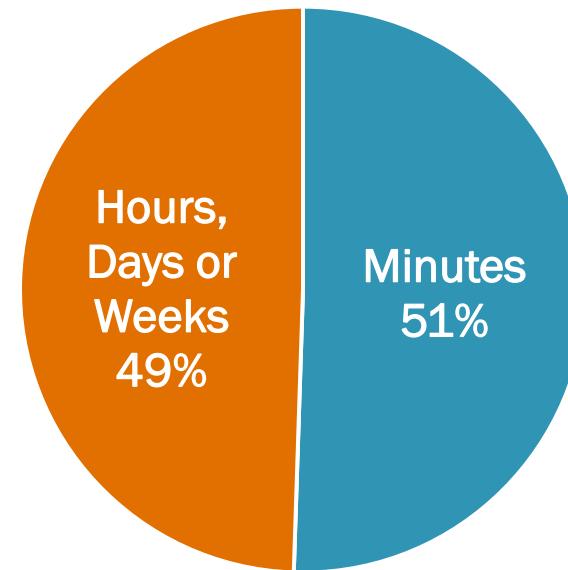
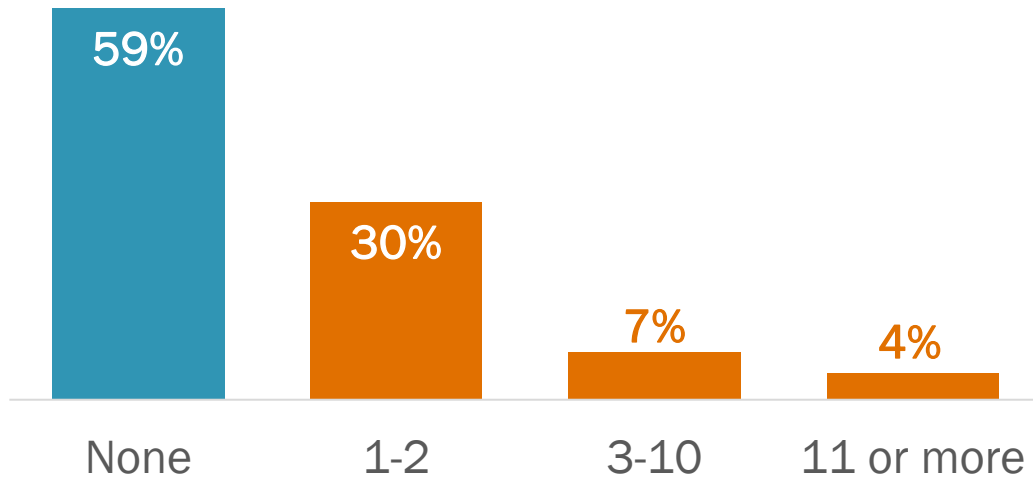
- Severe Persistent
- Moderate Persistent
- Mild Persistent
- Mild Intermittent



55% of adults with current asthma had an exacerbation in the past year.

41% of adults had one or more exacerbations in the past 3 months.

The duration of the most recent exacerbation lasted for **hours, days or weeks** for about half of adult respondents.



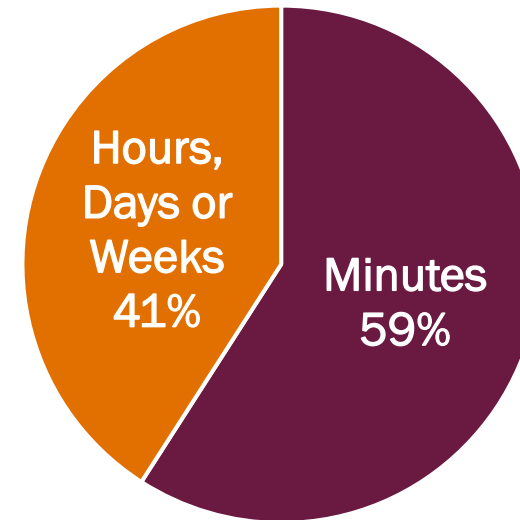
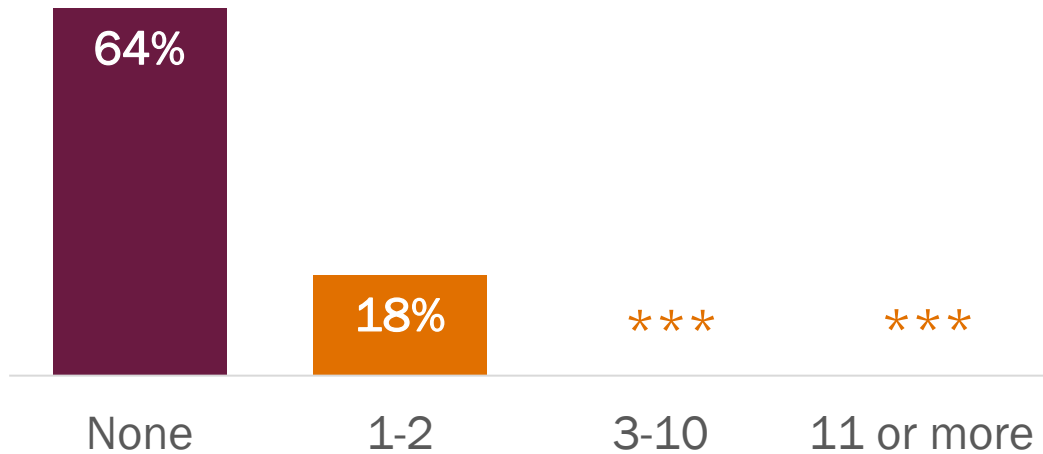


61%

of children with current asthma had an exacerbation in the past year.

36% of children had one or more exacerbation in the past 3 months.

The duration of the most recent exacerbation lasted for **hours, days or weeks** for about 4 in 10 children.

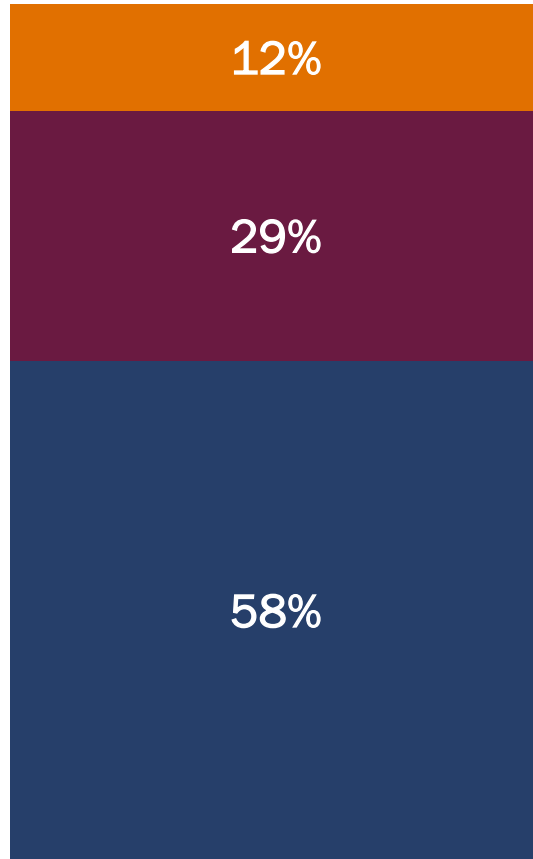


Asthma Management

How are Vermonters and their health care providers managing asthma?

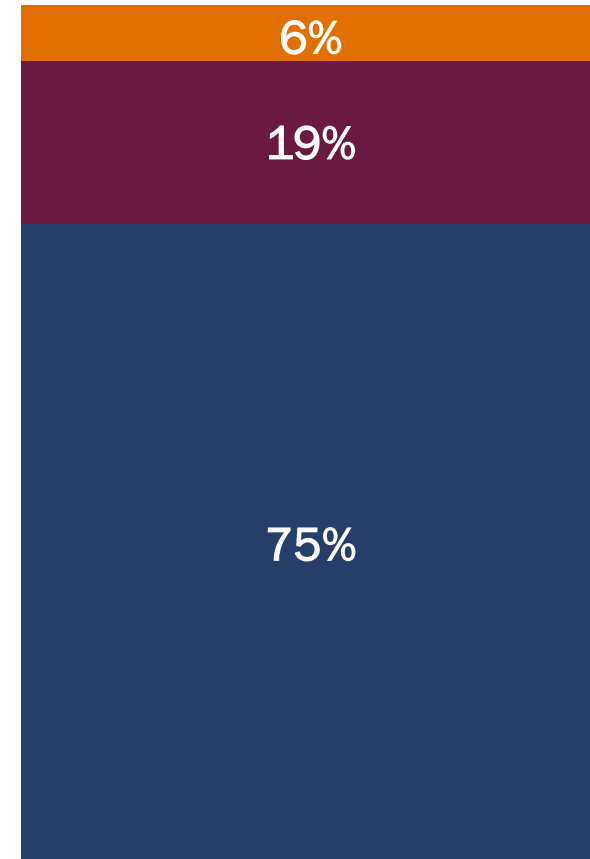
How well-controlled is asthma in Vermont?

1 in 8 adults have poorly controlled asthma.



Adult

1 in 17 children have poorly controlled asthma.



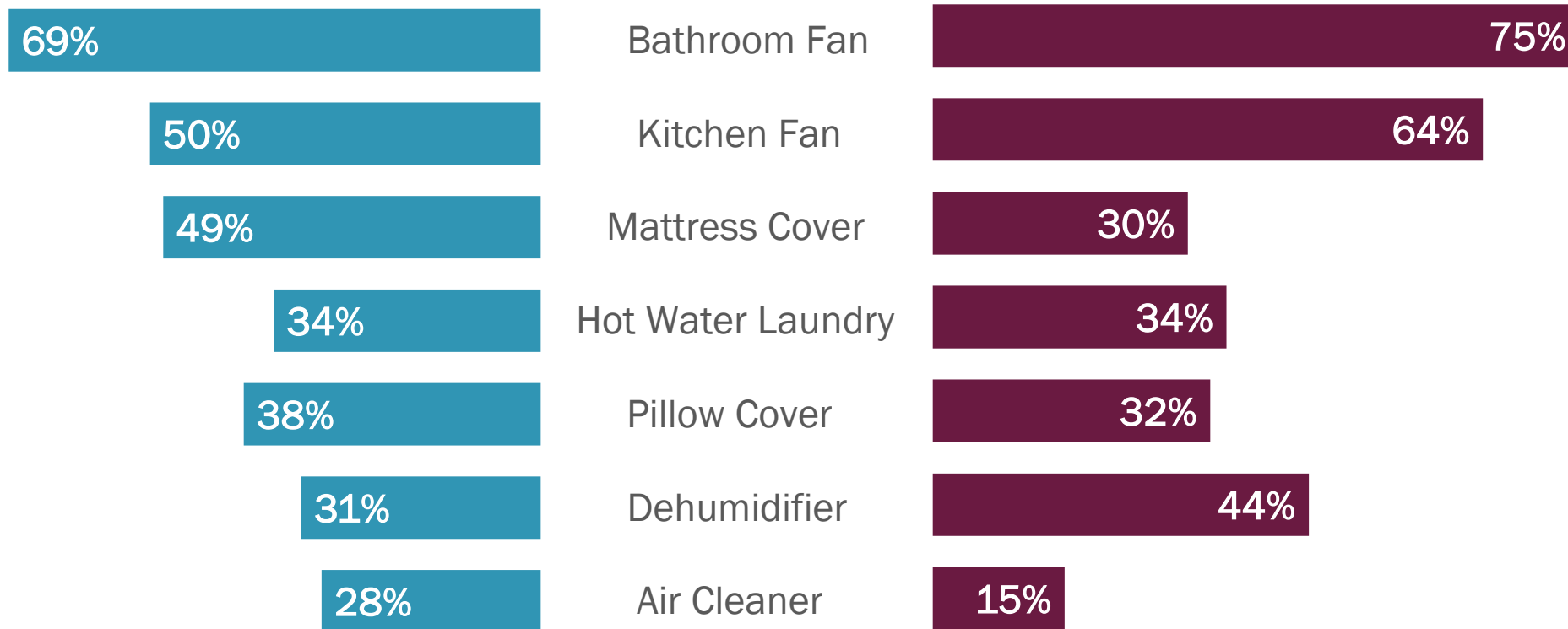
Child

- Poorly Controlled
- Not Well-Controlled
- Well-Controlled

What preventative measures do **adults** and **children** with current asthma have in the home?

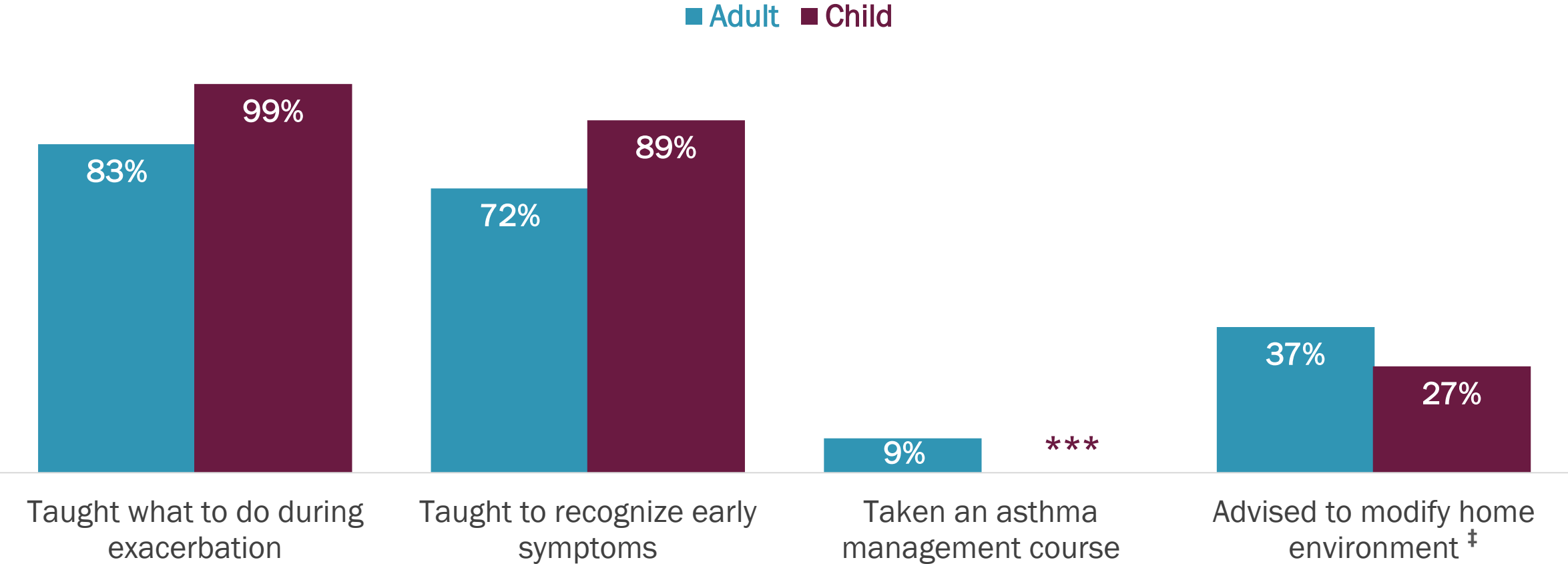
Half or more of all **adults** have bathroom fans, kitchen fans and mattress covers.

More than half of **children** have bathroom fans and kitchen fans.



How are Vermonters educated on asthma management?

More **children** are provided education on exacerbations than **adults**.



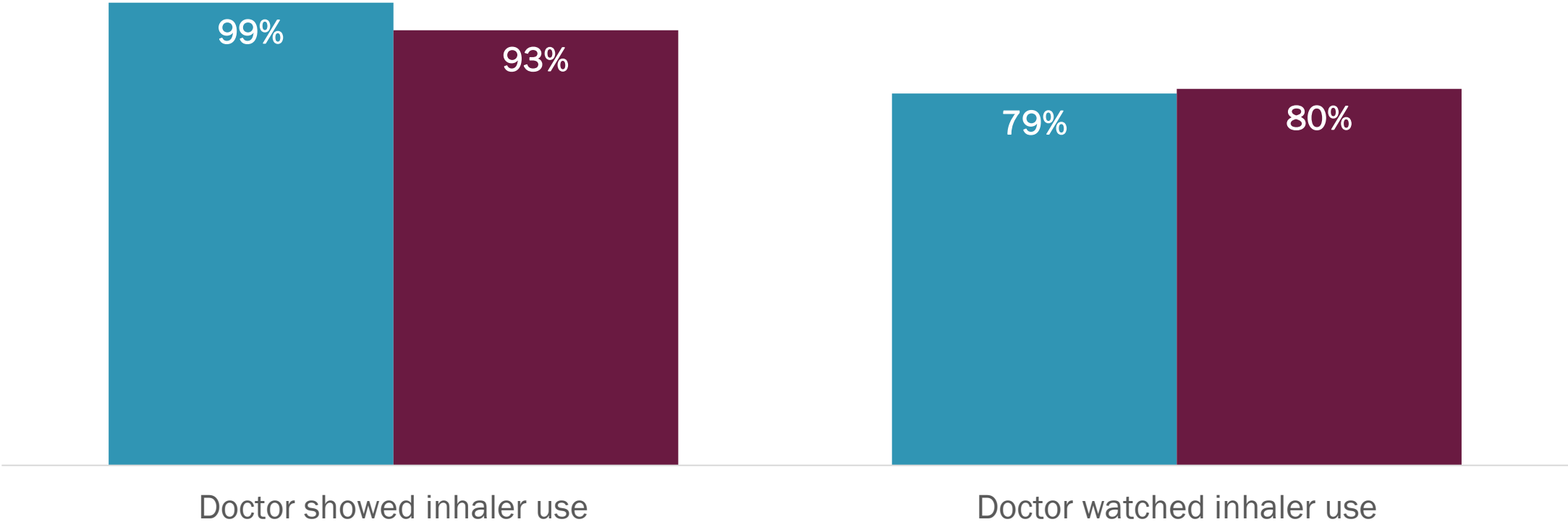
*** Sample size too small to report.

† Estimates are age-adjusted to the 2000 U.S. standard population

How are Vermonters educated on asthma management?

Most **adults** and **children** with asthma were educated on inhaler-use by a provider.

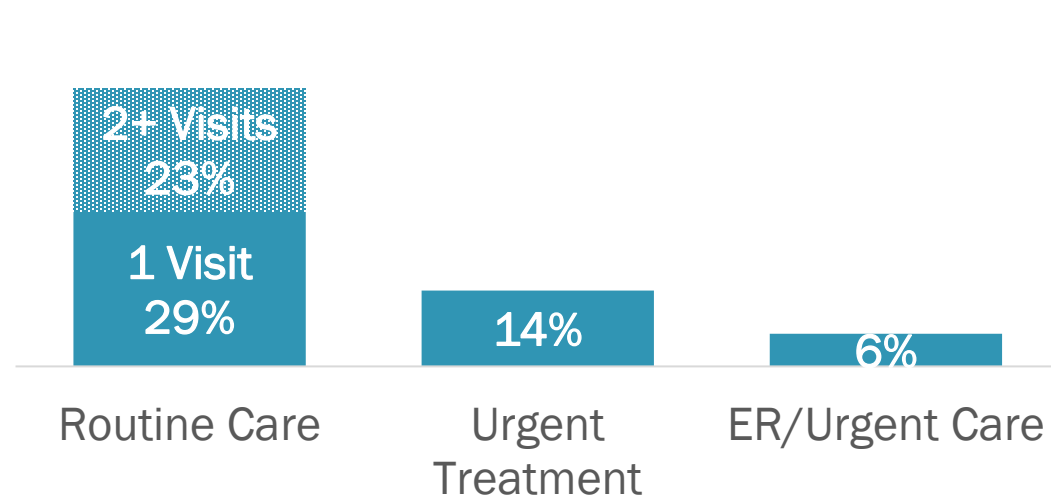
■ Adult ■ Child



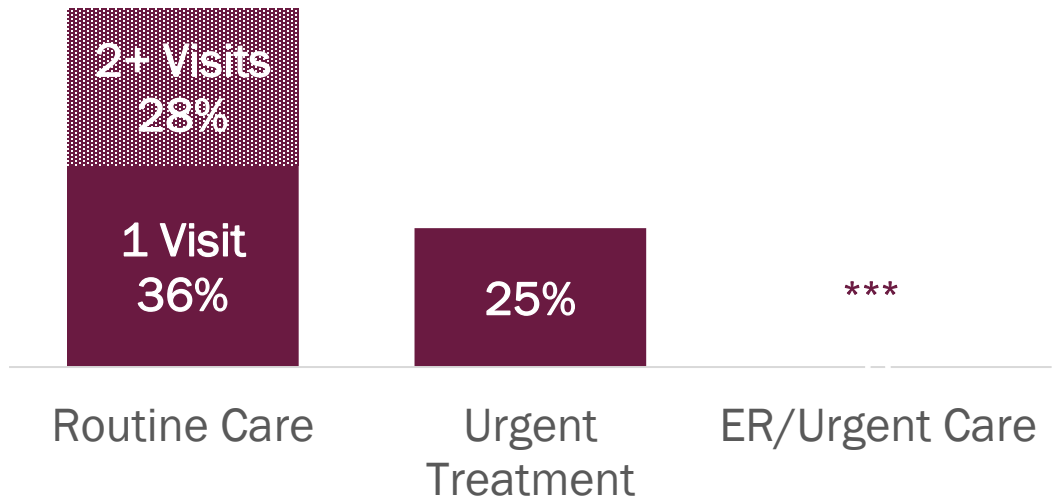
How are Vermonters using the health care system to manage their asthma?

52% of adults with current asthma had at least 1 routine visit for asthma in the past year.

About 1 in 20 adults used emergency services to manage their asthma.



64% of children with current asthma had at least 1 routine visit for asthma in the past year.

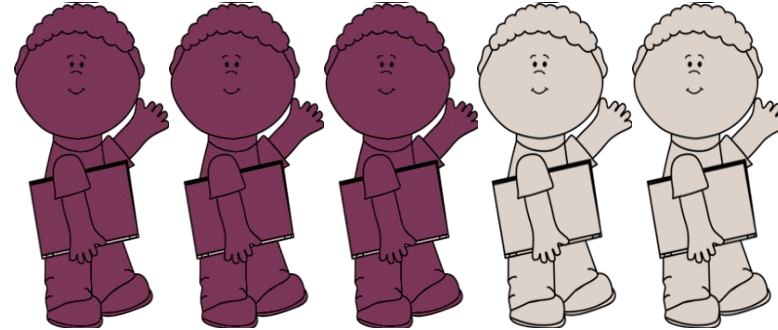


Are Vermonters with asthma receiving asthma action plans?

1 in 5 adults received an asthma action plan from a provider.‡



3 in 5 children received an asthma action plan from a provider.

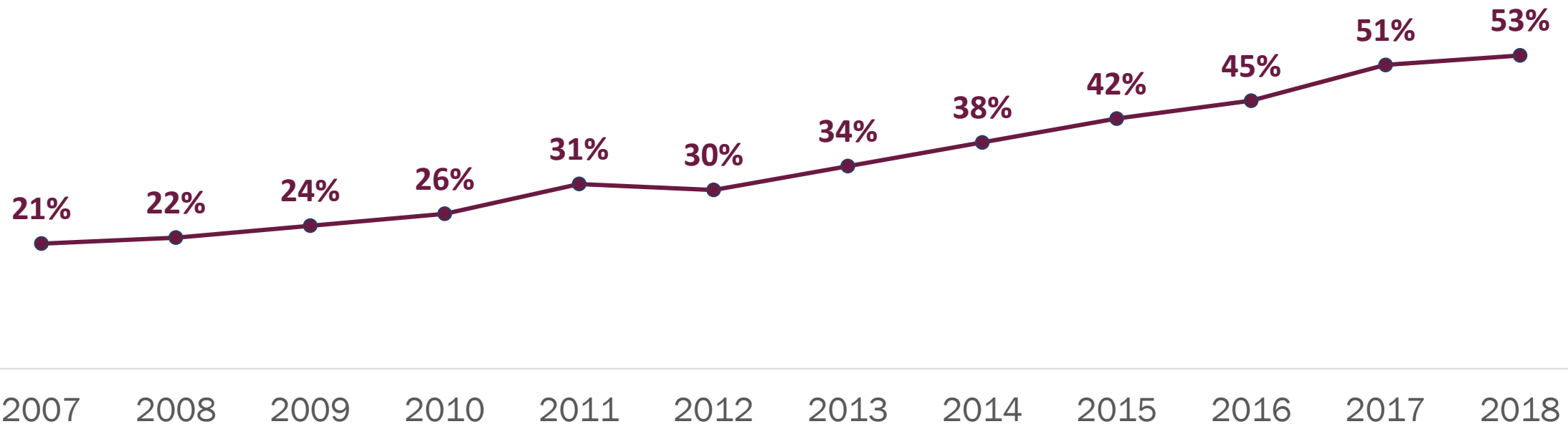


‡Estimates are age-adjusted to the 2000 U.S. standard population

Vermont Department of Health Source: 2018 Adult ACBS, 2015-2017 Child ACBS

The percentage of children with asthma with a registered asthma action plan in school has steadily increased in recent years.

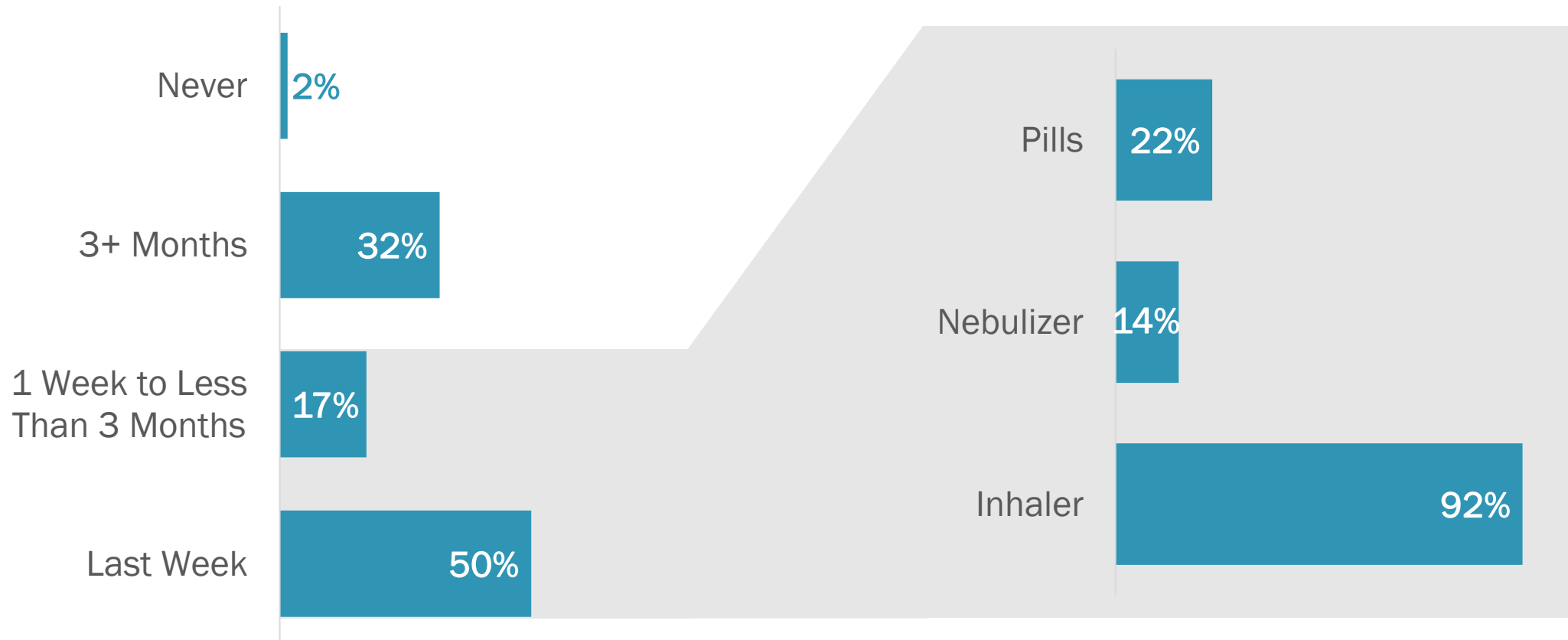
Since 2017, more students with asthma have had a registered asthma action plan than have not.



How are Vermonters using medication to treat their asthma?

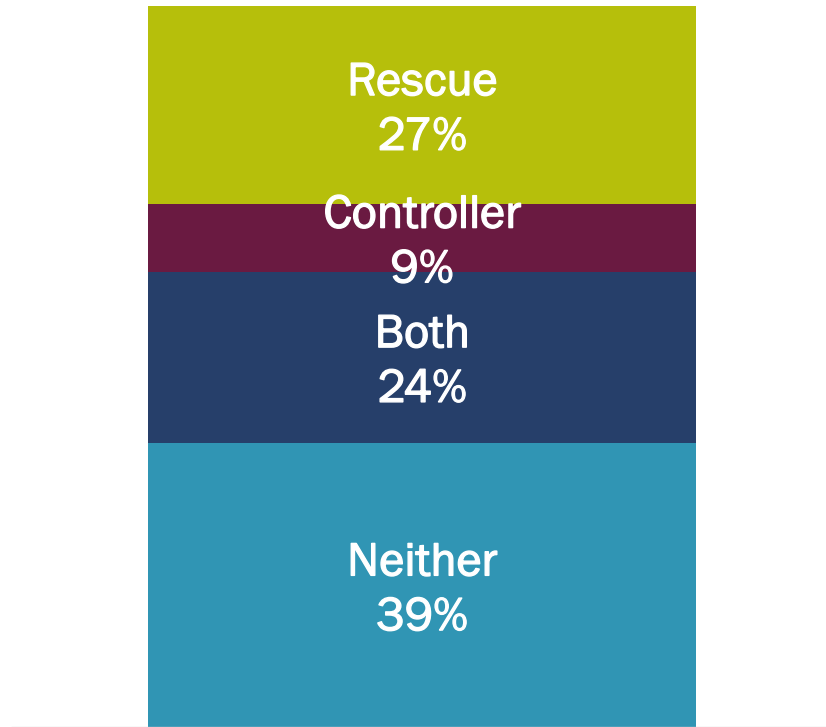
Half of adults with current asthma used asthma medication in the last week.

Almost all adults who used asthma medication in the past 3 months used an inhaler.

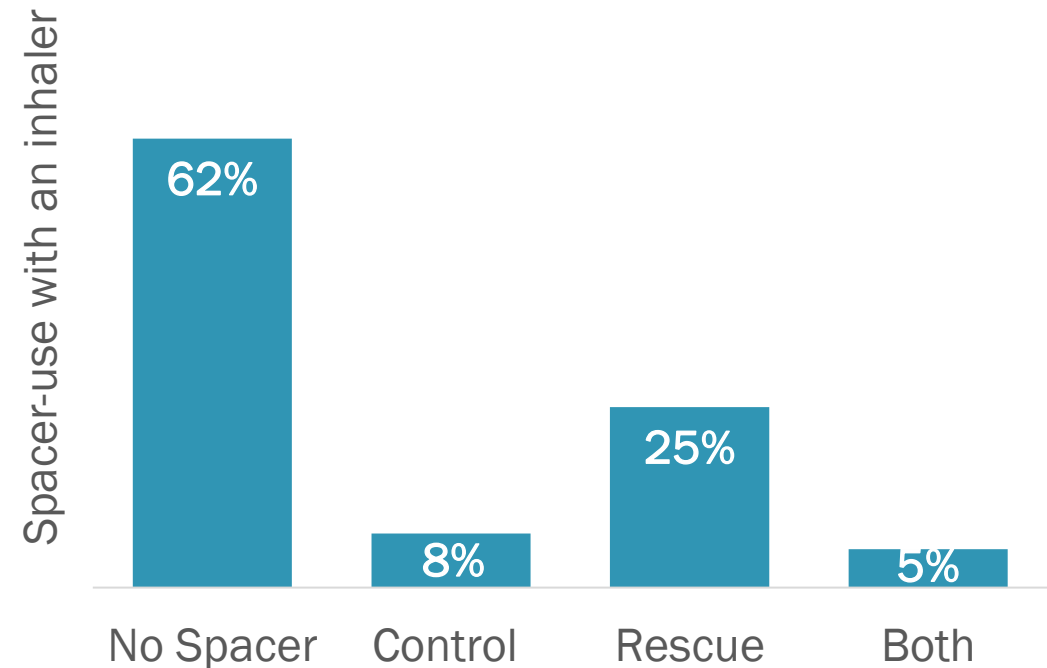


How are Vermont adults using inhalers?

Most adults with current asthma used one or both types of inhalers in the past three months.



Most adults do not use a spacer with their inhaler.

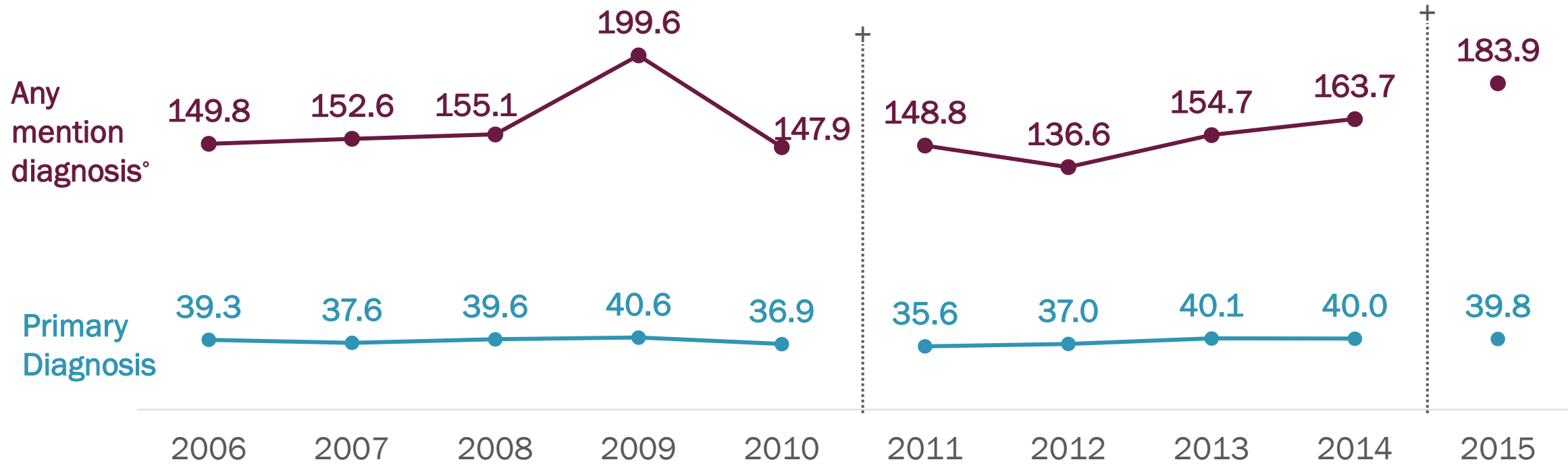


Indications of Poor Asthma Management

How are Vermonters affected by poor asthma management?

The rate of ED visits for Vermonters with a **primary diagnosis** of asthma in 2015⁺ was similar to recent years.

Emergency Department Visits for Asthma (rate per 10,000)



+ See note in Data Sources (page 65) regarding (i) changes to the Hospital Discharge data which occurred during these times and (ii) why 2015 is the most recent year of data available.

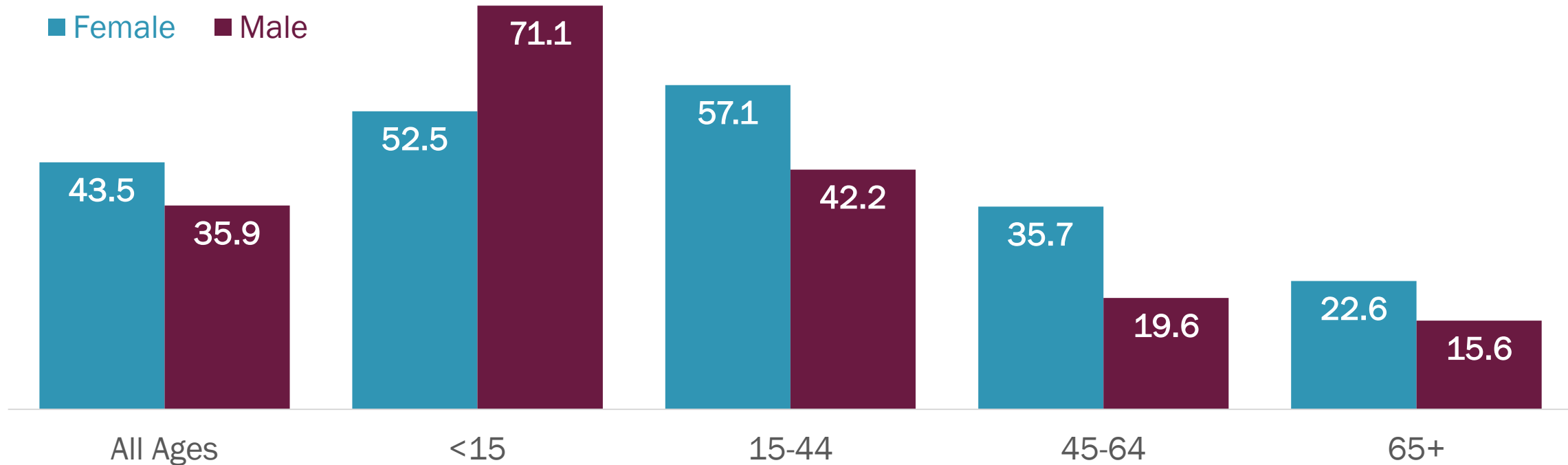
^o **Any mention diagnosis** refers to visits where a patient was coded as having asthma, but asthma may not have been the primary diagnosis or reason for the visit.

Vermont Department of Health Source: VUHDDS 2006-2015

Who is using Emergency Departments for their asthma?

Female Vermonters have a higher rate of ED visits with asthma as a primary diagnosis than **male Vermonters**. **Males** under the age of 15, however, have a higher rate of ED visits than **females** of the same age.

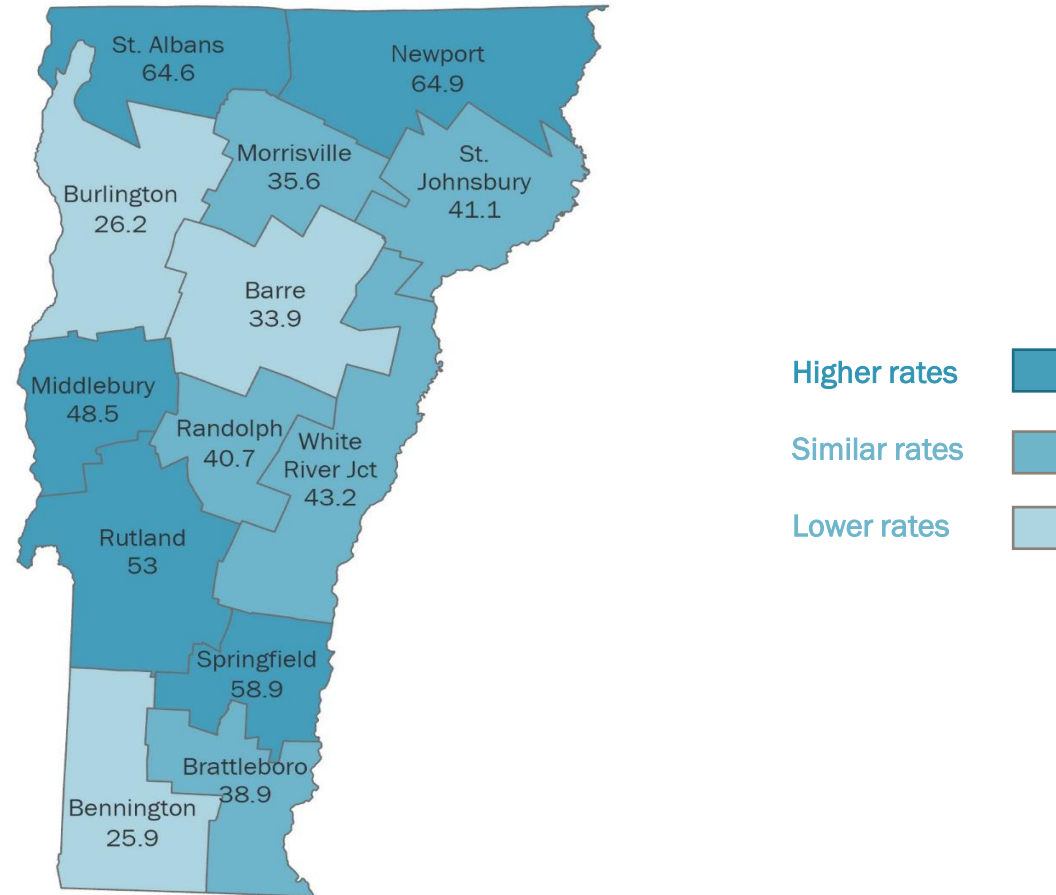
Primary Asthma Diagnosis (rate per 10,000)



Who is using Emergency Departments for their asthma?

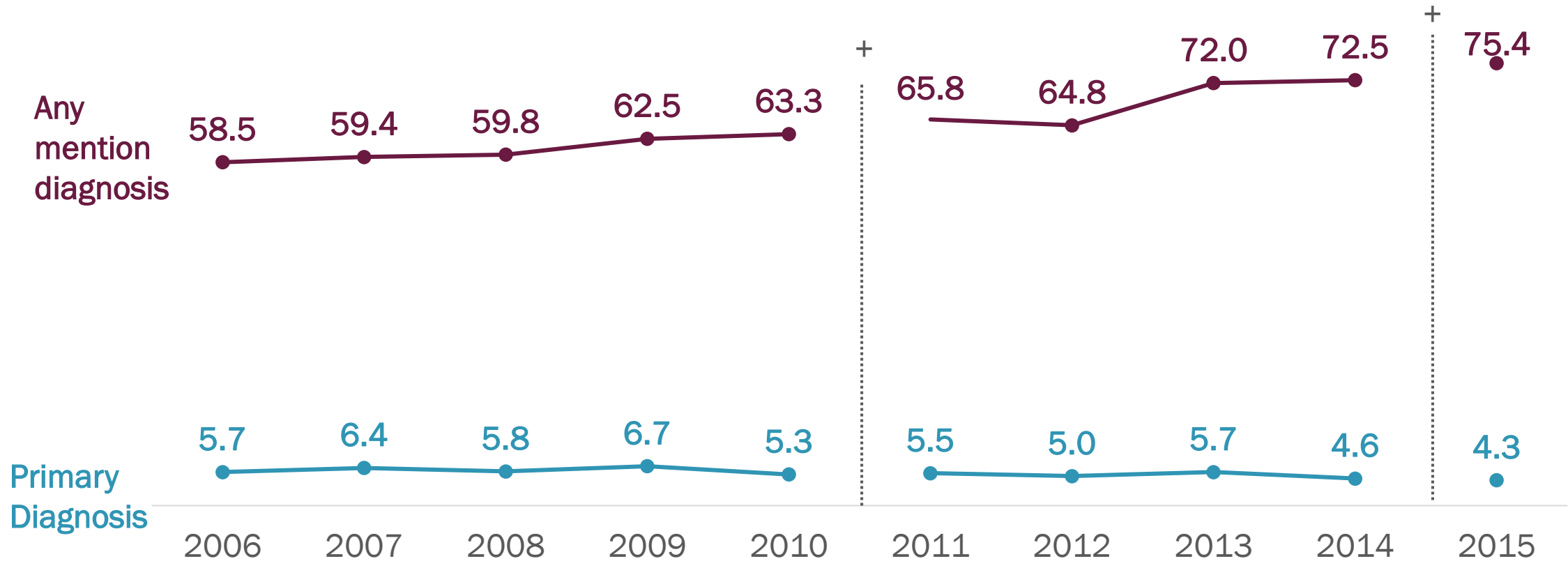
St. Albans, Newport, Middlebury, Rutland and Springfield hospital service areas (HSAs) have higher ED visit rates than the statewide rate.

Burlington, Barre and Bennington HSAs have a lower rate of ED visits.



The rate of hospitalizations with a **primary diagnosis** of asthma decreased from 2009 to 2015⁺.

Hospital Discharges with an Asthma Diagnosis (rate per 10,000)

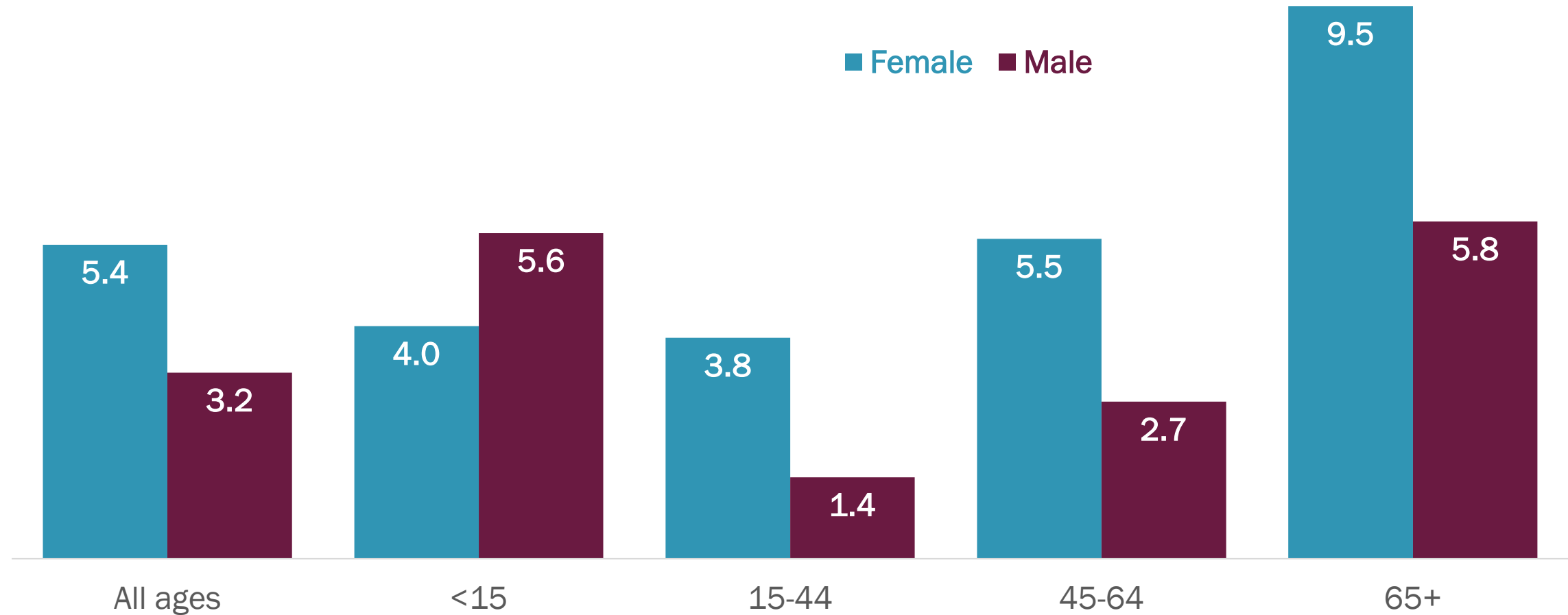


+ See note in Data Sources (page 65) regarding (i) changes to the Hospital Discharge data which occurred during these times and (ii) why 2015 is the most recent year of data available.

Who is being hospitalized for asthma in Vermont?

Female Vermonters have a higher rate of hospitalizations with a primary diagnosis of asthma than **male Vermonters**.

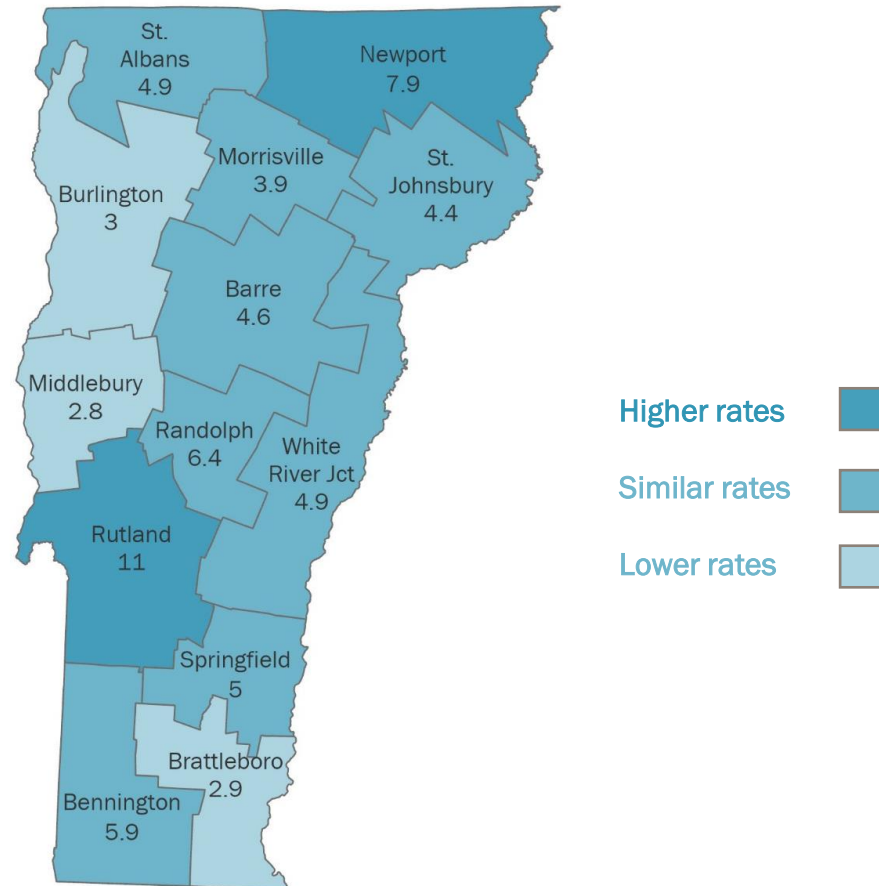
Primary Asthma Diagnosis (per 10,000)



Who is being hospitalized for asthma in Vermont?

Newport and Rutland hospital service areas (HSAs) have higher hospitalization rates than the statewide rate.

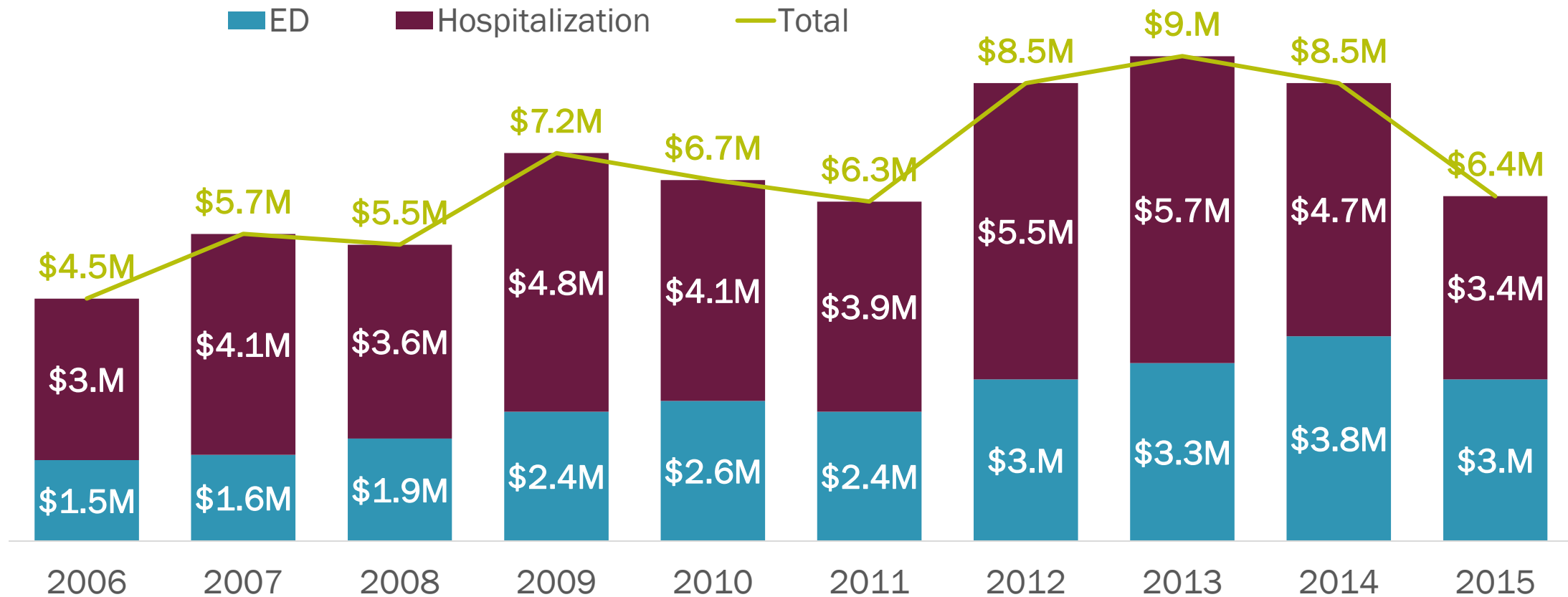
Burlington, Middlebury and Brattleboro HSAs have a lower rate of hospitalizations.



In 2015, hospitalization and ED visits primarily for asthma accounted for \$6.4 million in charges.

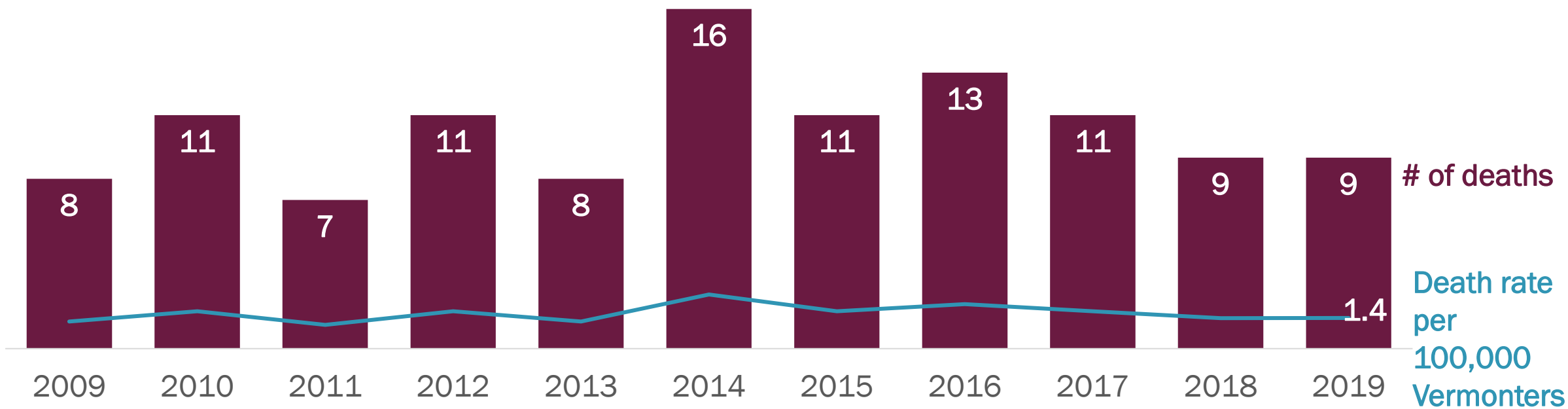
The average charge for an **ED visit** for asthma was \$1,700.

The average charge for a **hospitalization** for asthma was \$14,700.



114 Vermonters have died in the past 10 years due to a primary cause of asthma.

In 2019, the death rate due to asthma was 1.4 per 100,000 Vermonters.

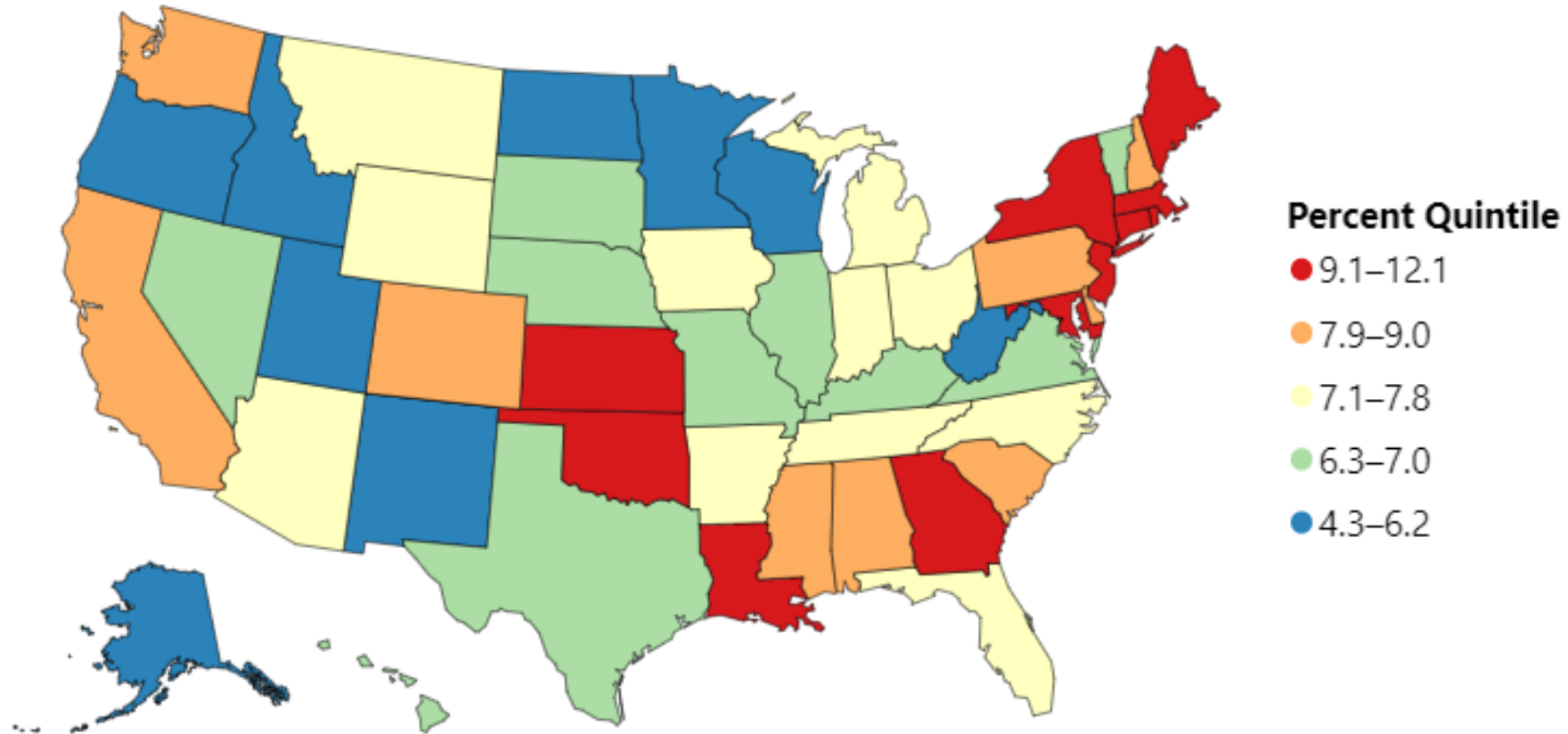


U.S. Comparisons

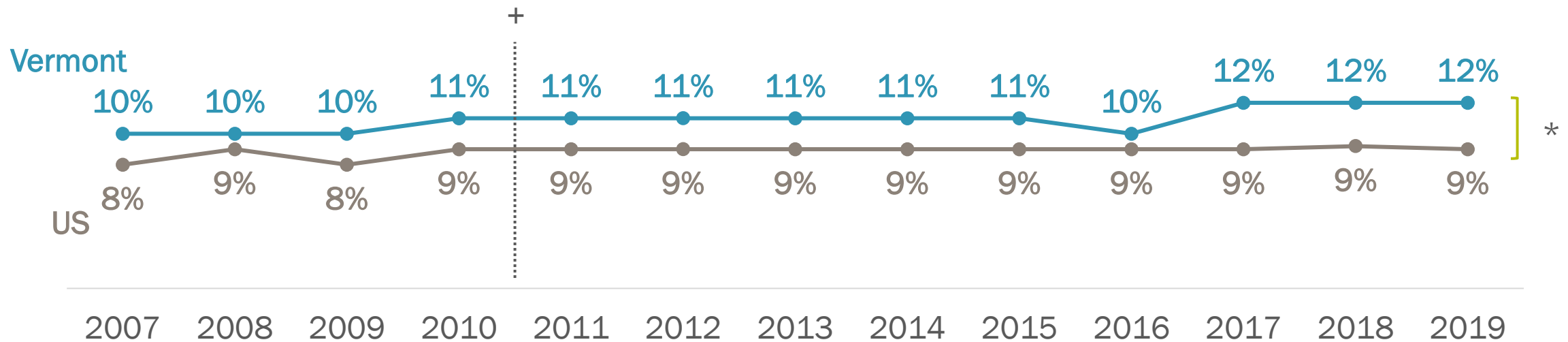
How does Vermont's asthma prevalence compare to that of the U.S.?



In 2019, Vermont ranked 40th for the rate of child current asthma among US states and territories.

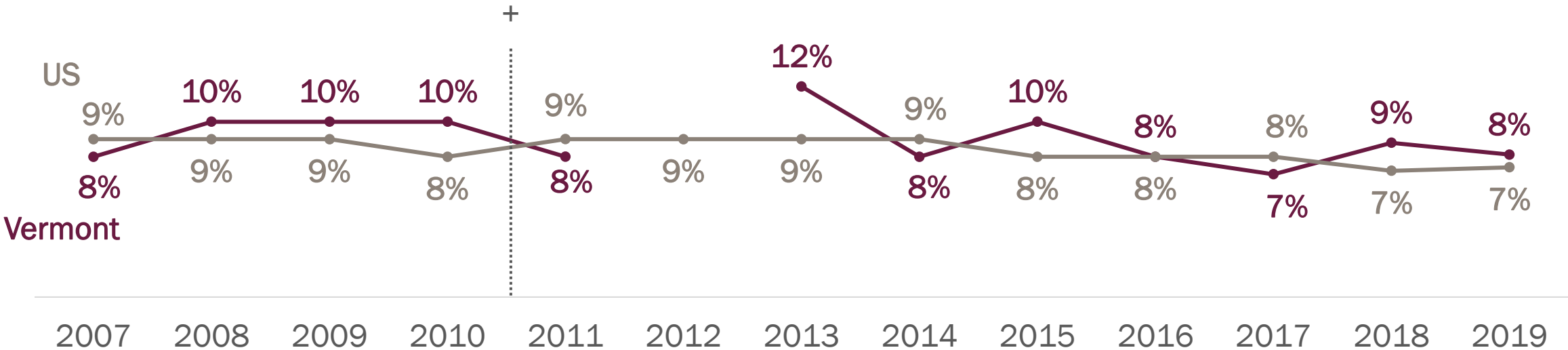


Since 2007, the prevalence of current asthma in **adult Vermonters** has been higher than that of the **US adult population**.



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

Since 2007, the prevalence of current asthma among Vermont youth has been similar to that of the US child population.



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

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, child data for combined years 2015-2017 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 possible 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.

School Nurse Report: Annual web-based survey conducted by the Maternal and Child Health Division that includes information on access to health care, insurance coverage, asthma status and presence of asthma action plans at schools for all school-age children. Standardized methodology for asking asthma-related questions was implemented in 2014-2015.

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>



Learn more about asthma in Vermont:

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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