



Heart Disease Surveillance

Data Pages

Division of Health Statistics & Informatics

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Cardiovascular disease (CVD) is a leading cause of morbidity and mortality in Vermont and the United States overall.

CVD is a chronic condition which, like many chronic conditions, is linked to lifestyle, environment, access to equitable care, and genetic factors. Lifestyle which is often driven by social determinants of health, such as poor diet, access to healthy affordable food, physical inactivity, and tobacco use, can increase the risk of developing CVD, or one of its precursor conditions (e.g., hypertension or high cholesterol) and experiencing poor health outcomes.

The purpose of this document is to present the most current and pertinent data related to CVD and related risk factors among Vermont adults. The Heart Disease Surveillance Data Pages use multiple data sources, including:

- 2024 Vermont Vital Statistics
- 2024 Vermont Health Care Uniform Reporting and Evaluation System (VHCURES)
- 2023 Behavioral Risk Factor Surveillance System (BRFSS)
- 2022 Vermont Uniform Hospital Discharge Data Set (VUHDDS)

Data Acknowledgement

The Vermont Department of Health recognizes the many social economic and environmental inequities which drive the data presented in this document. We are working to incorporate data reflective of these lived experiences among all Vermonters. For this report demographic and population characteristic data (i.e., race/ethnicity, sexual orientation/gender identity, disability status, etc.) was collected according to categories from a variety of data owners with different collection methods. You will see these categories reported as defined starting on the next page (pg. 4).

How to Read This Document

Statistical Comparisons

Statistical differences are determined by comparing **95% confidence intervals**, unless stated otherwise. A confidence interval represents the range in which an estimated data point could fall that was calculated based on observed data. This means that one can be 95% confident that the true value of the data point being examined falls within the specified confidence interval range. If the confidence intervals from two groups do not overlap, the estimate was interpreted as significantly different from the other, noted in charts using an asterisk (*) and the terms “statistically different,” “significantly different,” or “significantly higher or lower.”



Healthy Vermonters 2030 (HV2030)

When this symbol is seen, a HV2030 measure is reported on the page. For more information on this initiative and to view individual measures visit <https://www.healthvermont.gov/about/reports/healthy-vermonters>

Definitions

Body Mass Index (BMI)

- BMI is a singular, indirect indicator of body fat meant to identify weight-related health risk. Though useful at a population level, it has limited usefulness at the individual level. BMI alone should not be used to define obesity. It is a calculation using a person's height and weight where for most adults a BMI between 18.5 and less than 30 is ideal, while anything less than 18.5 or 30 and over is considered unhealthy.

Cardiovascular Disease (CVD)

- CVD is a term that refers to several types of heart conditions, including coronary heart disease, heart attack and stroke.¹

Disability

- A composite measure of any self-reported disability (mobility, cognitive, visual, hearing, self-care, independent living) of any duration or permanence

Geographic Isolation

Measured using Rural-Urban Commuting Area (RUCA) codes (<https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes.aspx>).

- **Isolated Small Rural Town:** Sparsely populated areas of less than 2,500 people where travel mainly occurs in similar sized areas
- **Small Rural Town:** Low population areas of 2,500-9,999 people where 30%-50% of commuting primarily occurs in similar sized areas or areas of higher population, more urbanized, size
- **Micropolitan:** Higher, more urbanized, population areas of 10,000-49,999 people where commuting primarily takes place in similar sized areas or low population areas where commuting primarily occurs in higher population, more urbanized, areas
- **Urban:** Densely populated and urbanized areas of >49,999 people where commuting primarily takes place in similar sized areas or less densely populated areas where 30%-50% of commuting takes place in densely populated and urbanized areas

Source: ¹Centers for Disease Control and Prevention, Heart Disease, July 30, 2019.

Vermont Department of Health

Definitions (continued)

Poor Mental Health

- Adults reporting experiencing 14 or more days in a month where their mental health was perceived by them as not good.

Sexual Orientation and Gender Identity

- LGBTQ+: Any adult self-reporting as being something other than straight and heterosexual/cisgender
- HetCis: Any adult self-reporting as straight and not transgender

Socioeconomic Status (SES)

A composite measure calculated from self-reported household income (based on federal poverty level (FPL)) and level of education:

- Low: household income < 250% of the FPL and a high school or less education
- Middle: household income < 250% of the FPL with some college education or > 250% of the FPL with up to some college education
- High: 4-year college degree or higher education

Vermonters of Color

- White, Non-Hispanic: self-reported race of white with an ethnicity of not Hispanic
- Black, Indigenous and People of Color (BIPOC): A self-reported ethnicity of Hispanic of any reported race and all reported races other than white, including multi-race

Key Findings

Cardiovascular disease (CVD), like many chronic conditions, is linked to lifestyle, environment, access to equitable health care, and genetic factors. Lifestyle, which is often driven by social determinants of health, such as poor diet, access to healthy affordable food, physical inactivity, and tobacco use place people at higher risk of developing CVD or one of its precursor conditions (e.g., hypertension or high cholesterol) that regularly result in poor health outcomes and lower quality of life, as well as a need to more frequently access health care. These data pages highlight several key areas of concern where disease rates are consistently identified as having greater impact:

- The prevalence of high cholesterol, hypertension, and CVD are all significantly higher among those living with a disability. Additionally, hypertension and CVD are significantly more likely among those living at a low socioeconomic status compared to a high one. These higher rates suggest an undue burden of chronic disease in these populations that likely influence their quality of life.
- Despite relative stability in rates of emergency department visits with a primary diagnosis of CVD or hypertension, there has been an increase in any mention of the condition since 2020. This could be a result of poor disease control or condition management, possibly connected to decreased health care-seeking behavior seen during the COVID-19 pandemic. However, it may also be linked to concurrent or prior COVID-19 disease, which is known to adversely impact the cardiovascular system, leading to poorer health outcomes.
- Hypertension and Coronary Heart Disease (CHD) and stroke have much higher mortality rates as contributing causes to death than as primary causes, highlighting these chronic conditions as ones that influence or worsen others.
- Hypertension and high cholesterol are leading causes of comorbid chronic conditions. High cholesterol is the most common comorbid chronic condition for those with hypertension and third most common comorbid condition for those with CVD. Hypertension is the leading comorbid chronic condition for those with high cholesterol and CVD. Arthritis is consistently the second most common comorbid chronic condition for high cholesterol, hypertension, and CVD. This likely highlights the link between chronic inflammation, experienced by all those with these diagnoses, and these conditions.

Cardiovascular Disease (CVD)

- Impact of CVD on Vermonters
- Risk factors that increase the chance of developing it
- Management and health care utilization of those who have it

About Cardiovascular Disease (CVD)

- CVD is a term that refers to several types of heart conditions, including coronary heart disease, heart attack and stroke.¹
- Certain things can increase the risk of CVD, including several health conditions, lifestyle, age and family history.
 - Almost half of Americans¹ and over half of Vermonters² have at least one of the key risk factors for CVD: High blood pressure (hypertension), high cholesterol or smoking.
 - Other health conditions and behaviors that can lead to CVD are diabetes, overweight and obesity, poor diet, physical inactivity, and excessive alcohol use.¹
- CVD is one of the leading causes of death in the U.S.¹ and in Vermont³.

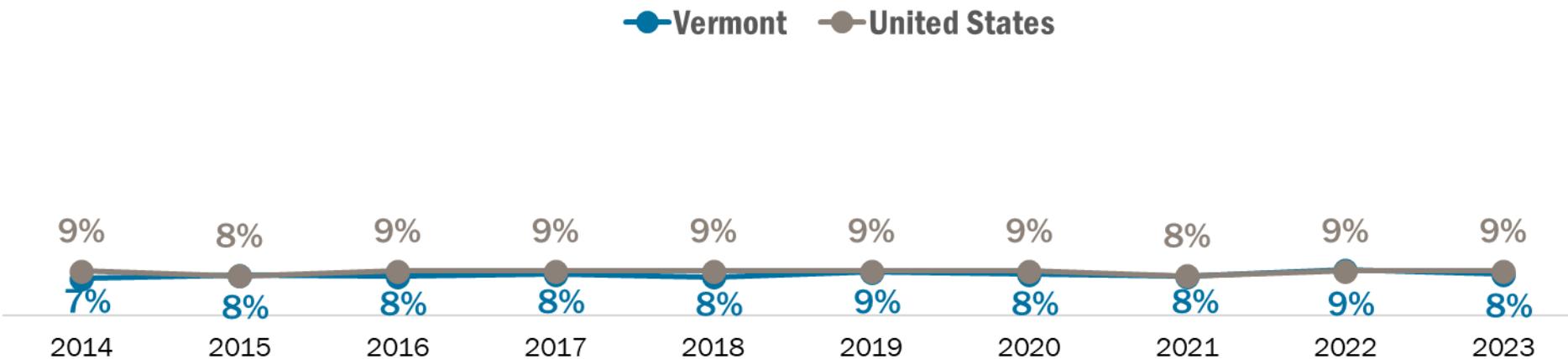
Source: ¹Centers for Disease Control and Prevention, Heart Disease, July 30, 2019.

²VDH. Cardiovascular Disease Risk. https://www.healthvermont.gov/sites/default/files/documents/pdf/HS_brfss_cvd_risk.pdf.

³Vermont Vital Statistics, 2023.

Adult Trend of Cardiovascular Disease (CVD)

- The prevalence of CVD in Vermont has remained stable and statistically unchanged from 2014 through 2023.
- This includes 4% who have been diagnosed with coronary heart disease (CHD), 5% who have had a heart attack, and 3% who have had a stroke in 2023.
 - The rates of CHD, heart attack and stroke are similar to the previous year.
- Vermont adults in 2023 had statistically similar rates of CVD as U.S. adults overall (8% vs. 9%).

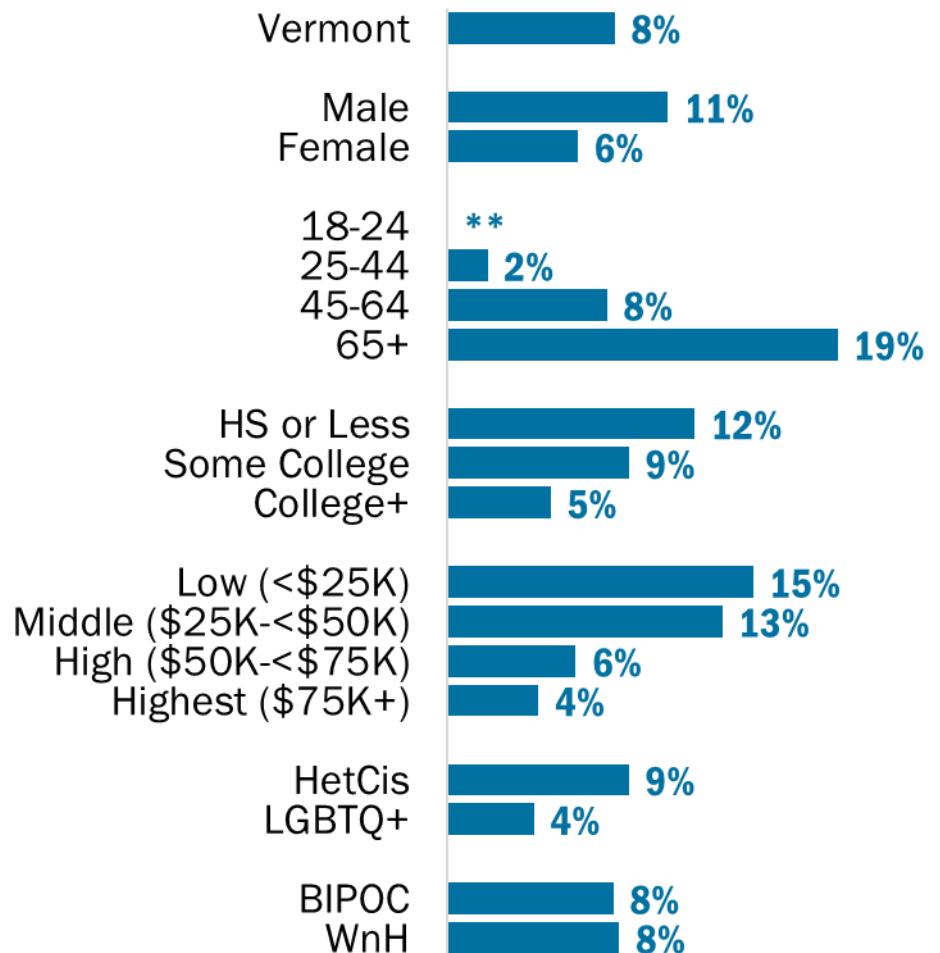


Source: VT BRFSS, 2014-2023.

CVD Demographics

- Around one in twelve (8%), or approximately 44,000 adult Vermonters, have ever been diagnosed with CVD.
- CVD is significantly more likely:
 - Among men.
 - With advancing age.
 - Among those with some college or less education compared to those with a college degree or higher.
 - Among those living in households with incomes less than \$50,000 a year, compared to those making \$50,000 or more.
 - Among heterosexual/cisgender adults.

Prevalence of CVD by Demographic Characteristics



Source: VT BRFSS, 2023.

**Value suppressed because sample size too small or relative standard error is > 30.

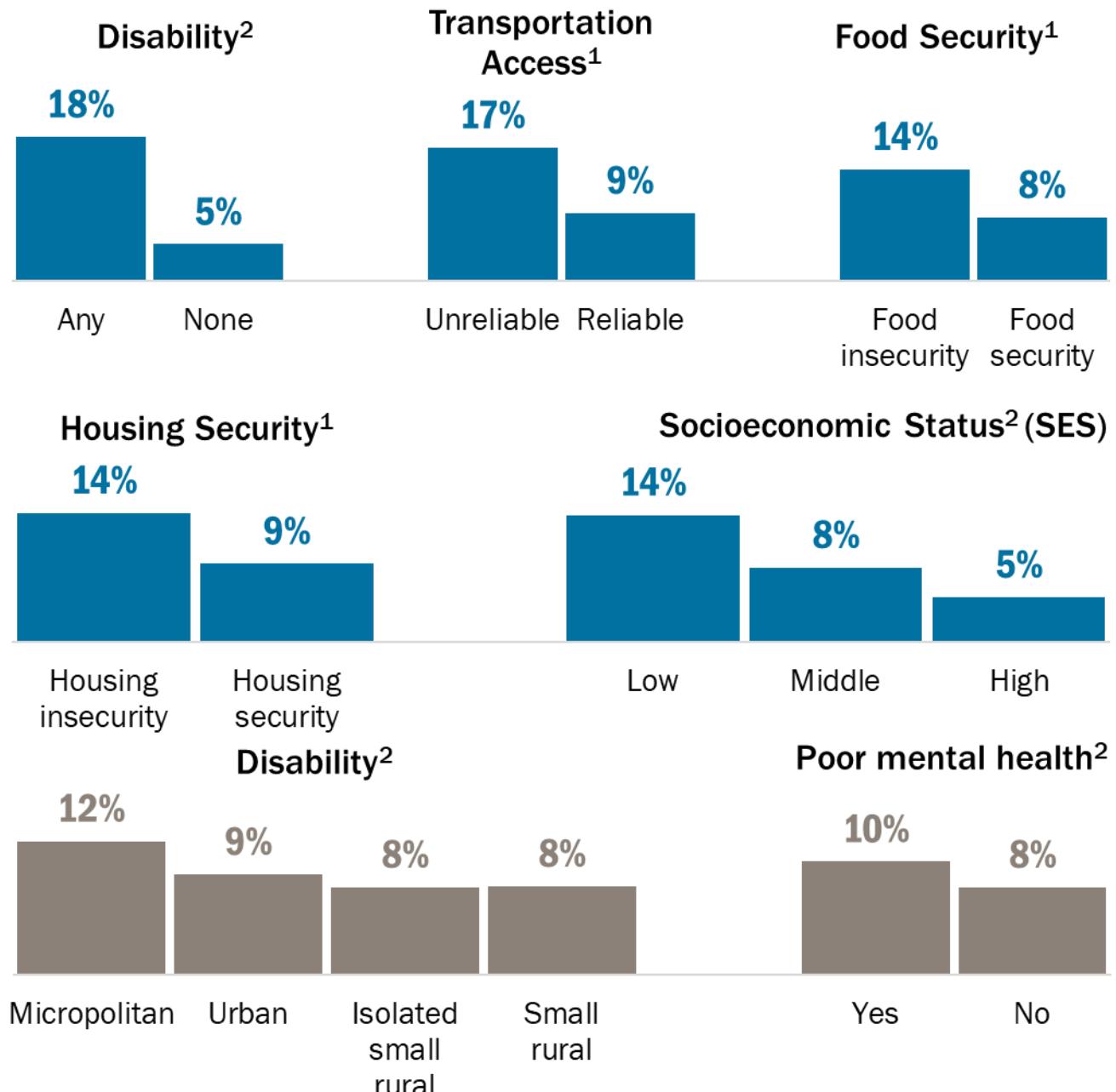
Health inequalities lead to varying rates of CVD.

CVD is significantly more likely among Vermont adults:

- With any disability.
- Without reliable transportation.
- Who experience food insecurity or housing insecurity.
- Living at a low SES compared to a middle SES and living at a middle SES compared to a high SES.

While other demographics show varying impacts of high cholesterol, these differences are **not statistically significant**.

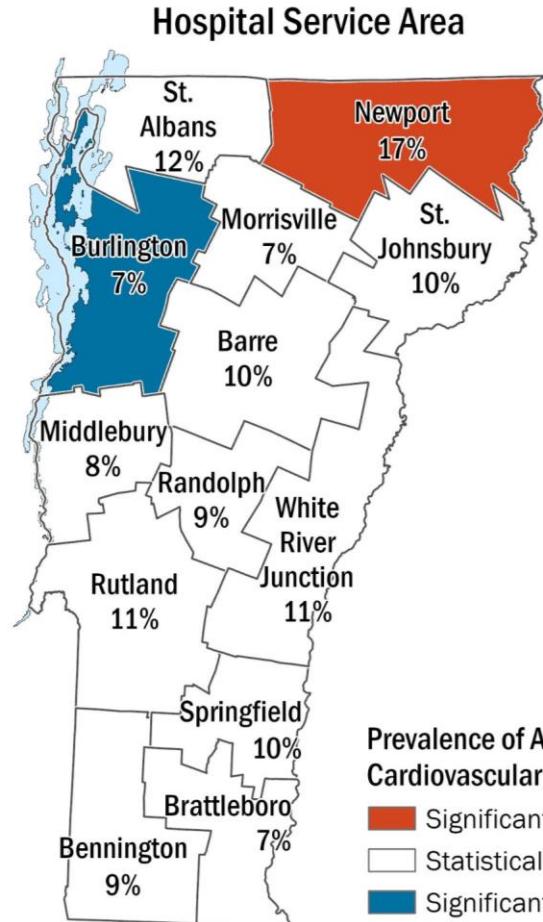
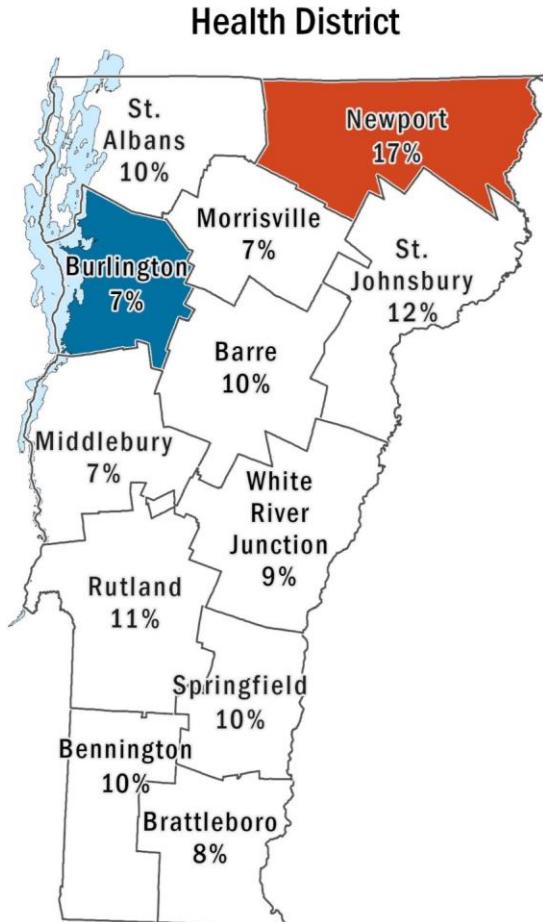
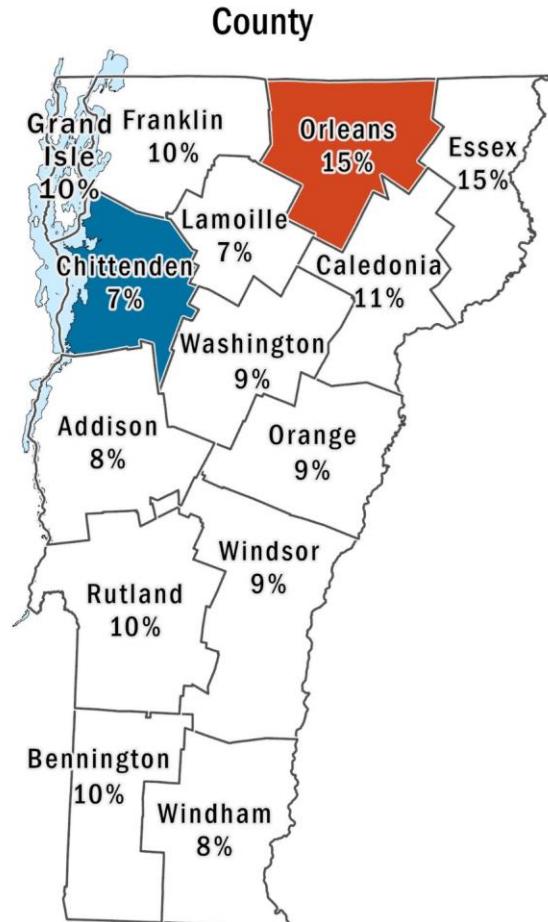
Source: VT BRFSS, 2022¹ & 2023².





Cardiovascular Disease by Subgeography

The rate of CVD is significantly higher than the state average in **Orleans County and the Newport Health District and Hospital Service Area (HSA)**. CVD prevalence is significantly lower than the state average in **Chittenden County and the Burlington Health District and HSA** when compared to the state average.



Prevalence of Adults with Cardiovascular Disease

- Significantly higher than Vermont
- Statistically similar to Vermont
- Significantly lower than Vermont

Source: VT BRFSS, 2022 & 2023.

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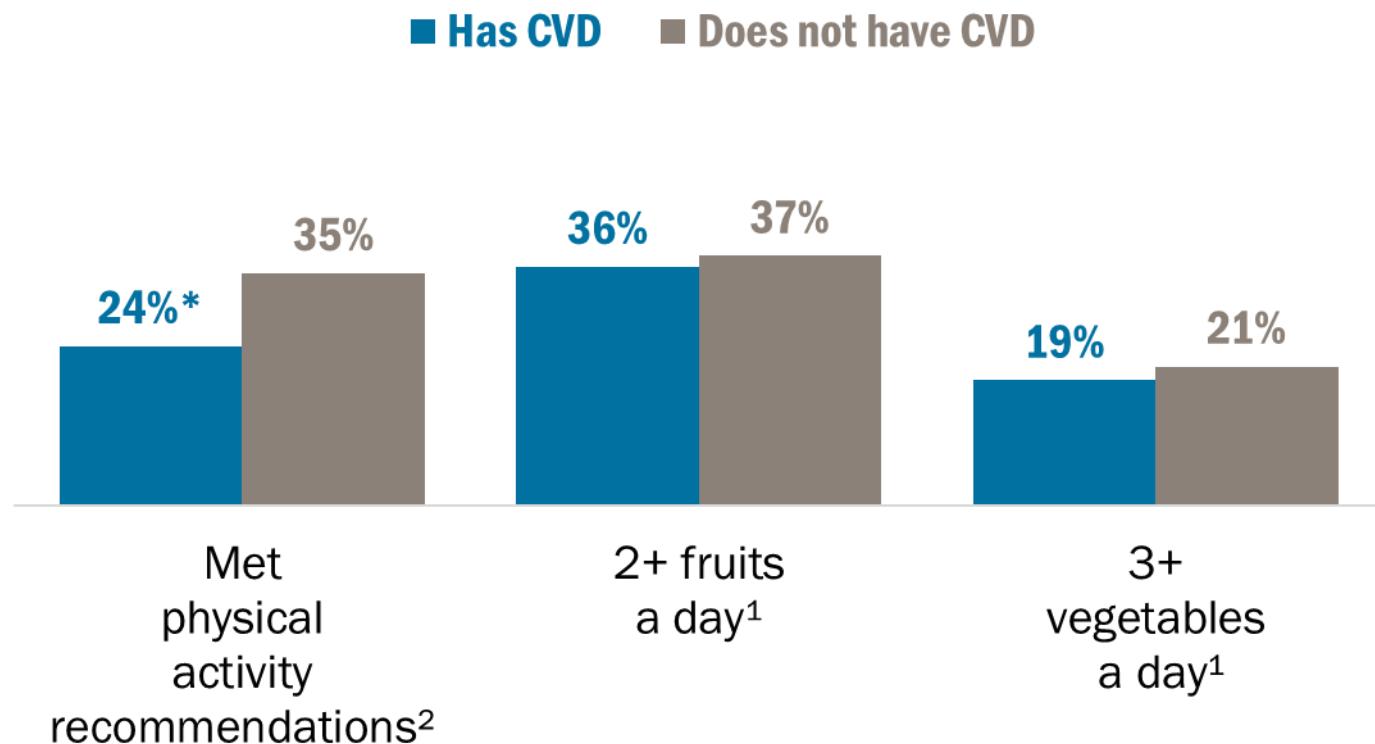
CVD Protective Factors

Actions or biological and community factors that are linked to a **lower** likelihood of developing or reducing disease are considered **protective** against disease.

Adults with CVD are significantly **less likely** to:

- Meet aerobic and strength building physical activity recommendations.

Behaviors that Protect Against Developing CVD



Source: VT BRFSS, 2021¹, & 2023².

*Statistically significant difference.

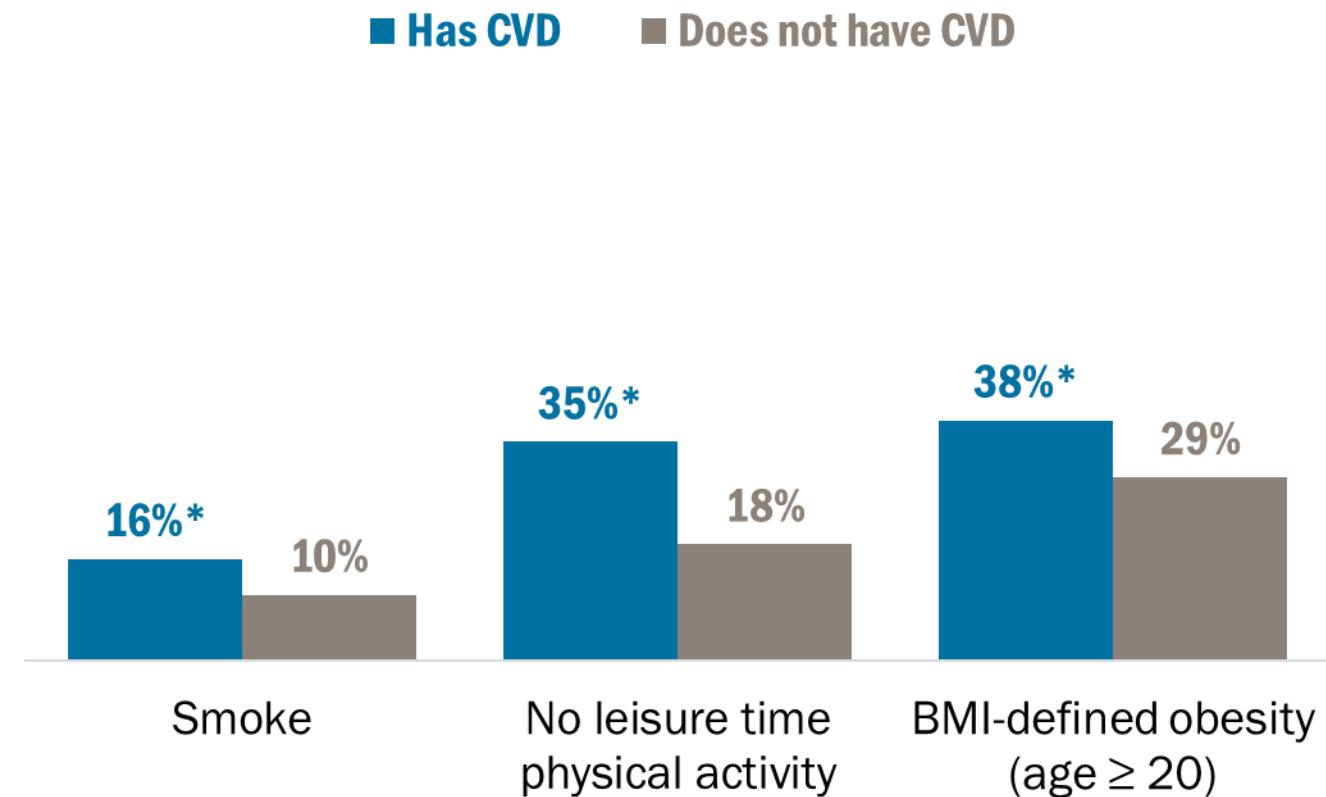
CVD Risk Factors

Actions or biological and community factors that are linked to a **higher** likelihood of developing or worsening disease are considered **risk factors** for disease.

Adults with CVD are significantly **more likely** to:

- Smoke,
- Engage in no leisure time physical activity in the last month, and
- Have a BMI classified as obese.

Risk Factors for Developing CVD



Source: VT BRFSS, 2023.

* Statistically significant difference.

BMI is a singular, indirect indicator of body fat. Though limited in sensitivity, it is intended to identify weight-related health risk. Though useful at a population level, BMI has limited usefulness at the individual level.

Cardiovascular Disease and Health Care Access

Vermont adults with cardiovascular disease:



Are more likely to have a personal doctor than those not diagnosed with CVD (95% vs. 91%).

Are statistically more likely to have visited a doctor for a routine checkup in the last year compared to those not diagnosed with CVD (88% vs. 76%).

Who have insurance are statistically more likely to be covered by public insurance* (79% vs. 45%) and statistically less likely to be covered by private insurance (21% vs. 55%) compared to those not diagnosed with CVD.

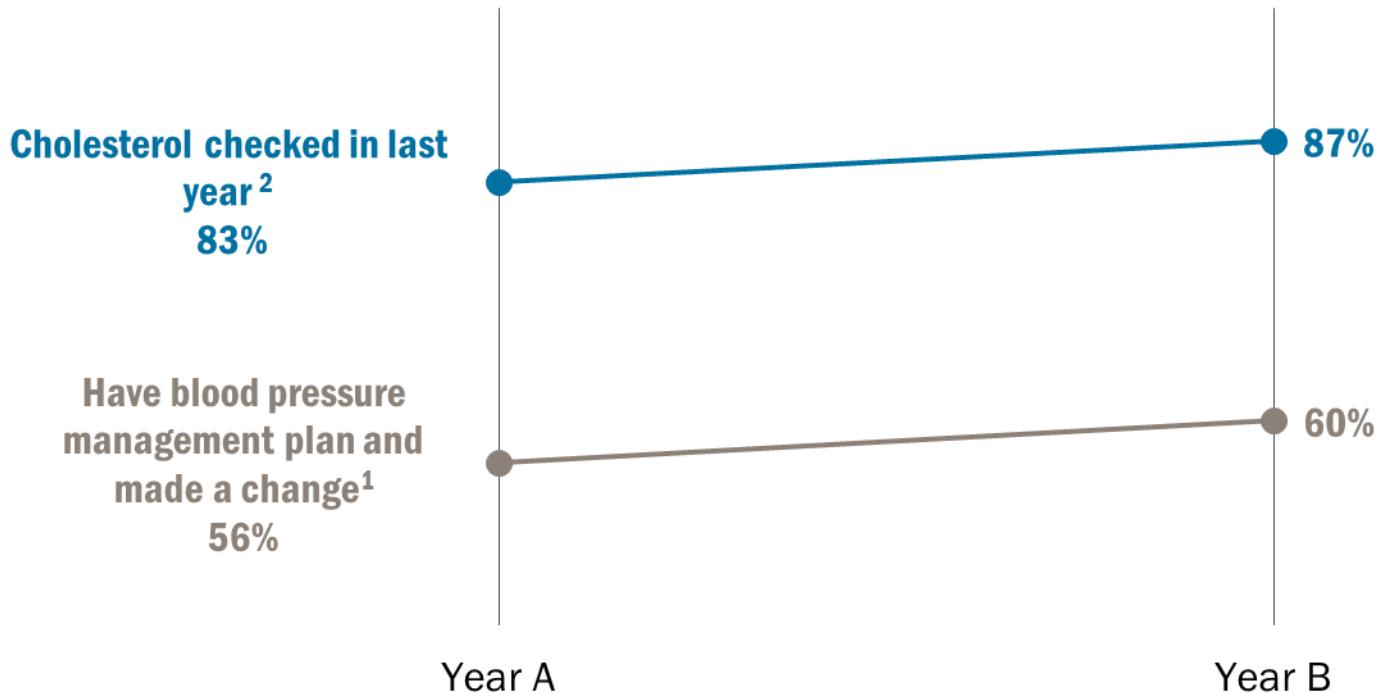
Source: VT BRFSS, 2023.

*Medicare: 56% vs. 24% - Medicaid 10% vs. 11% - Military/IHS/State sponsored/Government program 13% vs. 9%

Other Management Strategies for CVD

Among Vermont adults with CVD there has been an upward trend in recent years of those who have a blood pressure management plan and made a change because of it as well as those who have had their cholesterol checked in the last year.

- The rate of adults 18 and older with CVD who had their cholesterol checked in the last year trended upward from 2021 (56%) to 2023 (60%).
- Among adults with CVD, the proportion with a blood pressure management plan who have made lifestyle changes increased from 2020 (84%) to 2021 (89%).



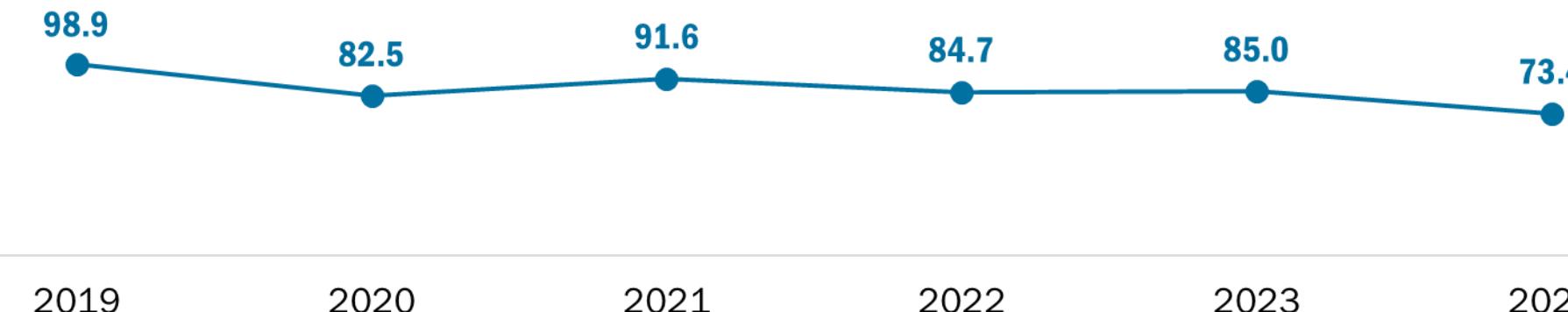
Source: VT BRFSS, 2020 & 2021¹, 2021 & 2023².

Differences between years shown are not statistically significant.

Primary Care Visits for Cardiovascular Disease (CVD)

- For every 1,000 insured Vermonters, 73.4 had a primary care visit related to CVD in 2024 (44,482 visits among 22,557 people).
- The rate of primary care visits for CVD among insured Vermonters in 2024 is significantly lower than in 2023, as well as in all other reported years. The rate of primary care visits changed significantly between 2019 and 2022. The decrease in the rate of primary care visits in 2020 is likely influenced by the decrease in health care-seeking behavior during the COVID-19 pandemic.
- On average, there were 2.0 primary care visits per insured person for CVD in 2024, somewhat similar but slightly lower than the 2023 average of 2.2 per person.

Rate of Primary Care Visits per 1,000 Insured Vermonters



Source: GMCB VHCURES, 2019-2024 – extract 3015 – extracted 10/1/25.

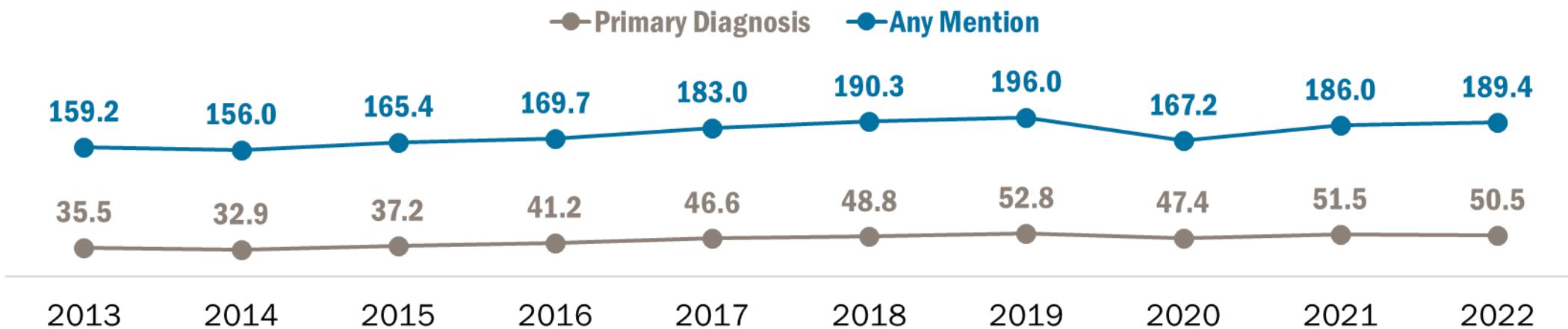
Statistical comparisons were performed using Z-scores.

CVD-Related Hospital Discharges

There were 50.5 hospital discharges with a **primary diagnosis** of CVD for every 10,000 Vermonters (3,270 discharges) in 2022. The trend of CVD as a primary diagnosis has risen significantly since 2016 but is statistically similar from 2017 through 2022.

In 2022, there were 189.4 discharges with **any mention** of CVD for every 10,000 Vermonters (12,254 visits). The rate of hospital discharges with any mention of CVD increased from 2013 through 2019, then dropped significantly in 2020. The drop in the rate of discharges with any mention of CVD in 2020 is likely due to decrease in health care seeking behavior during the COVID-19 pandemic. Rates started to rise again after 2020. Additional years of data are needed to better assess any possible upward trend.

Rate per 10,000 Vermonters



Source: GMCB Vermont Uniform Hospital Discharge Data System (VUHDDS), 2013-2022.

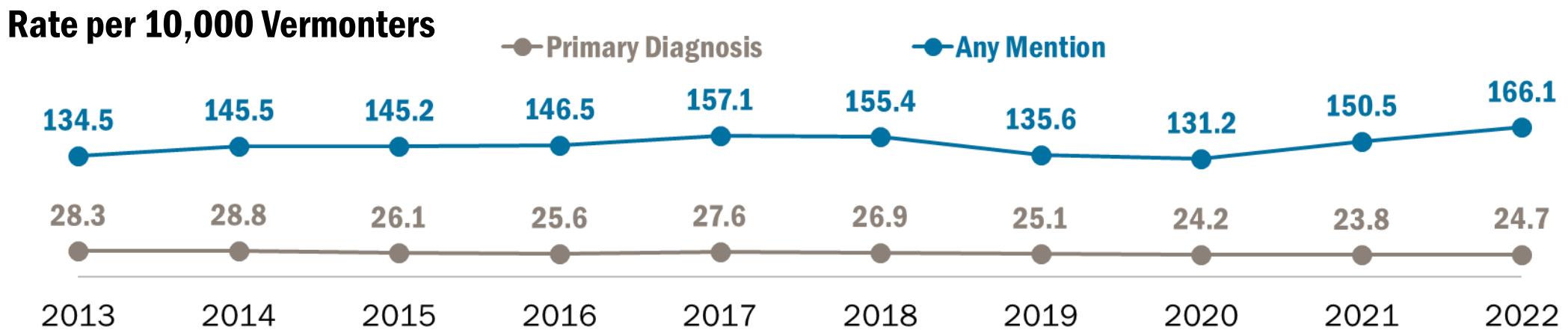
Data represent Vermonters seen at Vermont hospitals and does not include hospitalizations for care sought at an out-of-state facility.

Diagnosis coding was changed from using ICD-9-CM to ICD-10-CM in the 4th quarter of 2015 and may be the cause of changes seen in that year.

Cardiovascular Disease-Related Emergency Department (ED) Visits

There were 24.7 ED visits with a **primary diagnosis** of CVD for every 10,000 Vermonters (1,600 visits) in 2022. The rate of ED visits for CVD have been statistically unchanged since 2018.

In 2022, there were 166.1 ED visits with **any mention** of CVD per 10,000 Vermonters (10,746 visits). The rate of ED visits with any mention of CVD has been rising significantly since 2020, with the rate in 2022 significantly higher than all other reported years. This increasing trend may indicate poor condition management due to decreased health care seeking behaviors during the COVID-19 pandemic. Alternatively, COVID-19 is known to adversely impact the cardiovascular system and the increased rates seen from 2020 through 2022 may be linked to concurrent or prior COVID-19 disease.

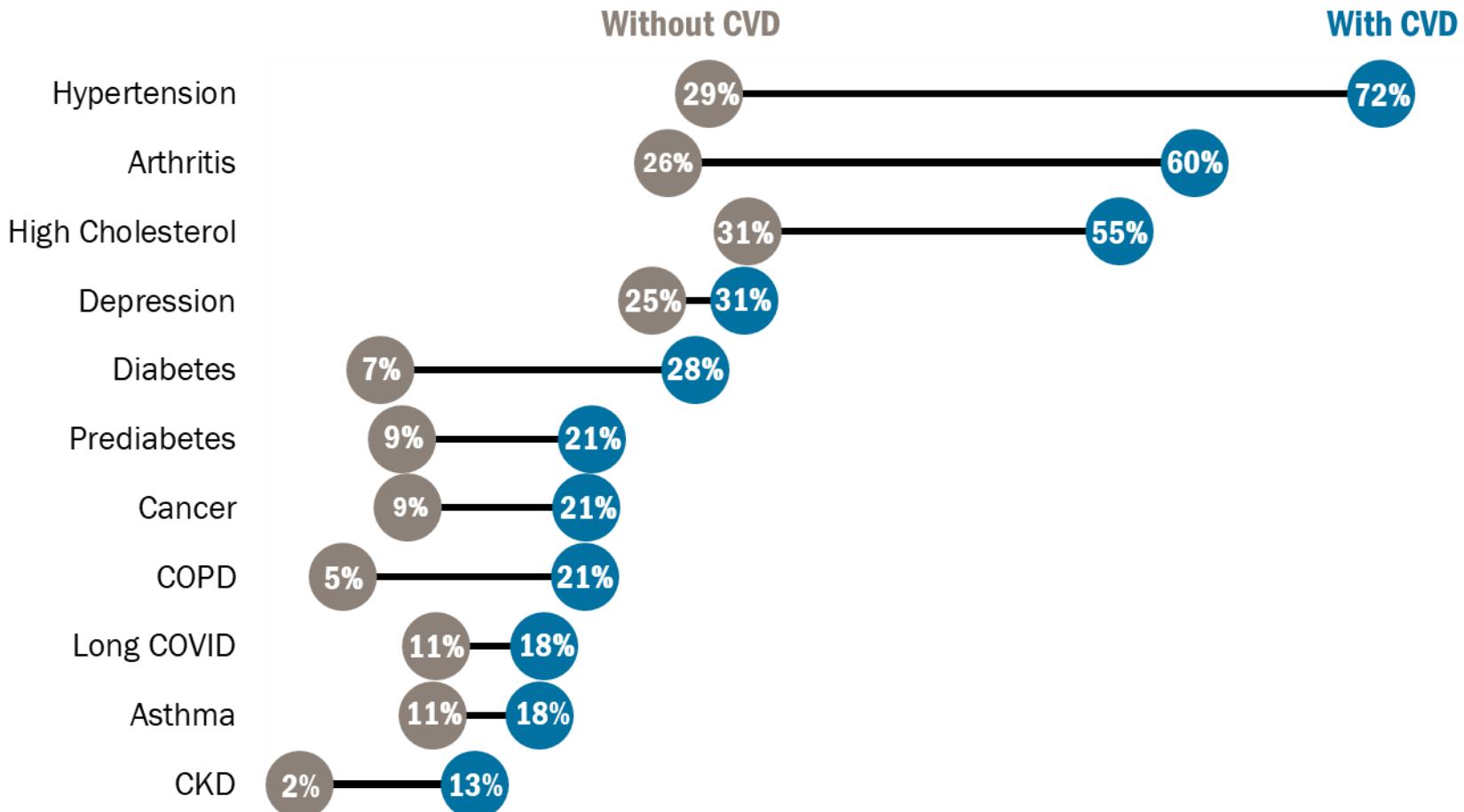


Source: Vermont Uniform Hospital Discharge Data Set (VUHDDS), 2013-2022.

Data represent Vermonters seen at Vermont hospitals and does not include ED visits for Vermont residents who sought care at a facility in a neighboring state. Diagnosis coding was changed from using ICD-9-CM to ICD-10-CM in the 4th quarter of 2015 and may be the cause of changes seen in that year.

CVD and Prevalence of Co-Occurring Chronic Disease

Adults with CVD are significantly more likely* to have a co-occurring chronic disease than those without CVD. Rates of depression do not differ significantly by CVD diagnosis.



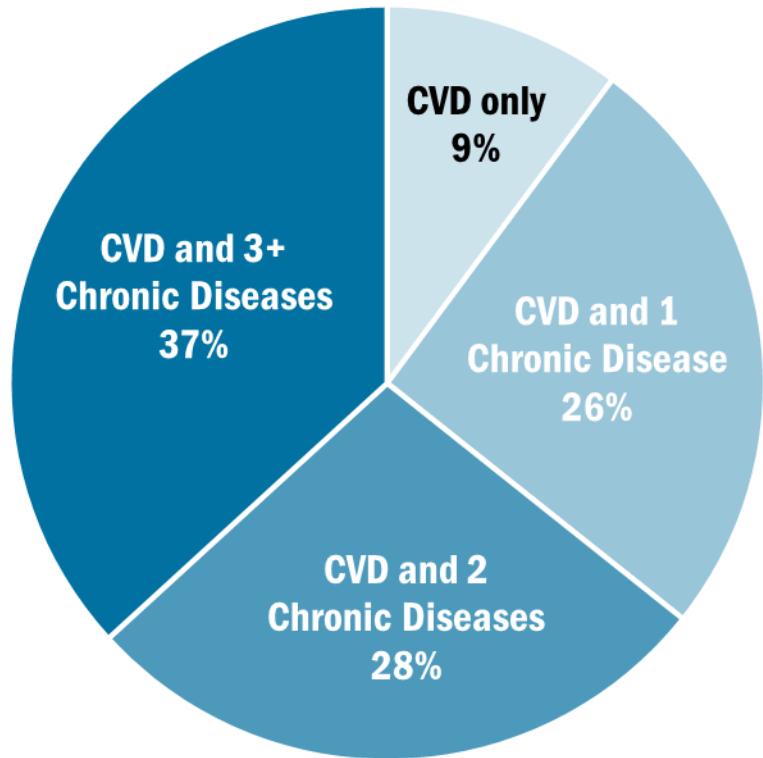
*All differences are statistically significant except for that between depression.

Source: VT BRFSS 2023.

~Excludes those whose form of cancer is skin cancer.

Multiple Chronic Diseases and Cardiovascular Disease

Nine in ten adults with CVD have at least one additional chronic disease, and more than one third (37%) have three or more. Adults with CVD are significantly more likely to have CVD plus three other chronic diseases, than they are to have CVD plus one other chronic disease.



Source: VT BRFSS, 2023.

Vermont Department of Health

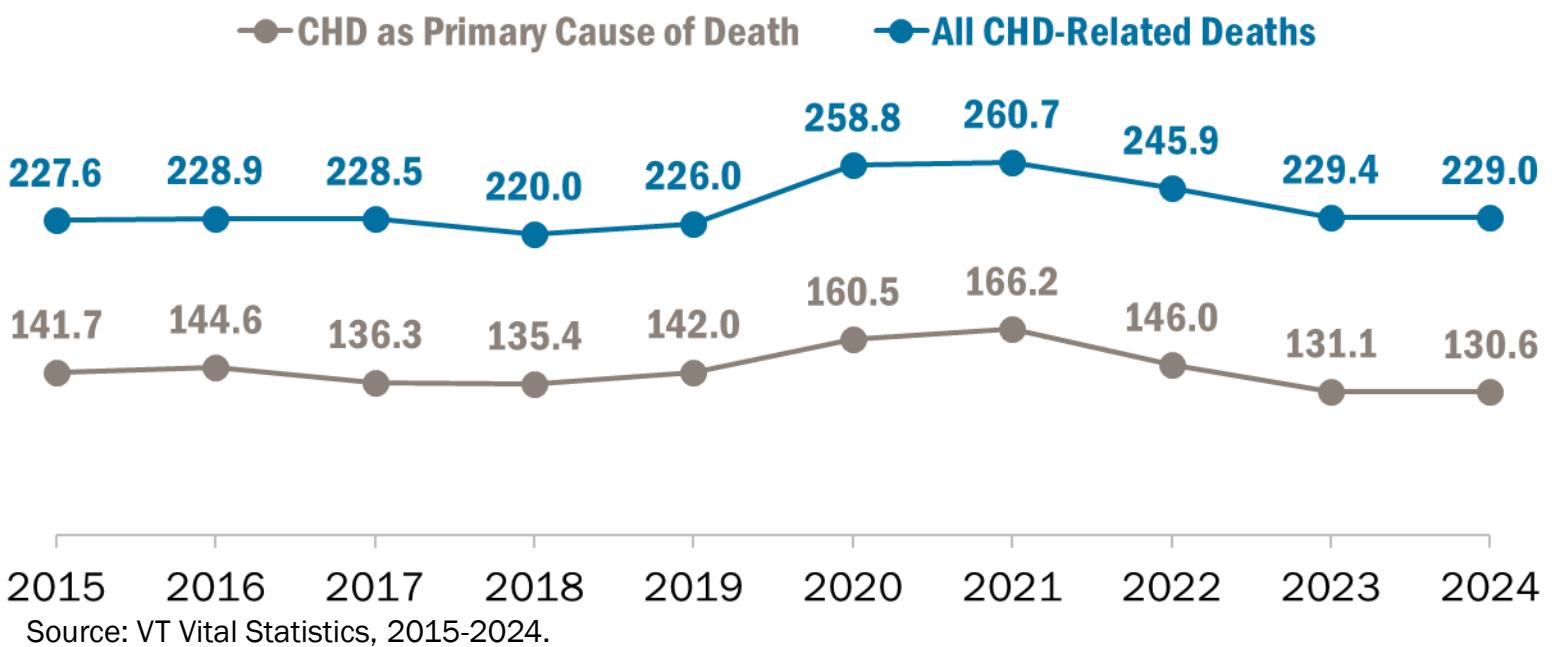
22

Coronary Heart Disease (CHD)-Related Mortality

- The rates of CHD as a primary cause of death are statistically similar in 2024, 2023, and 2015. However, the 2024 rate is statistically lower than in 2020 and 2021.
- The rate of Vermonters whose primary cause of death is CHD, is decreasing. The 2024 rate of CHD as a primary cause of death is 130.6 per 100,000, which is below the HV2030 target (145.5 per 100,000) as well as the 2020 baseline (160.5 per 100,000).
- The CHD-related mortality rate has decreased since 2022.
- All CHD-related deaths in 2024 are statistically similar to 2015 and 2023 but are significantly lower than 2020 and 2021.

All CHD-related deaths among Vermonters is significantly higher than CHD as the primary (principal) cause for death. This indicates that CHD is a contributing factor in many deaths.

CHD-Related Mortality Rate per 100,000 Vermonters



Source: VT Vital Statistics, 2015-2024.

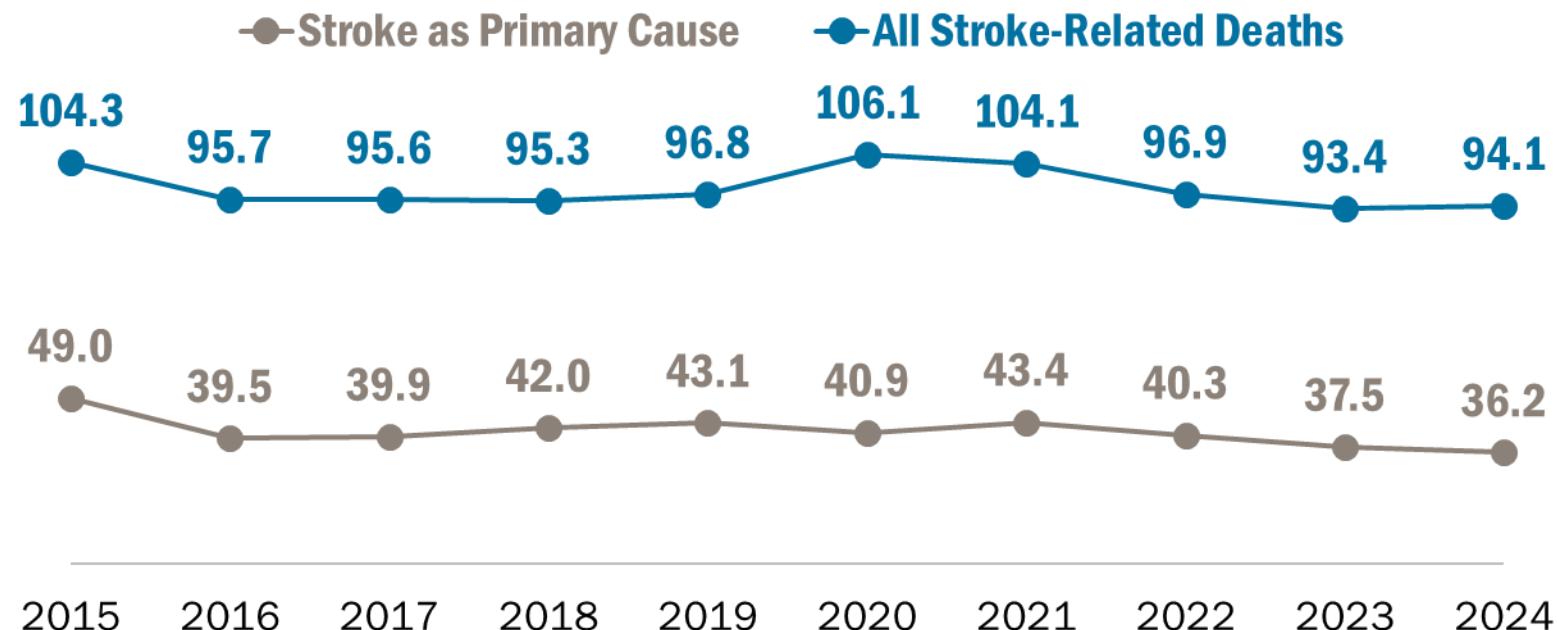
Data Note: A primary cause of death is the condition-specific diagnosis code(s) listed as the primary reason for death. A disease-related death is one for which the condition-specific diagnosis code(s) are listed in any of the twenty available causes of death.

Stroke-Related Mortality

- Stroke as a primary cause of death as well as all stroke-related deaths remained relatively stable and statistically unchanged from 2015 through 2022.
- As a primary cause of death, stroke mortality rates in 2023 and 2024 were significantly lower compared to 2015.
- In 2020, all-cause stroke death rates rose, but have continued to fall since. There were no statistically significant differences in all stroke-related deaths.

The **all-stroke-related** mortality rate among Vermonters is significantly higher than the rate of stroke as the primary (principal) cause for death. This indicates that stroke is a contributing factor in many deaths.

Stroke-Related Mortality Rate per 100,000 Vermonters



Source: VT Vital Statistics, 2015-2024.

Data Note: A primary cause of death is the condition-specific diagnosis code(s) listed as the primary reason for death. A disease-related death is one for which the condition-specific diagnosis code(s) are listed in any of the twenty available causes of death.

High Cholesterol

- Rates of high cholesterol among Vermonters
- Impact on Vermonters
- Risk factors that increase the chance of developing it
- Health care utilization of those who have it

About High Cholesterol (Hyperlipidemia)

- Cholesterol is a waxy substance in the blood that is used by the body to build cells. It is naturally produced by the liver and broken down from animal products, such as meats and full-fat dairy products, during digestion.
- The high saturated and trans fats found in those foods, and in oils like palm or coconut oil, can cause the liver to make more cholesterol than normal.
- Cholesterol comes in two forms, low-density lipoprotein (LDL) or **bad** cholesterol and high-density lipoprotein (HDL) or **good** cholesterol. Too much bad, or not enough good, cholesterol increases the risk that cholesterol will slowly build up on the inner walls of the arteries to the heart and brain. This is known as high cholesterol (also known as hyperlipidemia).
- Family history of high cholesterol and behaviors such as poor diet, lack of physical activity, smoking or being around people who smoke, and being overweight or obese can lead to high cholesterol.
- High cholesterol is a major risk factor for future health problems, including diabetes, heart disease and stroke.

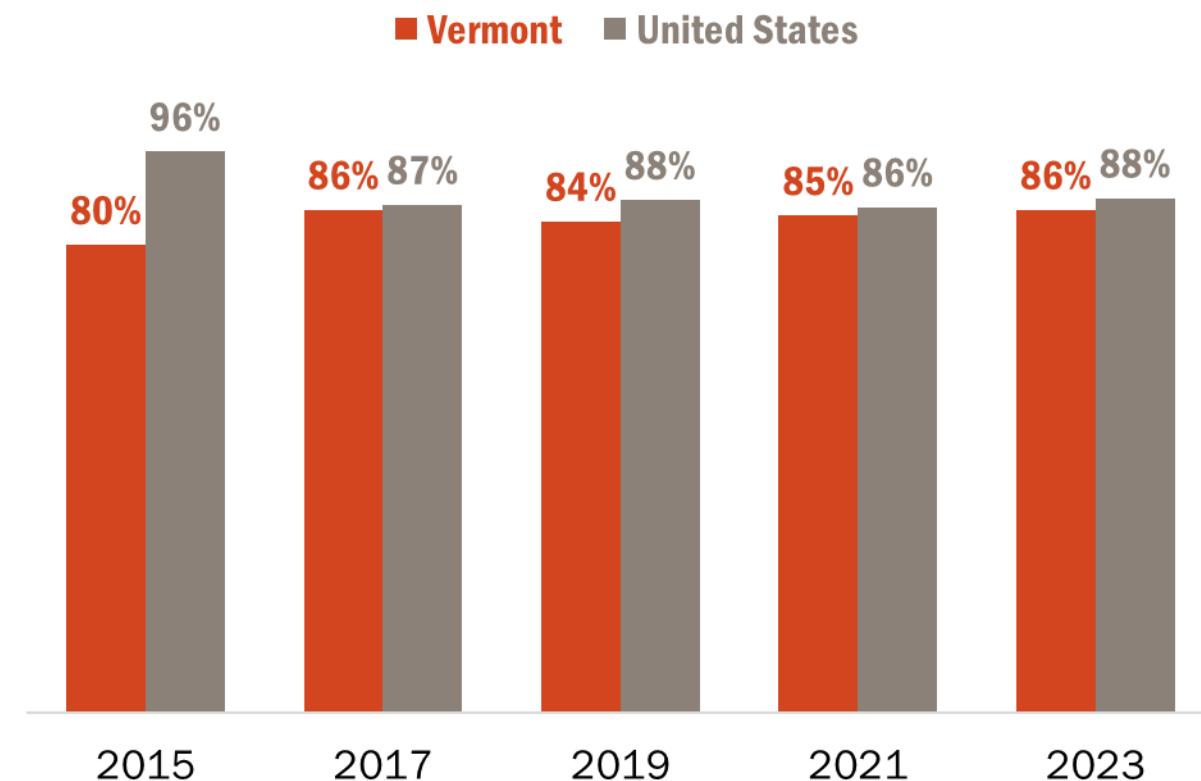
Source: American Heart Association, Cholesterol, 2017. <https://www.heart.org/en/health-topics/cholesterol>

Cholesterol Screening

- The prevalence of cholesterol screening among Vermont adults was statistically higher in 2023 compared to 2015.
- Cholesterol screening among Vermont adults has trended upward since 2019.
- In 2023, Vermont adults were statistically **less likely** to have had their cholesterol checked than U.S. adults overall.

Question methodology changed in 2017 and 2019. Caution should be used when comparing to previous years.

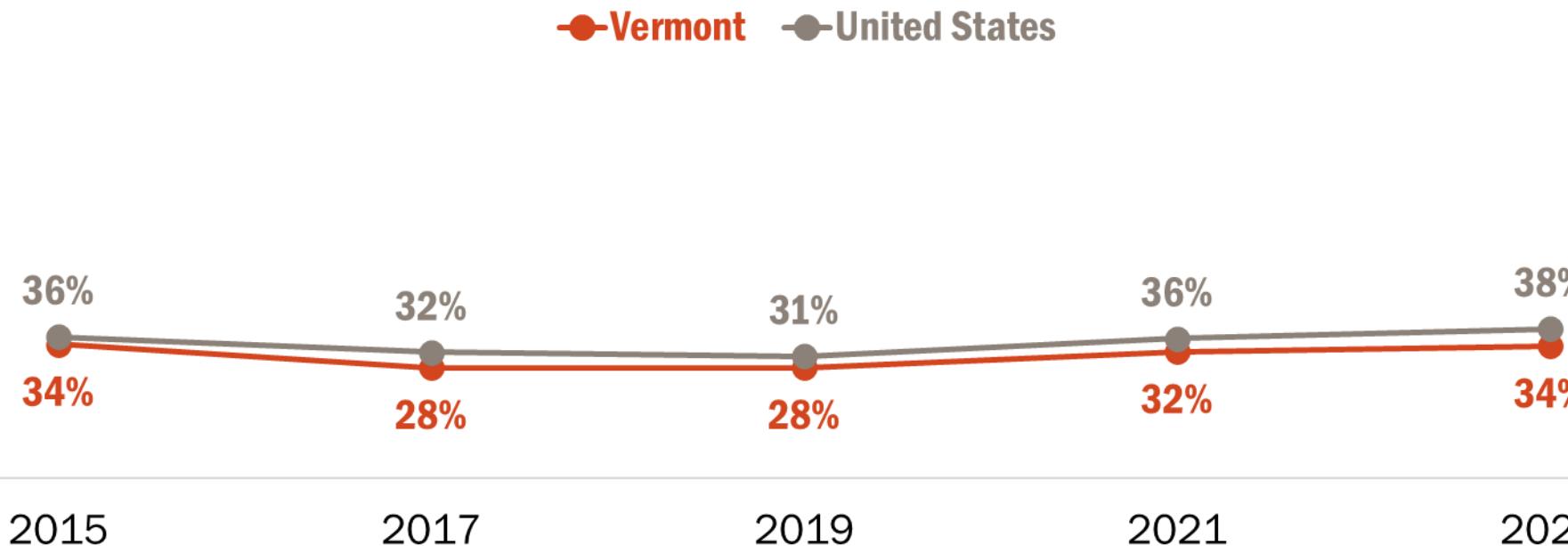
Prevalence of Adults with Cholesterol Screening within 5 Years



Source: VT BRFSS, 2015-2023.

Adult Trend of High Cholesterol

- The prevalence of high cholesterol among Vermont adults in 2023 is 34%. This rate is statistically similar to 2021 and statistically lower than 2017 and 2019.
- High cholesterol among Vermont adults in 2023 was significantly lower than that of U.S. adults overall.



Source: VT BRFSS, 2015-2023.

High Cholesterol Demographics

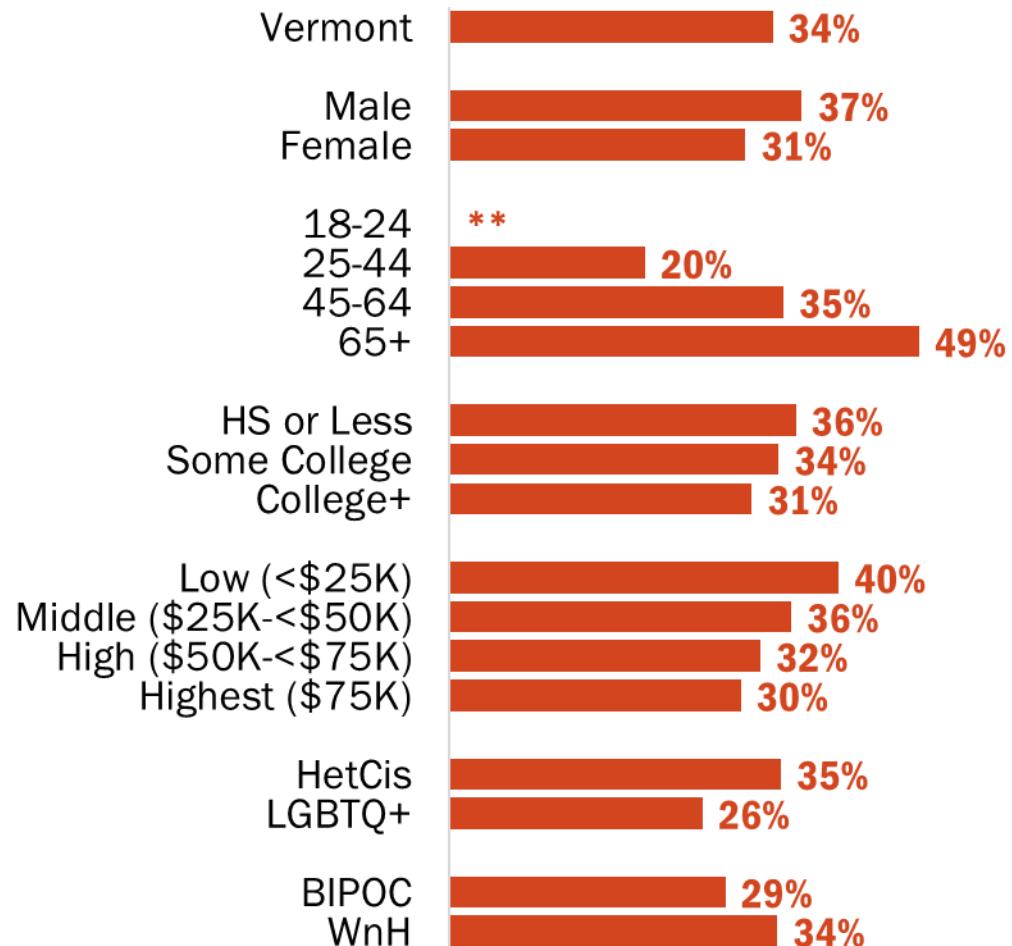
About one-third (34%) of Vermont adults report ever being told they have high cholesterol.

- This is likely an underestimate given that only 86% of adults have had their cholesterol checked in the last five years (see page 26).
- High cholesterol is significantly more likely to be seen:
 - Among men.
 - With advancing age.
 - Among those in households with incomes less than \$25,000 a year, compared to those making \$75,000 or more.
 - Among heterosexual cisgender adults.

Source: VT BRFSS, 2023.

**Value suppressed because sample size too small or relative standard error is > 30.

Prevalence of Diagnosed High Cholesterol by Demographics

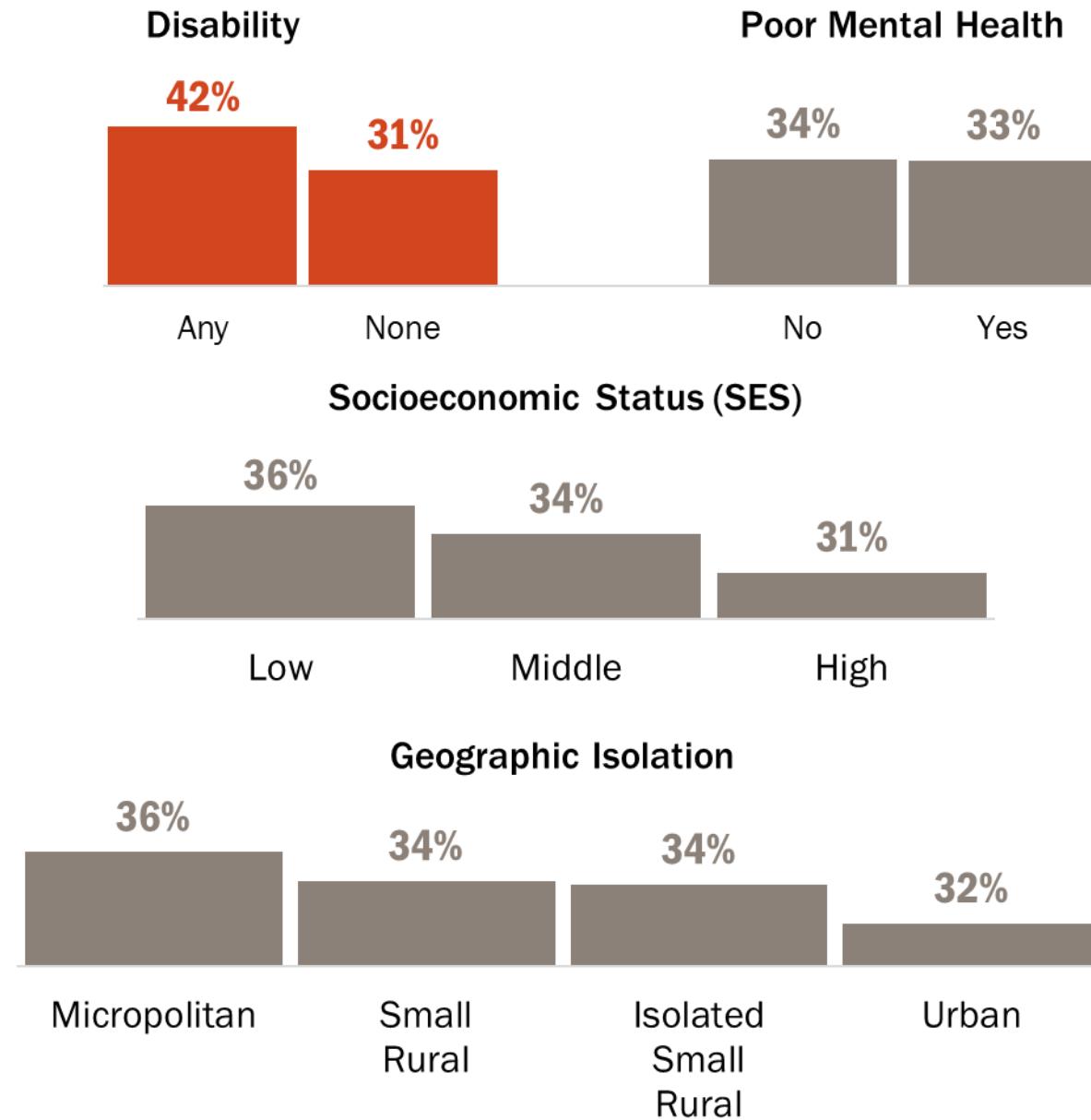


Health inequalities lead to varying rates of high cholesterol.

High cholesterol is significantly more likely among adults:

- With any disability.

While other demographics show varying impacts of high cholesterol, these differences are **not statistically significant**.

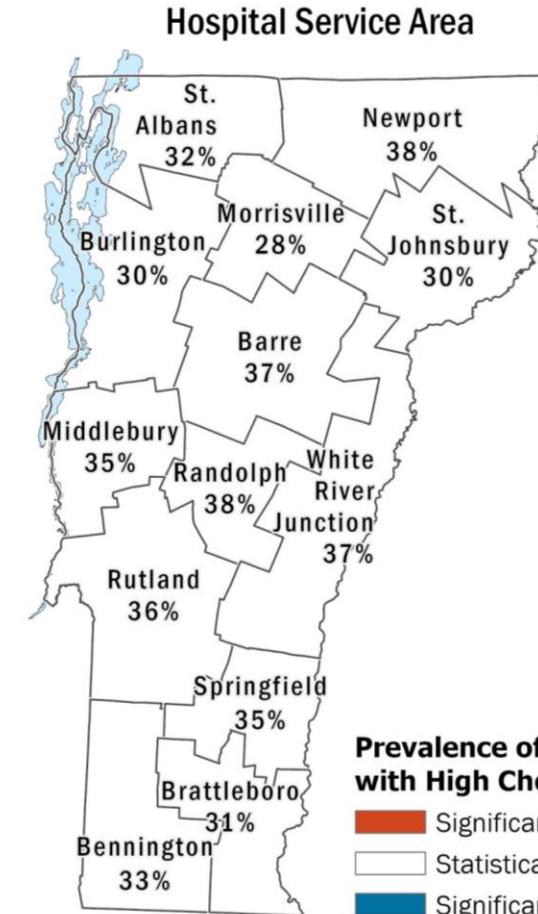
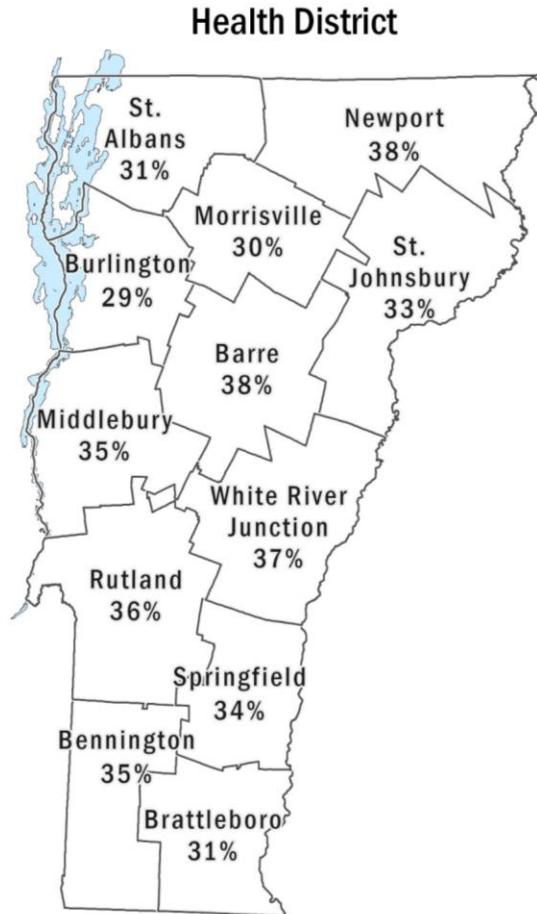
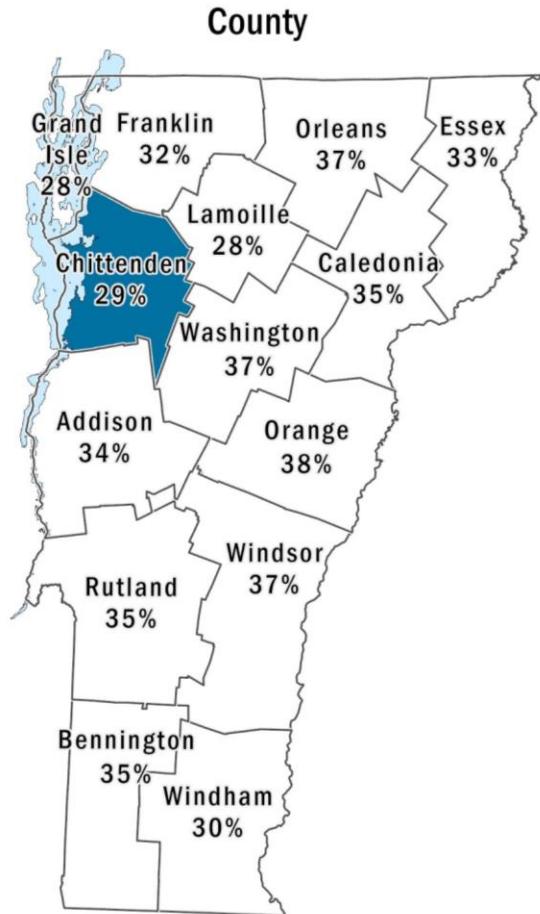


Source: VT BRFSS, 2023.



High Cholesterol by Subgeography

The prevalence of high cholesterol among Vermont adults is significantly lower in **Chittenden County** when compared to the state average.



Prevalence of Adults Diagnosed with High Cholesterol

- Significantly higher than Vermont
- Statistically similar to Vermont
- Significantly lower than Vermont

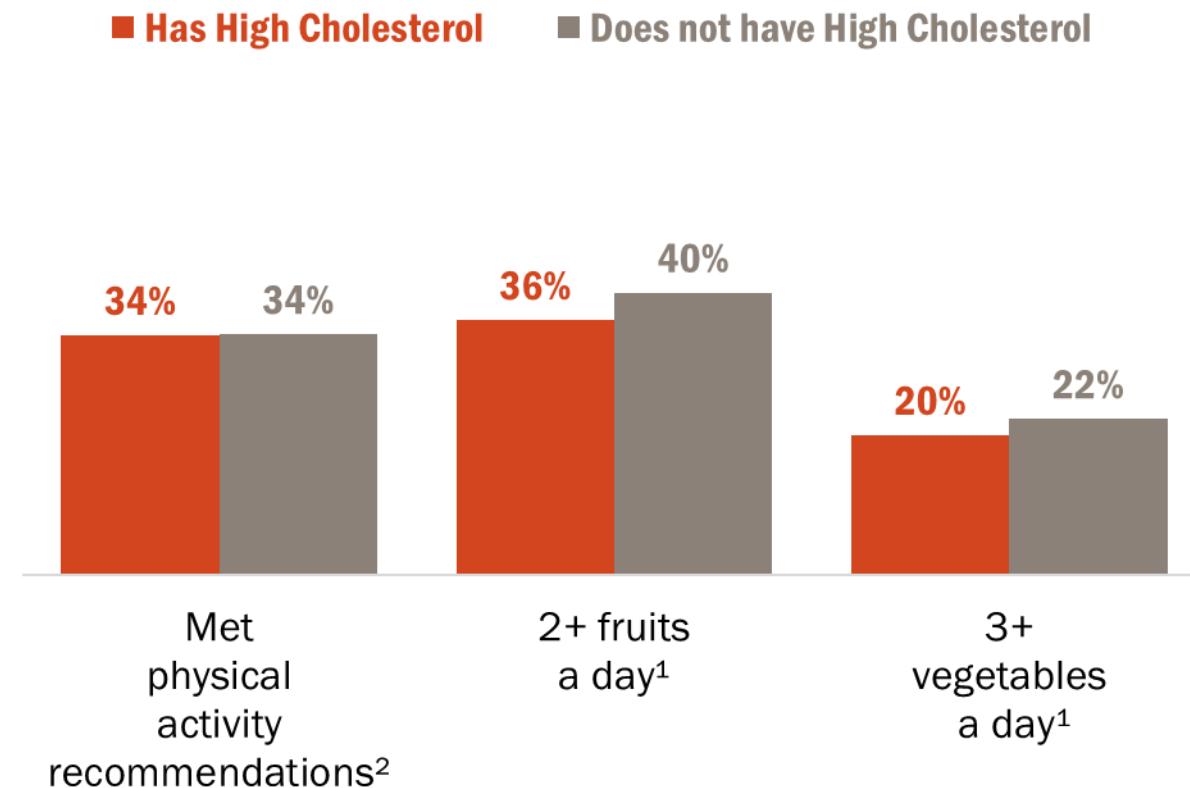
Source: VT BRFSS, 2021 & 2023.
Vermont Department of Health

High Cholesterol Protective Factors

Actions or biological and community factors that are linked to a **lower** likelihood of developing or reducing disease are considered **protective** against disease.

There are no statistically significant differences in the rates of protective factors by high cholesterol status.

Behaviors that Protect Against Developing High Cholesterol



Source: VT BRFSS, 2021¹, & 2023².

High Cholesterol Risk Factors

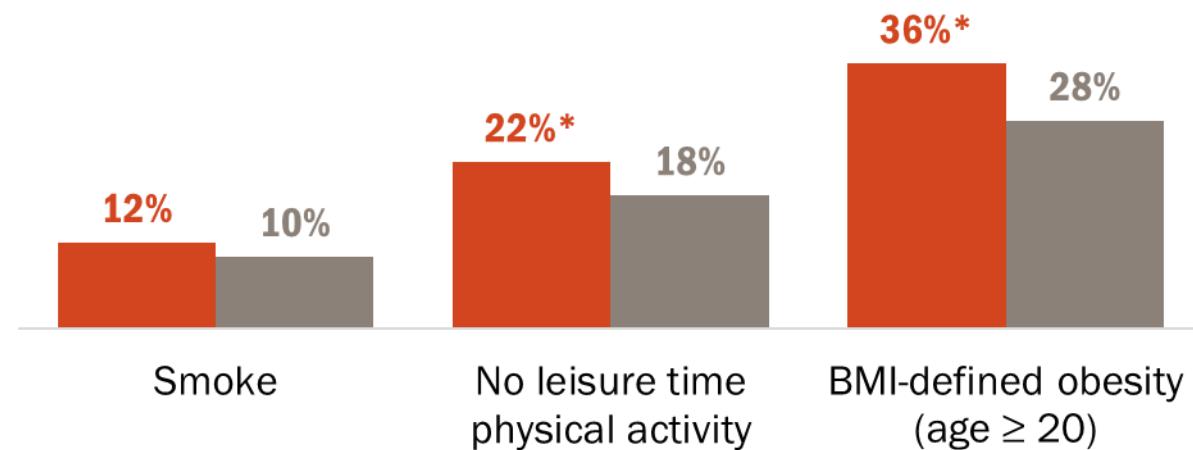
Actions or biological and community factors that are linked to a **higher** likelihood of developing or worsening disease are considered **risk factors** for disease.

Adults with high cholesterol are significantly **more likely** to:

- engage in no leisure time physical activity in the last month, and
- have a BMI classified as obese.

Risk Factors for Developing High Cholesterol

■ Has High Cholesterol ■ Does not have High Cholesterol



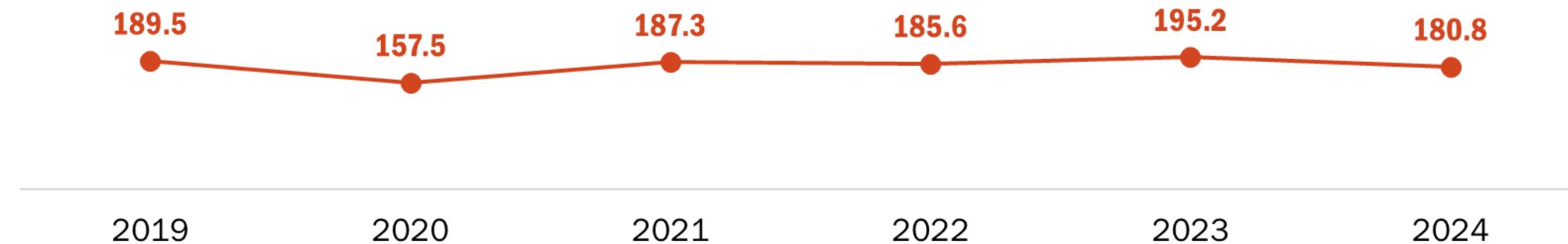
Source: VT BRFSS, 2023.

* Statistically significant difference.

Primary Care Visits for High Cholesterol

- For every 1,000 insured Vermonters, 180.8 had a primary care visit related to high cholesterol in 2024 (109,561 visits among 73,567 people).
- The rate of primary care visits for high cholesterol among insured Vermonters significantly decreased from 2023 to 2024. The rate of primary care visits changed significantly between 2019 and 2024. Though significantly higher than in 2020, the 2024 rate is still significantly lower than the pre-pandemic rate in 2019.
- On average, there were 1.5 primary care visits per insured person for high cholesterol in 2024. This is a slight decrease from an average of 1.6 visits per person seen annually from 2021 through 2023.

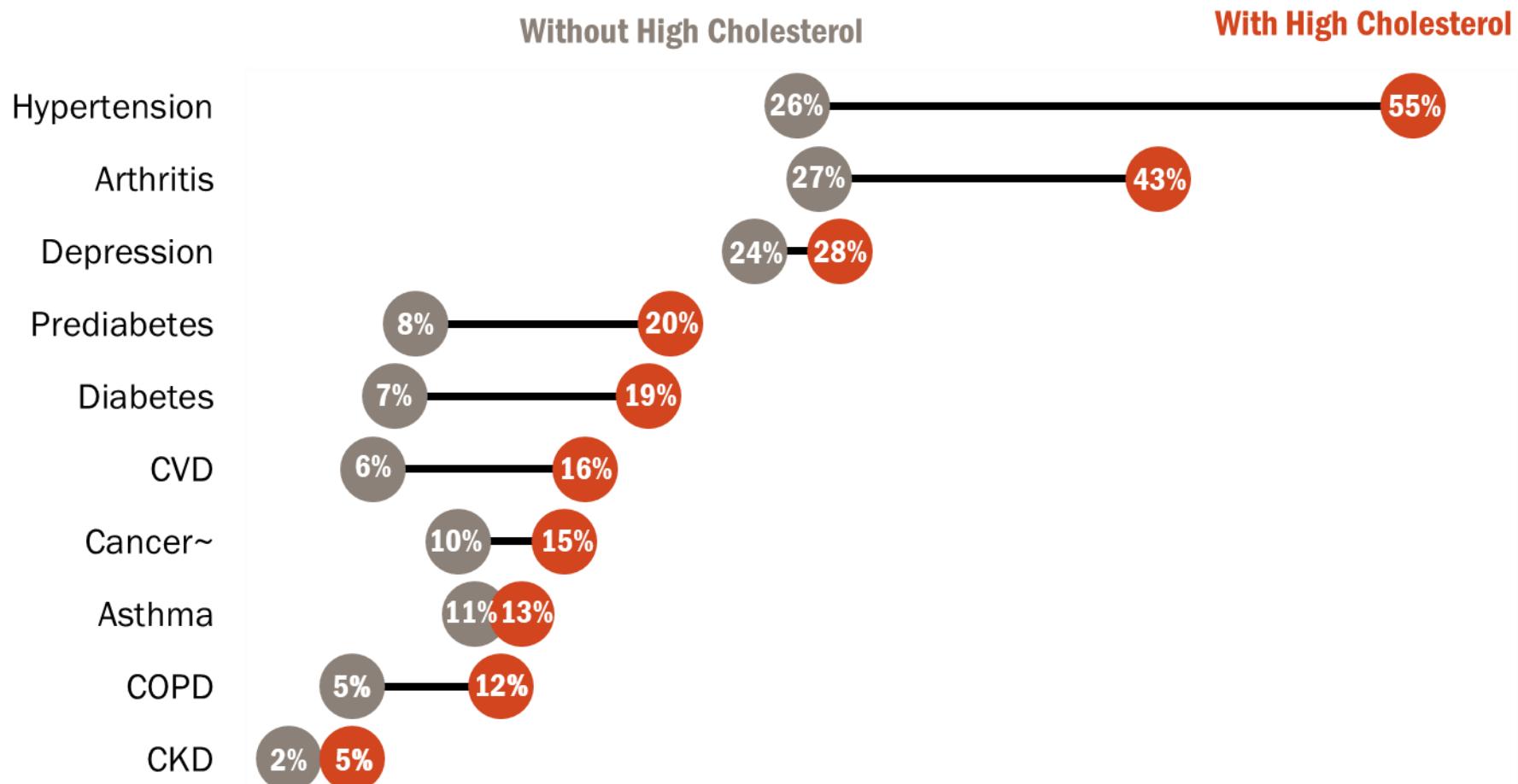
Rate of Primary Care Visits per 1,000 Insured Vermonters



Source: GMCB VHCURES, 2019-2023 – extract 3015 – extracted 10/22/25.
Statistical comparisons were performed using Z-scores.

High Cholesterol and Prevalence of Co-Occurring Chronic Disease

Adults **with high cholesterol** are significantly more likely* to have a co-occurring chronic disease than those without high cholesterol. Rates of asthma do not differ by high cholesterol diagnosis.



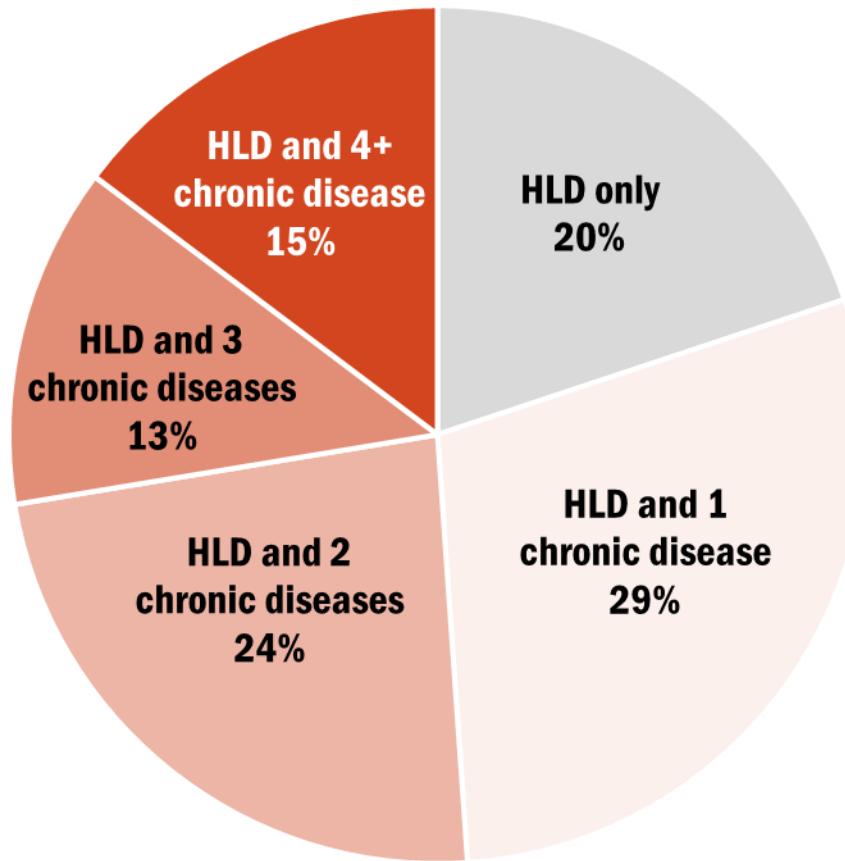
*All differences are statistically significant except for that between asthma.

Source: VT BRFSS, 2023.

~Excludes those whose form of cancer is skin cancer.

Multiple Chronic Diseases and High Cholesterol (HLD)

80% of adults with high cholesterol have at least one additional chronic disease.



Source: VT BRFSS, 2023.

Vermont Department of Health

Hypertension

- Impact of hypertension on Vermonters
- Risk factors that increase the chance of developing it and
- Management and health care utilization of those who have it

About Hypertension (High Blood Pressure)

- Blood pressure normally rises and falls throughout the day. If it remains high for a long time, it can cause damage to the blood vessels, decreasing the elasticity, as well as damage the heart.¹
- Hypertension raises the risk for heart disease and stroke, which are leading causes of death in the U.S.¹ and in Vermont.²
 - With age, blood vessels become less flexible and increase pressure throughout the circulatory system. This increases the risk of hypertension with advancing age.³
 - Hypertension contributes to several health complications, including high cholesterol, heart disease, heart failure, stroke and chronic kidney disease (CKD).¹
- **There are few or no symptoms of hypertension, and many people do not know they have it.¹**
- In November 2017, the American Heart Association and American College of Cardiology released [new guidelines](#) for hypertension diagnosis.⁴ The data presented here span the transition and may be influenced by the change as the new definition began to be adopted and routinely implemented by healthcare providers.

Source:

¹Centers for Disease Control and Prevention, High Blood Pressure, May 18, 2021.

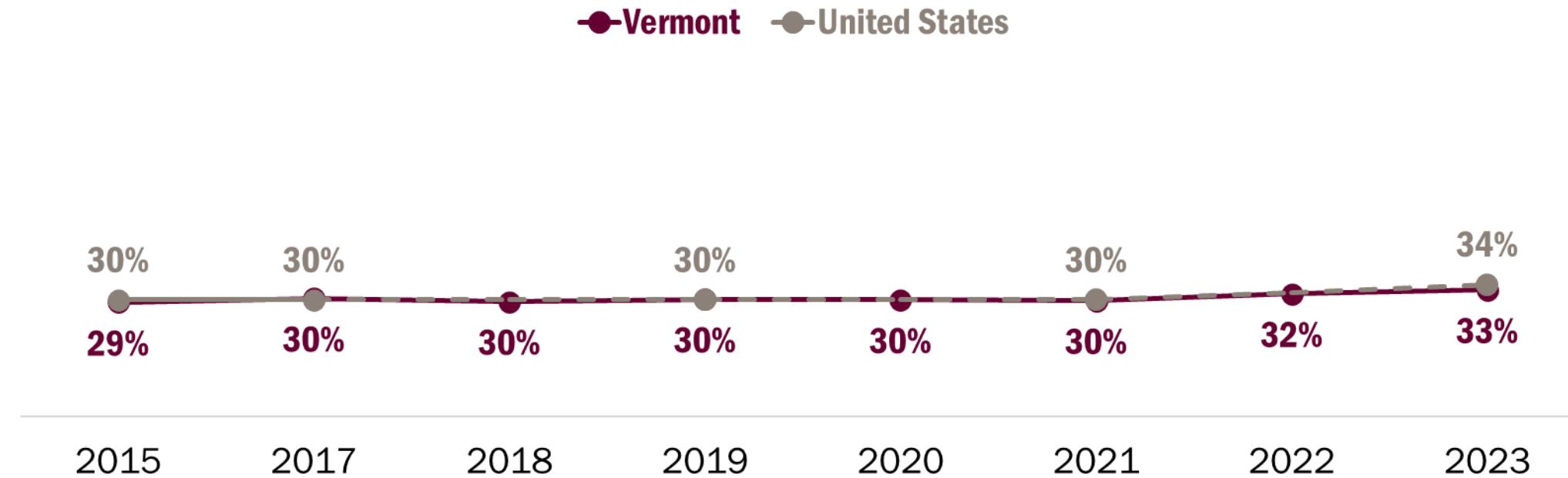
²Vermont Vital Statistics, 2019.

³American Heart Association, Understand Your Risk for High Blood Pressure, May 20, 2024. <https://www.heart.org/en/health-topics/high-blood-pressure/know-your-risk-factors-for-high-blood-pressure>.

⁴American College of Cardiology/American Heart Association, November 2017.

Adult Trend of Hypertension

- The prevalence of hypertension in Vermont in 2023 is statistically similar to 2022 and though significantly higher than 2015.
- The prevalence of hypertension among Vermont adults in 2023 (33%) is statistically lower than the 34% of U.S. adults overall who have hypertension.



Source: VT BRFSS, 2015-2023.

Dashed line indicates no U.S. data available for 2018, 2020, and 2022.

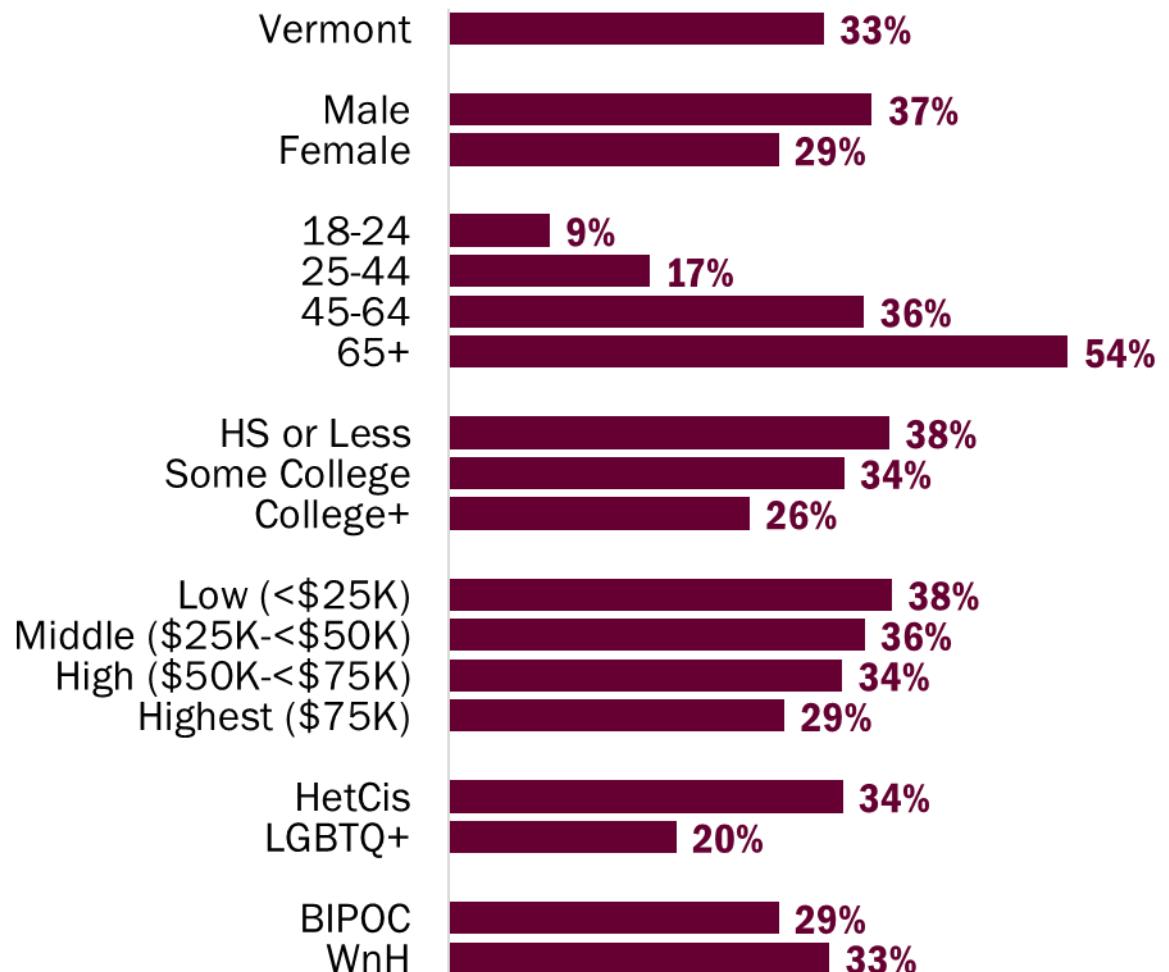
Hypertension Demographics

A third (33%) of Vermont adults have ever been diagnosed with hypertension.

Hypertension is significantly more likely:

- Among men.
- With advancing age (all differences in age group are statistically significant).
- Those with some college or less education.
- Those in households with incomes less than \$50,000 a year, compared to those making \$75,000 or more.
- Heterosexual cisgender adults.

Prevalence of Hypertension by Demographic Characteristics



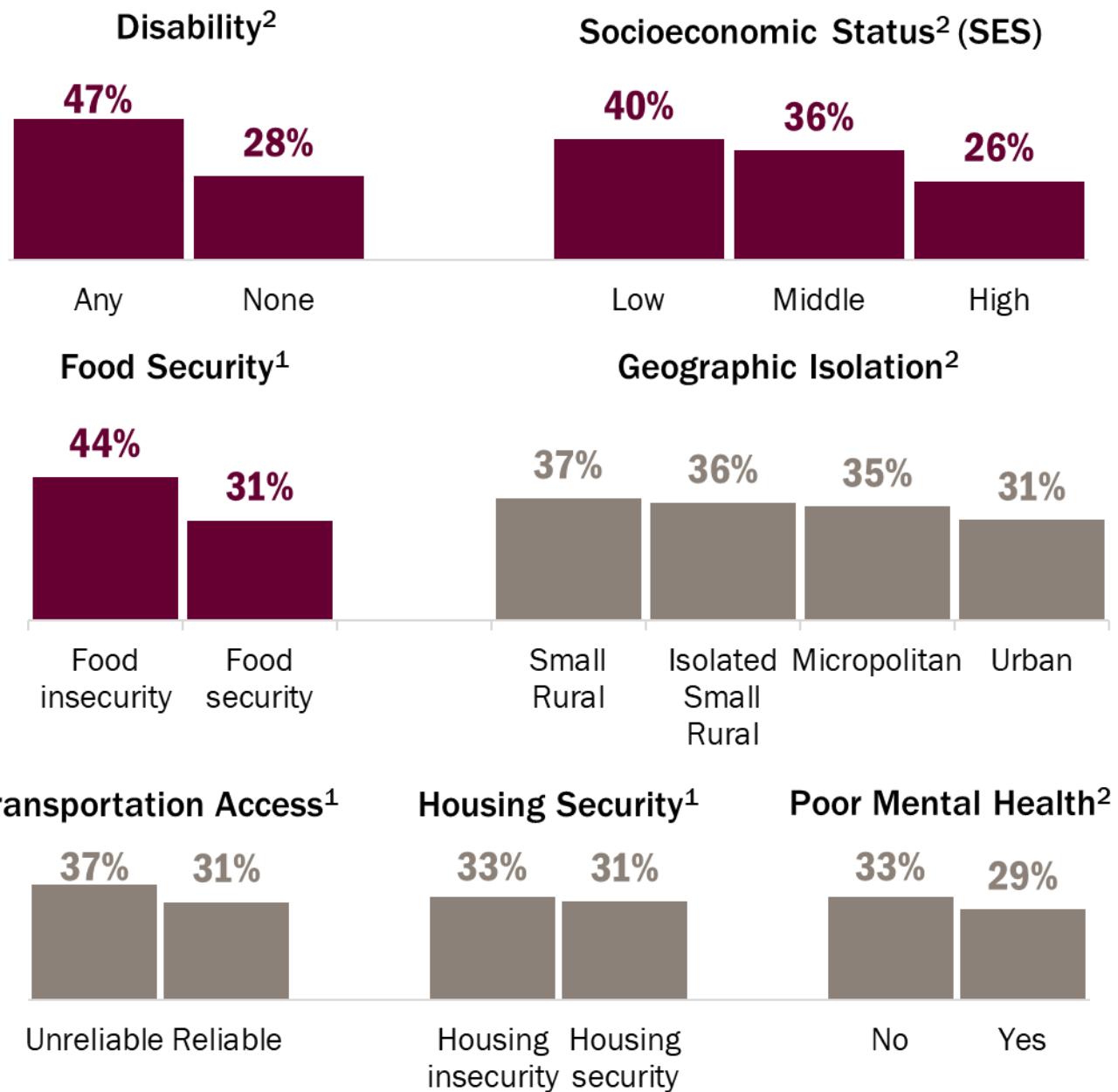
Source: VT BRFSS, 2023.

Health inequalities lead to varying impacts of hypertension.

Hypertension is significantly more likely among adults:

- With any disability,
- Living at a low or middle SES compared to a high SES, and
- Who experience food insecurity.

While other demographics show varying impacts of high cholesterol, these differences are **not statistically significant**.

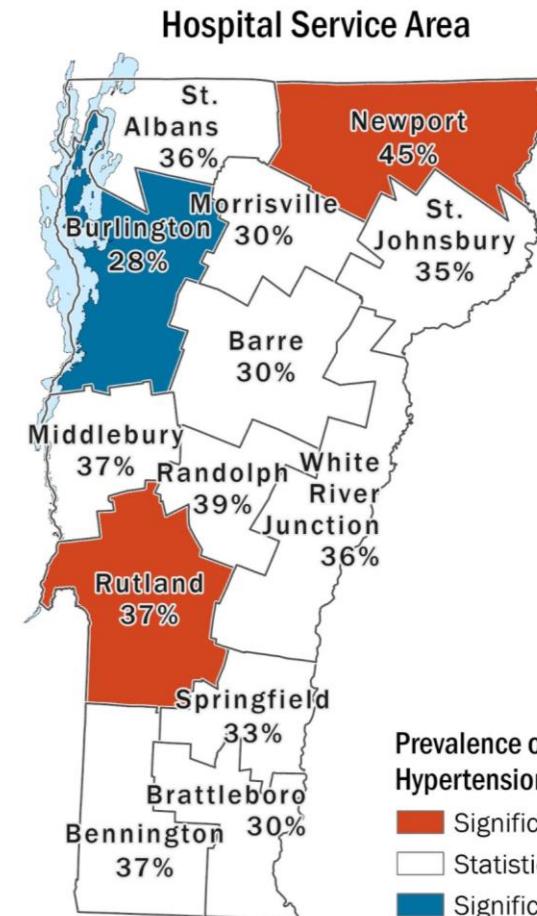
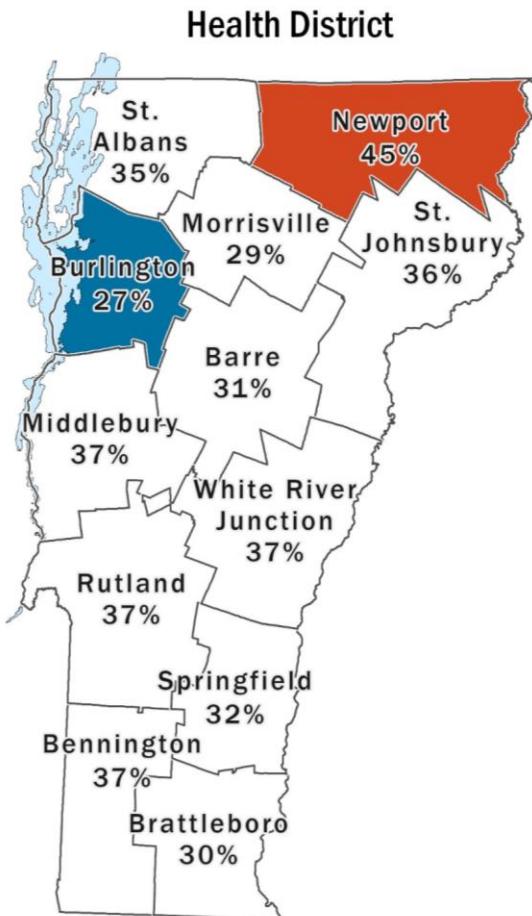
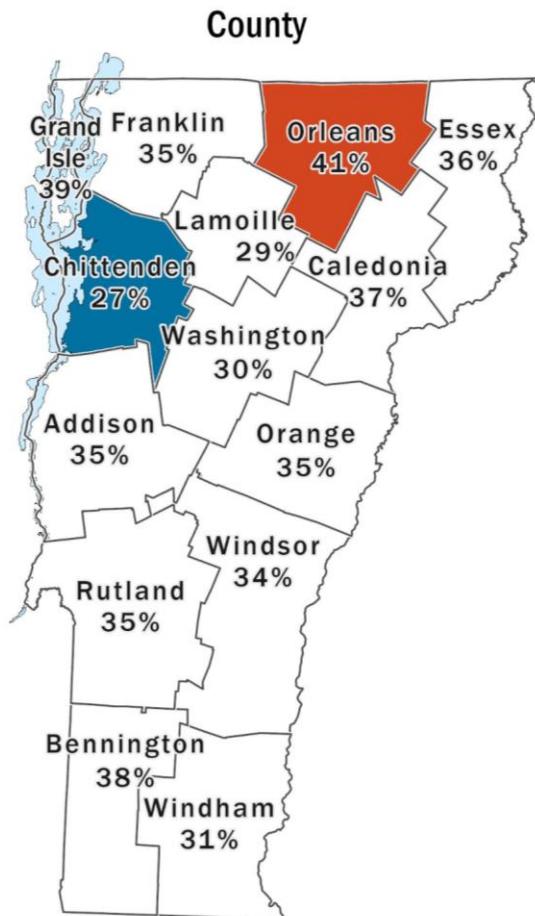


Source: VT BRFSS , 2022¹ & 2023².



Hypertension by Subgeography

The prevalence of hypertension among Vermont adults is significantly higher in **Orleans County and the Newport Health District and Newport and Rutland Hospital Service Areas (HSAs)** when compared to the state average. The prevalence is significantly lower than the state average in **Chittenden County and the Burlington Health District and HSA**.



Prevalence of Adults Diagnosed with Hypertension

- Significantly higher than Vermont
- Statistically similar to Vermont
- Significantly lower than Vermont

Source: VT BRFSS, 2022 & 2023.
Vermont Department of Health

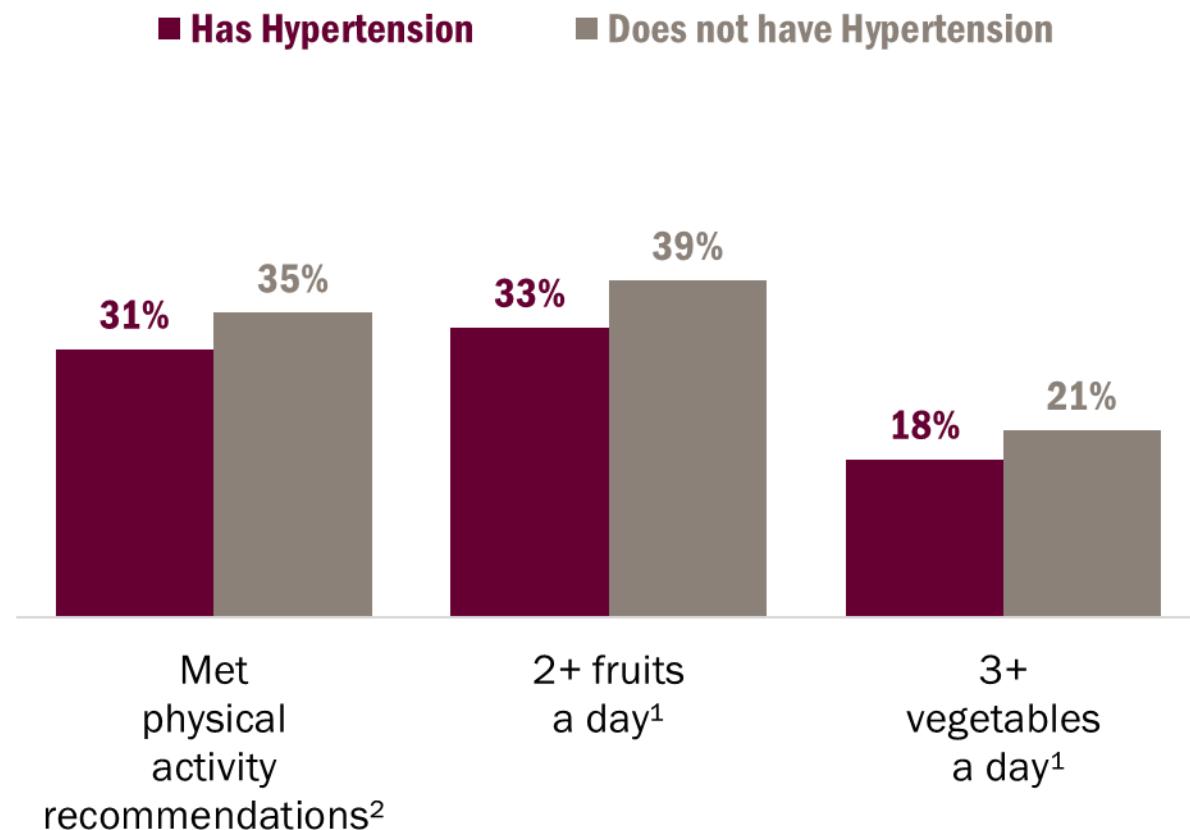
Hypertension Protective Factors

Actions or biological and community factors that are linked to a **lower** likelihood of developing or reducing disease are considered **protective** against disease.

Adults with hypertension are significantly **less likely** to:

- Consume 2+ fruits a day.

Behaviors that Protect Against Developing Hypertension



Source: VT BRFSS, 2021¹, & 2023².

*Statistically significant difference.

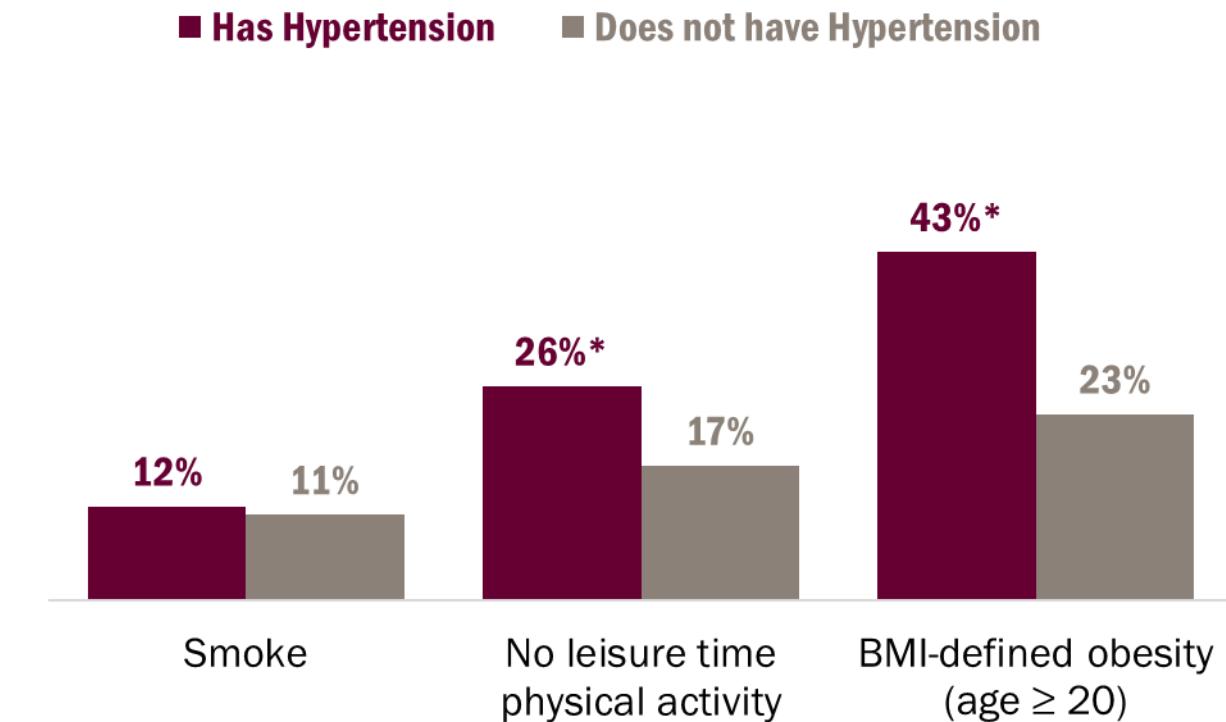
Hypertension Risk Factors

Actions or biological and community factors that are linked to a **higher** likelihood of developing or worsening disease are considered **risk factors** for disease.

Adults with hypertension are significantly **more likely** to:

- Engage in no leisure time physical activity in the last month, and
- Have a BMI classified as obese.

Risk Factors for Developing Hypertension

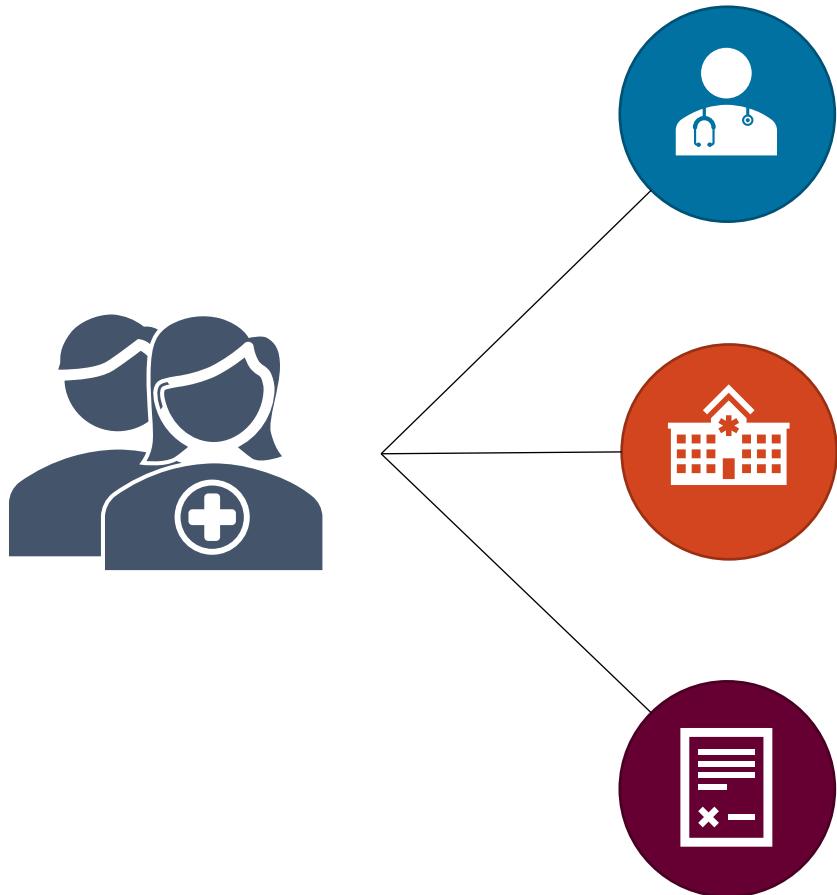


Source: VT BRFSS, 2023.

*Statistically significant difference.

Hypertension and Health Care Access

Vermont adults with hypertension are:



Significantly more likely to have a personal doctor than those not diagnosed with hypertension (96% vs. 89%).

Significantly more likely to have visited a doctor for a routine check up in the last year compared to those not diagnosed with hypertension (89% vs. 72%).

Significantly more likely to be covered by public insurance* (59% vs. 40%) while significantly fewer are covered by private insurance (39% vs. 59%) compared to those not diagnosed with hypertension.

Source: VT BRFSS, 2023.

Vermont Department of Health

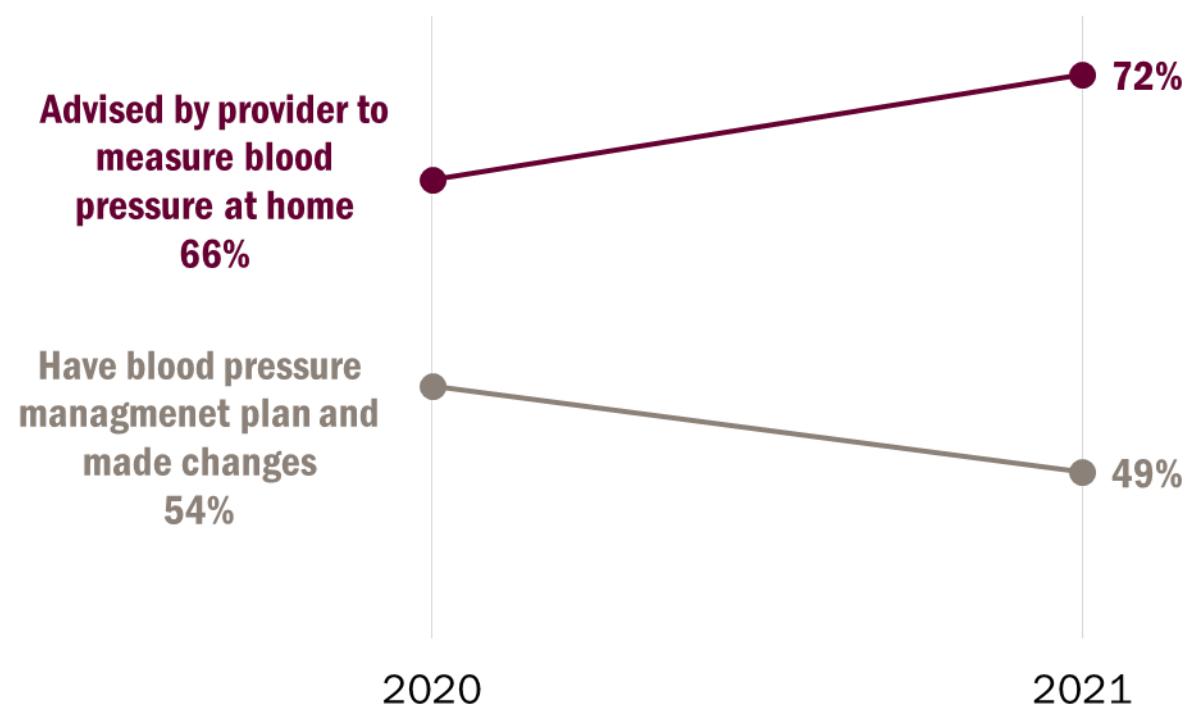
*Medicare: 41% vs. 20% - Medicaid 9% vs. 12% - Military/HIS/State Sponsored/Government Program 11% vs. 9%

Management of Hypertension

Monitoring blood pressure at home, known as self-measured blood pressure, is an approach that supports the improvement of hypertension control.

- The rate of adults 18 and older diagnosed with hypertension who worked with their provider to create a plan to manage their hypertension and have made changes in their lives fell from 2020 (54%) to 2021 (49%).
- Nearly three in four (72%) adults diagnosed with hypertension in 2021 had been advised by their provider to monitor their blood pressure at home, significantly higher than the 66% who were in 2020.

Vermont adults with hypertension who were **advised by a provider to measure their blood pressure at home** was statistically higher in 2021 than in 2020.

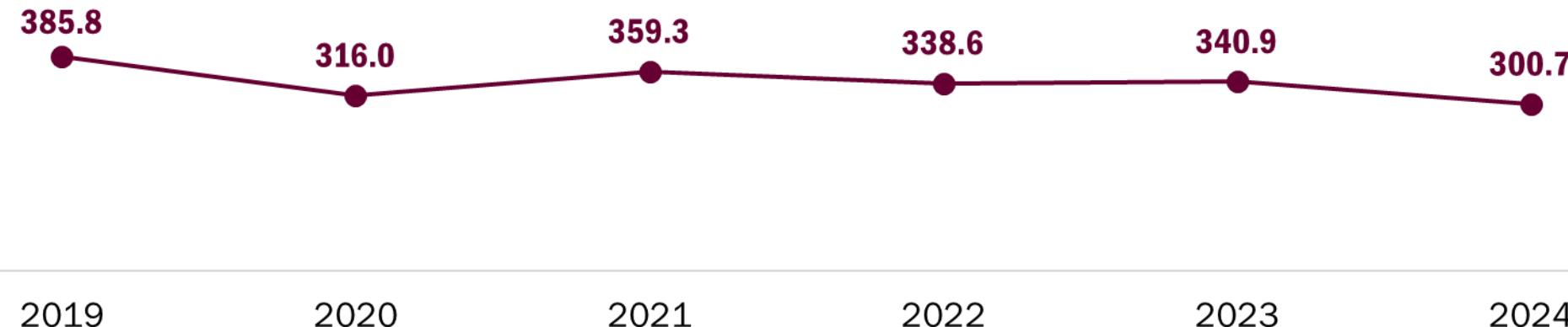


Source: VT BRFSS, 2020 & 2021

Primary Care Visits for Hypertension

- For every 1,000 insured Vermonters, 300.7 had a primary care visit related to hypertension in 2024 (182,197 visits among 89,551 people).
- The 2024 rate was significantly lower than in 2023, as well as all earlier reported years. The decrease in the rate of primary care visits in 2020 is likely due to decreased health care seeking behavior during the COVID-19 pandemic. However, the reason for the decreasing trend since 2021 is unclear, but it could be linked to the increase in emergency department visits from 2021 to 2022 (p. 48).
- On average, there were 2.0 primary care visits per insured person for hypertension in 2024 a decrease from the 2023 average of 2.2 visits per person.

Rate of Primary Care Visits per 1,000 Insured Vermonters

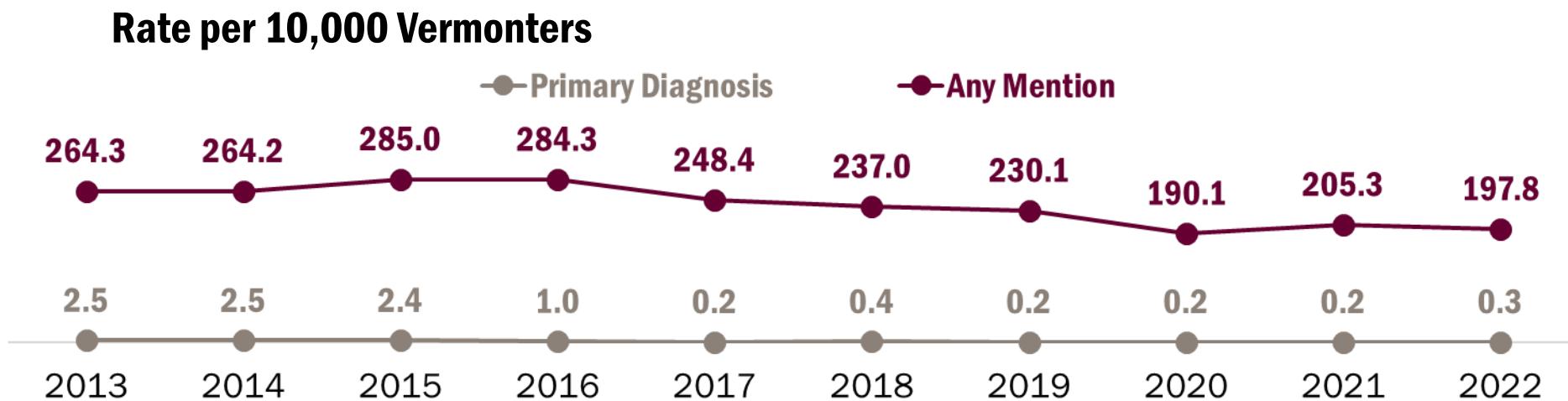


Source: GMCB VHCURES, 2019-2023 – extract 3015 – extracted 10/22/25.
Statistical comparisons were performed using Z-scores.

Hypertension-Related Hospital Discharges

There were 0.3 hospital discharges with a **primary diagnosis** of hypertension for every 10,000 Vermonters (18 discharges) in 2022. This is significantly lower than 2016 and earlier years but statistically similar to 2017 through 2021.

In 2022, there were 197.8 hospital discharges with **any mention** of hypertension for every 10,000 Vermonters (12,797 visits). This is a statistically significant decrease from 2021 but is similar to 2022. The rate of hospital discharges with any mention of hypertension have been steadily decreasing since 2016. The significant drop from 2019 to 2020 through 2022 is likely due to the decrease in health care seeking behavior during the COVID-19 pandemic.



Source: Vermont Uniform Hospital Discharge Data Set (VUHDDS), 2013-2022.

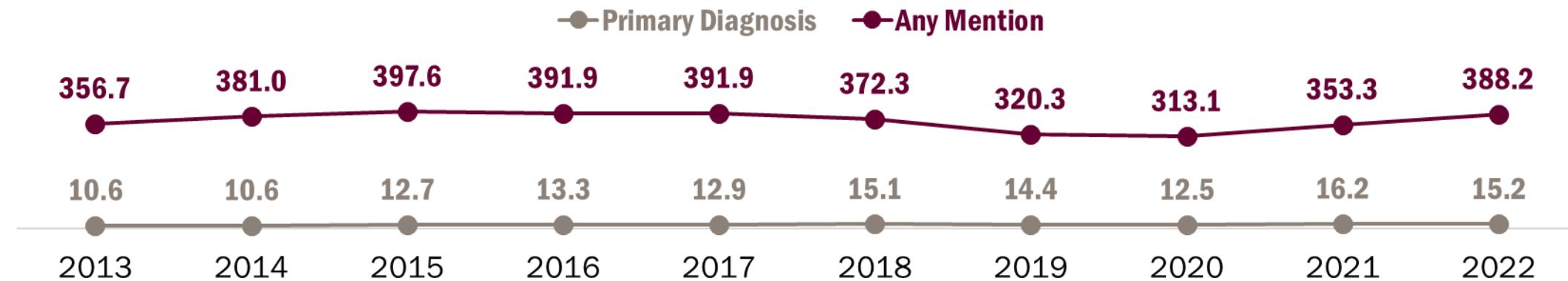
Data represent Vermonters seen at Vermont hospitals and does not include ED visits for Vermont residents who sought care at a facility in a neighboring state. Diagnosis coding was changed from using ICD-9-CM to ICD-10-CM in the 4th quarter of 2015 and may be the cause of changes seen in that year.

Hypertension-Related Emergency Department (ED) Visits

There were 12.5 ED visits with a **primary diagnosis** of hypertension for every 10,000 Vermonters (986 visits) in 2022. This is statistically similar to 2021 but significantly higher than 2020, as well as 2017 and earlier years.

In 2022, there were 388.2 ED visits with **any mention** of hypertension for every 10,000 Vermonters (25,118 visits). From 2017 to 2020, the rate of ED visits with any mention of hypertension decreased. From 2021 to 2022, the rate increased significantly with each year, with the rate in 2022 significantly higher than all years 2018 through 2021. COVID-19 can increase the risk for hypertension as well as significantly raise the blood pressure of those with existing hypertension. Therefore, the upward trend since 2020 may be linked to concurrent or prior COVID-19 disease during the COVID-19 pandemic, or a decrease in primary care maintenance of hypertension during the COVID-19 pandemic.

Rate per 10,000 Vermonters

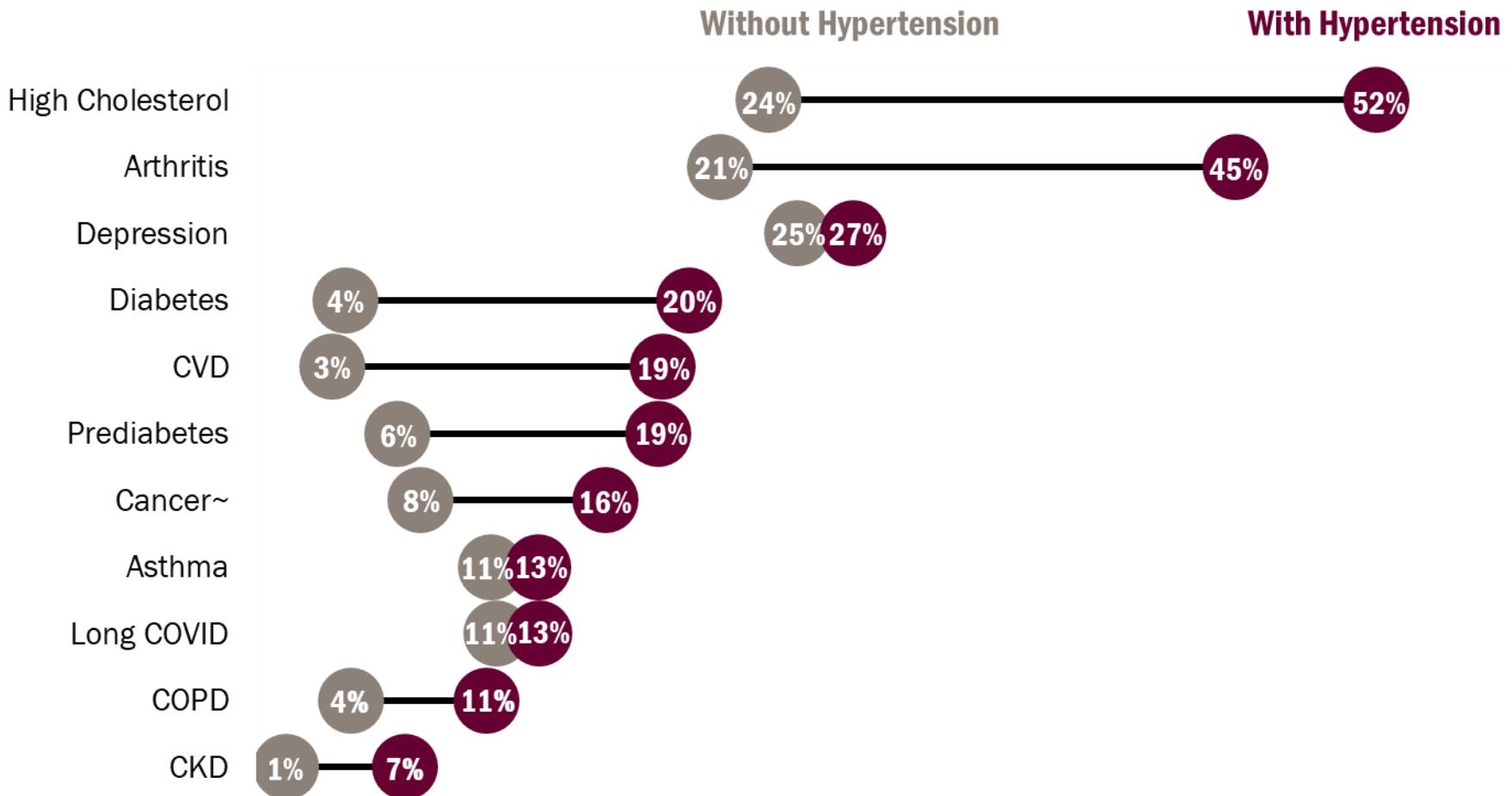


Source: Vermont Uniform Hospital Discharge Data Set (VUHDDS), 2013-2022.

Data represent Vermonters seen at Vermont hospitals and does not include ED visits for Vermont residents who sought care at a facility in a neighboring state. Diagnosis coding was changed from using ICD-9-CM to ICD-10-CM in the 4th quarter of 2015 and may be the cause of changes seen in that year.

Hypertension and Prevalence of Co-Occurring Chronic Disease

Adults with hypertension are significantly more likely* to have a co-occurring chronic disease than those without hypertension. Rates of depression, asthma and long COVID do not differ by hypertension diagnosis.



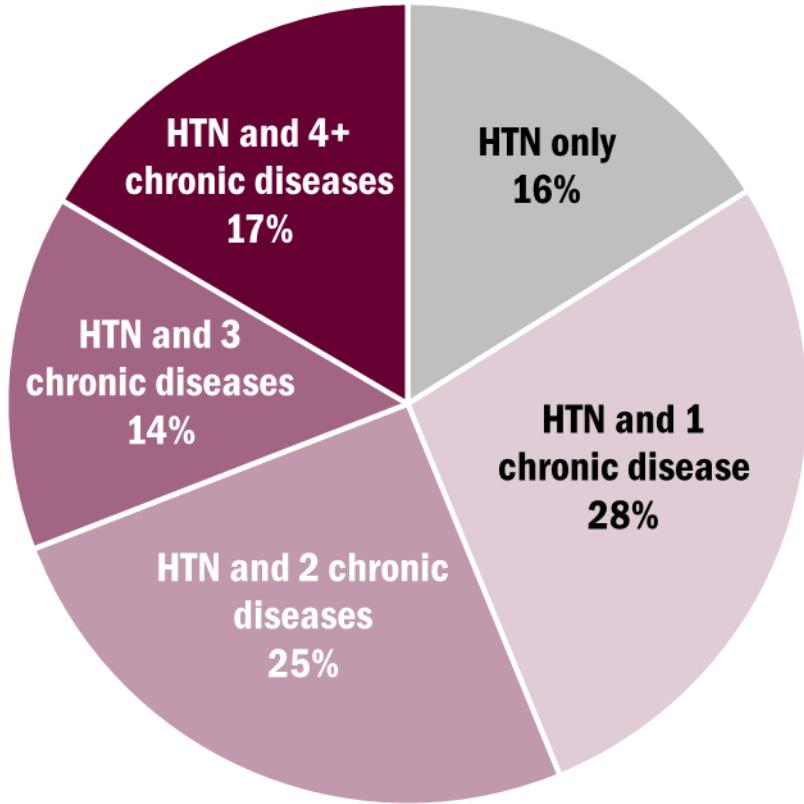
*All differences are statistically significant except for that between depression, asthma, and long COVID.

Source: VT BRFSS, 2023.

~Excludes those whose form of cancer is skin cancer.

Multiple Chronic Diseases and Hypertension

84% of adults with hypertension have one or more chronic disease.



Source: VT BRFSS, 2023.

Vermont Department of Health

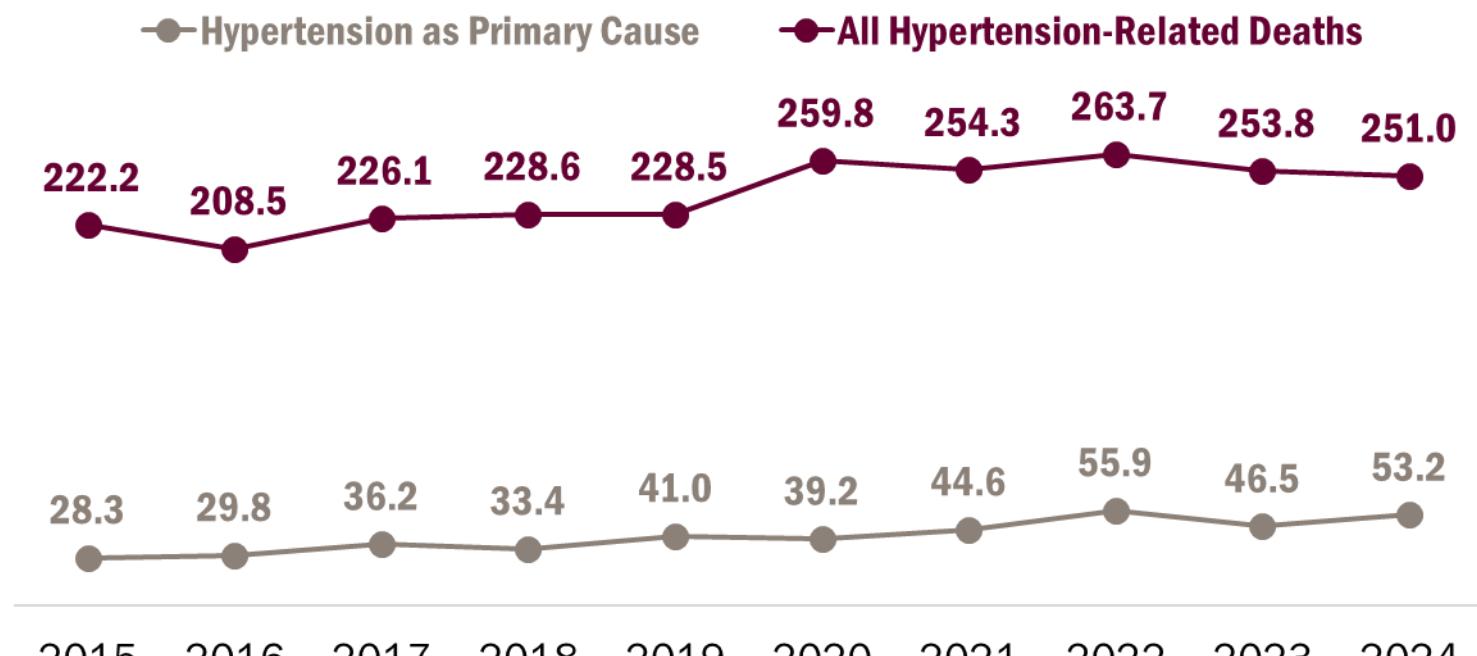
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Hypertension-Related Mortality

- Hypertension increased significantly as a primary cause between 2015 and 2022. The rate in 2024 (53.2 deaths for every 100,000 Vermonters) was statistically similar to the annual rates from 2021 through 2023 and statistically higher than in 2015 and 2020.
- All hypertension-related deaths in 2024 (251.0 deaths for every 100,000 Vermonters) are statistically similar to all reported years except 2015 and 2017, which were significantly lower.

The rate of **all hypertension-related deaths** among Vermonters is significantly higher than that of **hypertension as the primary (principal) cause of death**. This indicates a significant burden of hypertension is a contributing factor to disease.

Hypertension-Related Mortality Rate per 100,000 Vermonters



Source: VT Vital Statistics, 2015-2024.

Data Note: A primary cause of death is the condition-specific diagnosis code(s) listed as the primary reason for death. A disease-related death is one for which the condition-specific diagnosis code(s) are listed in any of the twenty available causes of death.

Data Sources and Notes

Behavioral Risk Factor Surveillance System (BRFSS): Vermont tracks risk behaviors using this telephone survey of non-institutionalized adults. The results are used to plan, support, and evaluate health promotion and disease prevention programs. Since 1990, Vermont, along with the 49 states and three territories has participated in the BRFSS with the Centers for Disease Control and Prevention (CDC). Approximately 7,000 Vermonters are randomly and anonymously selected annually. An adult (18 or older) in the household is asked a uniform set of questions. The results are weighted to represent the adult population of the state.

Vermont Vital Statistics: The Vermont Department of Health vital statistics system tracks Vermont births and deaths. The Department of Health also receives extracts for Vermont resident births and deaths that occur in other states which allows the Department to do statistical analyses of vital events involving all Vermont residents, including those events which occurred outside of the state. Underlying cause of death refers to the condition listed as the first mortality code, indicating it was the primary (principal) cause resulting in death. All deaths related to a condition refers to when it is listed as any of the twenty possible mortality codes.

Green Mountain Care Board (GMCB) Vermont Uniform Hospital Discharge Data System (VUHDDS): Hospital and emergency department discharge data are collected from Vermont hospitals. A primary diagnosis of a condition refers to when that condition is listed as the first diagnosis code which is the main reason for the health care encounter. Any mention of the condition refers to when the condition in question is listed as any of the twenty available diagnosis codes. Patients admitted to the hospital from the emergency department are included in the inpatient analysis and are not counted as an emergency department visit. Due to delays in data delivery from hospitals in neighboring states, VUHDDS analyses in this document are restricted to Vermonters seen at Vermont hospitals. **All analyses, conclusions, and recommendations provided here from VUHDDS are solely those of the Department of Health and not necessarily those of the GMCB.**

Data Sources and Notes Cont.

Green Mountain Care Board (GMCB) Vermont Health Care Uniform Reporting and Evolution System (VHCURES): Vermont's All-Payer Claims Database that contains most medical and pharmacy claims and eligibility data for Vermonters insured by an insurance provider (public or private) who reports to the State of Vermont. Due to various laws and regulations, employer sponsored insurance claims for employers with fewer than 200 employees do not have to report into VHCURES. As a result of this, and the fact that medical care that did not generate an insurance claim do not appear here, data generated from VHCURES are estimates of health care utilization among insured Vermonters. **All analyses, conclusions, and recommendations provided here from VHCURES are solely those of the Department of Health and not necessarily those of the GMCB.** For VHCURES analyses, a disease-related encounter is one in which the condition specific diagnosis code(s) is listed as the primary reason for the visit or a contributing factor for the primary reason.

For Additional Information Visit...

The Vermont Department of Health's Heart Disease Website

- <https://www.healthvermont.gov/wellness/heart-disease>

Explore Cardiovascular Disease Data

- CVD Surveillance: <https://www.healthvermont.gov/health-statistics-vital-records/surveillance-reporting-topic/cardiovascular-disease>
- Healthy Vermonters 2030 Scorecard: <https://embed.clearimpact.com/Scorecard/Embed/84424>
- Healthy Vermonters 2030 Dashboard: <https://www.healthvermont.gov/about/plans-reports/healthy-vermonters>

Take action to prevent or manage cardiovascular disease with My Healthy VT Workshops

- <https://www.myhealthyvt.org/workshop/high-blood-pressure/>

If you need help accessing or understanding this information, contact
ahs.vdhhpdpanalytics@vermont.gov