

## **Vermont Diabetes Surveillance**

**Data Pages** 

#### **Division of Health Statistics and Informatics**

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# Diabetes is a leading cause of morbidity and mortality in Vermont and the United States overall.

It 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 and affordable food, physical inactivity, and tobacco use, can increase the risk of developing diabetes or prediabetes and experiencing poor health outcomes.

The purpose of this document is to present the most current and pertinent data related to prediabetes, gestational diabetes, diabetes, and chronic kidney disease (CKD) and related risk factors among Vermont adults. The Diabetes Surveillance Data Pages use multiple data sources to do this, including:

- 2023 Behavioral Risk Factor Surveillance System (BRFSS)
- 2023 Vermont Health Care Uniform Reporting and Evaluation System (VHCURES)
- 2023 Vermont Vital Statistics
- 2022 Vermont Uniform Hospital Discharge Data Set (VUHDDS)
- 2022 Pregnancy Risk Assessment Monitoring System (PRAMS)
- 2022 U.S. Renal Data System (USRDS)

For a description of data sources used, see the <u>Data Sources</u> section (pg. 71) at the end of this document.

### **How to Read This Document**

These Data Pages contain the most relevant and up-to-date population health data with chapters on prediabetes, gestational diabetes, diabetes, and Chronic Kidney Disease (CKD).

- The following pages contain narrative and visualizations describing the health data related to the chapter's topic. With a couple of unique exceptions, each section generally contains rates of:
  - $\circ$  Prevalence
  - Demographic subgroups/population traits
  - County and health district prevalence
  - Risk factors
  - Health care access
  - Condition management
  - Health care encounters
  - Co-occurring chronic conditions
  - o Deaths
- Not all information is available in every year, so there may be gaps or different years of data used for different content.



#### 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 <u>https://www.healthvermont.gov/about/reports/healthy-vermonters</u>

#### **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 is interpreted as significantly different from the other.

# Statistical differences are noted in charts and visualizations using an asterisk (\*) and the terms "statistically different," "significantly differ," or "significantly higher or lower."

#### **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 on the next page (pg. 6).

#### Definitions

Indicator	Definition
Any Tobacco Use	Includes the current, self-reported, use of cigarettes, e-cigarettes or other electronic vaping products, or smokeless tobacco.
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, BMI 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 that provides an indirect metric of body fat. For most adults an ideal BMI is 18.5-24.9 while anything less than 18.5 or 30 or higher is considered unhealthy.
Disability	A composite measure of any self-reported disability (mobility, cognitive, visual, hearing, self- care, independent living) of any duration or permanence.
Poor Mental Health	Adults reporting experiencing 14 or more days in a month where their mental health was perceived by them as not good.
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
	<b>Middle:</b> 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
Years of Potential Life Lost (YPLL)	YPLL is an established metric of premature death where premature death is any that occurs between the ages of 1 and 74 years, the U.S. standard age for premature death. Deaths among those less than a year old are excluded as those deaths typically have a very different etiology than deaths among those who are at least a year old.
Department of Health	

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#### **Definitions**

Indicator	Definition
Geographic Setting	Measured using Rural-Urban Commuting Area (RUCA) codes ( <u>https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes.aspx</u> ).
	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
	<b>Micropolitan:</b> 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
	<b>Urban:</b> 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
	White, Non-Latino: self-reported race of white with an ethnicity of not Hispanic
Race/Ethnicity	People of Color, Non-Latino: A self-reported race of all races other than white, including multi-race
	Latino: A self-reported ethnicity of Hispanic, regardless of race.
Sexual/Gender Diversity	<b>LGBTQ+:</b> Any adult self-reporting as being something other than straight and heterosexual/cisgender <b>Heterosexual/Cisgender:</b> Any adult self-reporting as straight and not transgender
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## **Key Findings**

Prediabetes, diabetes, and chronic kidney disease (CKD) like many chronic conditions, are 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 these conditions that regularly result in poor health outcomes, lower quality of life, as well as a need to more frequently access health care. These data pages highlight key areas of concern where rates of the previously mentioned conditions consistently have greater impact:

- The rate of blood sugar screening in 2023 rose a relative 69% compared to 2021. With the prevalence of prediabetes also continuing to rise, this suggests that the gap in underdiagnosis of prediabetes, though still present, is shrinking.
- The prevalence of prediabetes, diabetes, and CKD are all significantly higher among those living with a disability or who are military veterans. Additionally, prediabetes and diabetes are significantly more likely among, those living at a low socioeconomic status compared to a high one, and who are heterosexual/cisgender. These higher rates suggest an undue burden of chronic conditions in these populations that likely influences their quality of life.
- Diabetes and CKD-related emergency department (ED) visit rates trended upward in 2020 and have been increasing while
  primary care visits have been decreasing since 2021. Though not conclusive, such shifts in trends point towards concerns of
  poor control or condition management. Lending further validity to this theory, between 2020 and 2022 many provider-led
  diabetes management indicators as well as individual diabetes self-management indicators declined.
- Diabetes and CKD have much higher mortality rates as contributing causes to death than as primary causes, highlighting these conditions as ones that influence or worsen other conditions that lead to death.
- Hypertension is by far the most common co-occurring chronic condition for those with prediabetes, diabetes, and CKD
  ranging from half of those with prediabetes having hypertension to seven in ten having it among those with diabetes and
  CKD. Therefore, controlling hypertension is an important step in managing these conditions.

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## **Prediabetes**

The rate of high blood sugar screening signifying prediabetes/diabetes detection and management. The impact of prediabetes on Vermonters, the risk factors that increase the chance of developing it and, the management and health care utilization of those who have it.

#### **About Prediabetes**

- Prediabetes, sometimes referred to as impaired blood glucose tolerance (IGT) or impaired fasting
  glucose (IFG), is classified by blood sugar levels that are higher than normal but not high enough to be
  diagnosed as diabetes.
- Prediabetes has no clear symptoms; however, some people will have some of the same symptoms or health complications of diabetes.
- Prediabetes places you at increased risk for developing type 2 diabetes but does not necessarily mean you will develop it, particularly if you take action to make changes in your life to reduce the risk.
- Growing evidence indicates the health consequences associated with diabetes begin among those with prediabetes, emphasizing the need for early action and intervention.

Source: American Diabetes Association, With Prediabetes, Action is the Best Medicine. May 23, 2025. Tabák AG et al. Prediabetes: A high risk state for developing diabetes. *Lancet*. 2012;379(9833):2279-2290.

Source: VT BRFSS, 2014-2023.

#### **Screening for High Blood Sugar**

Prevalence of Adults who have been Screened for High Blood Sugar in the Last 3 Years<sup>()</sup>

- Three quarters (76%) of Vermont adults in 2023 received screening for high blood sugar in the last 3 years.
- The rate of high blood sugar screening in 2023 was statistically higher than all previously reported years.



♦ Question only included periodically on the BRFSS survey. Data are not available for 2015, 2016, 2018, 2020, or 2022.

76%

# High Blood Sugar Screening by Subgeography

 The rate of screening for high blood sugar in the last 3-years among Vermont adults is statistically similar to the state rate across all subgeographies.



Source: VT BRFSS, 2021 & 2023.

#### **Adult Trend of Diagnosed Prediabetes**

- The prevalence of diagnosed prediabetes among Vermont adults has been slowly ascending since 2014.
- The prevalence of diagnosed prediabetes in 2023 (10%) is statistically similar to 2021 but statistically higher than all reported years 2019 and earlier.

Prediabetes is an underdiagnosed condition. Therefore, the ascending trend may be more indicative of increased diagnosis of existing prediabetes rather than a true increase of new cases.



#### **Prediabetes Demographics**

- Around one in twelve (10%)<sup>^</sup> Vermont adults or approximately 47,200 adults have ever been diagnosed with prediabetes.
  - Prediabetes is significantly more likely among:
    - Adults 45 years or older compared to those 25-44 years old.
    - Those with a high school education or less compared to those with a college degree or higher.
    - People in households with incomes less than \$50,000 a year, compared to those making \$150,000 or more.
- Around a third of U.S. adults are estimated to have prediabetes, where 80% don't know they have it.<sup>1</sup> Based on this, an additional 236,000 Vermont adults may have prediabetes and not know it.

<sup>^</sup>This is likely an underestimate given that only three-quarters of adults have been tested for high blood sugar in the last 3 years (see page 9).

#### Prevalence of Adults with Diagnosed Prediabetes



Source: VT BRFSS, 2023.

 $\sim$ Value suppressed because sample size too small or relative standard error is > 30.

<sup>1</sup> CDC. Prediabetes – Your Chance to Prevent Type 2 Diabetes.

https://www.cdc.gov/diabetes/about/?CDC\_AAref\_Val=https://www.cdc.gov/diabetes/about/?CDC\_AAref\_

#### **Prediabetes Population Traits**

The conditions in which people are born, grow, live, work, and age can influence health and well-being as well as affect access to health promoting opportunities.

Diagnosed prediabetes prevalence is significantly <u>more likely</u> among adults:

- Who live at a low or middle socioeconomic status (SES) compared to a high SES.
- Who experience poor mental health.
- With any disability.
- Who are heterosexual/ cisgender.
- Who are military veterans.

12%*	Low SES^
11%*	Middle SES
8%	High SES
13%* 9%	Poor Mental Health Good Mental Health
13%* 9%	Any Disability No Disability
12% 10% 10%	ple of Color, Non-Latino Latino White, Non-Latino
<b>11%*</b> 6%	Hetersexual/Cisgender LGBTQ+
<b>15%*</b> 9%	Veteran No Military Service
10%	Urban
11%	Micropolitan
10%	Small Rural
9%	Isolated Small Rural

Peo

Source: VT BRFSS, 2023. ^ Socioeconomic status (SES)

# Diagnosed Prediabetes by Subgeography

• The prevalence of diagnosed prediabetes among Vermont adults is statistically similar to the statewide rate across all counties and health districts.



Source: VT BRFSS, 2021 & 2023. ~Value is not reported due to small sample size or the relative standard error (RSE) is > 30.

#### **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 diagnosed prediabetes are significantly <u>less likely</u> to:

• Get the recommended amount of aerobic physical activity

#### Rate of Lifestyle Factors That Protect Against Developing Prediabetes

**Has Diagnosed Prediabetes Does Not Have Diagnosed Prediabetes** 



Source: VT BRFSS, 2021<sup>1</sup> & 2023<sup>2</sup>.

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#### **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 diagnosed prediabetes are significantly more likely to:

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

#### The Rate of Risk Factors for Developing Prediabetes among Vermont Adults

**Has Diagnosed Prediabetes Does Not Have Diagnosed Prediabetes** 



Source: VT BRFSS, 2023.

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.

~ The rate of BMI-defined obesity among adults with prediabetes may be skewed due to the <u>U.S. Preventive Services Task Force (USPTF) screening recommendations</u> which only recommends testing among those who have overweight or obesity. As a result, this could lead to an inaccurate assessment of weight-related risk for prediabetes.

#### **Diagnosed Prediabetes and Health Care Access**

Vermont adults with prediabetes are:



**Significantly more** likely to **have a personal doctor** than those not diagnosed with prediabetes (96% vs. 91%).

More likely to have visited a doctor in the last year compared to those not diagnosed with prediabetes (84% vs. 75%).

Similarly likely to be covered by public insurance<sup>^</sup> (52% vs. 42%) while significantly fewer are covered by private insurance (44% vs. 53%) compared to those not diagnosed with prediabetes.

^Medicare: 36% vs. 24% - Medicaid 13% vs. 15% - TRICARE/IHS 3% vs. 3%

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#### **Management of Prediabetes**

Vermont adults with diagnosed prediabetes who had their cholesterol checked or ever attended a lifestyle program trended upward from 2021 to 2023.

Cholesterol Checked in last Year	77%	79%
Ever attended a lifestyle change program~	16%	<b>———</b> 17%
	2021	2023

- The rate of adults 18 and older who had their cholesterol checked in the last year trended upward from 2021 (77%) to 2023 (79%).
- In 2023, 17% of adults diagnosed with prediabetes had ever participated in a lifestyle change program to improve their health or prevent diabetes. This is a slight increase from 2017 (15%).

Source: VT BRFSS, 2021 & 2023.

~ Includes programs such as the National Diabetes Prevention Program, YMCA Diabetes Prevention Program, Curves Complete, Weight Watchers, or other similar program.

#### **Primary Care Visits for Prediabetes**

- For every 1,000 insured Vermonters in 2023, 25.8 had a primary care visit related to prediabetes (17,450 visits among 12,776 people).
- The rate of primary care visits for prediabetes among insured Vermonters was statistically similar from 2022 to 2023 but significantly higher than all other reported years.
- On average, there were 1.4 primary care visit per insured person for prediabetes in 2023, similar to all years 2019-2022.



**Rate Primary Care Visits per 1,000 Insured Vermonters** 

Source: GMCB VHCURES, 2014-2023 - extract 3011 - extracted 11/20/24.

♦ Comparisons 2015 and earlier to post-2015 should be made with caution due to changes in the number of private payers submitting to VHCURES beginning in 2016.

^ Billing rules changed from 2015 to 2016 when coding went from International Classification of Disease (ICD), 9<sup>th</sup> revision, clinical modification (ICD-9-CM) to ICD-10-CM making prediabetes non-billable. It returned to billable status in federal fiscal year 2017 making the rates for 2015, 2016, and likely 2017 and 2018, underestimates of the actual rate of visits for prediabetes.

Statistical comparisons were performed using Z-scores.

#### **Prediabetes and Prevalence of Co-Occurring Chronic Conditions**

Adults with prediabetes are significantly more likely to have a co-occurring chronic conditions than those without prediabetes. Rates of Depression do not differ by prediabetes diagnosis.



#### **Multiple Chronic Conditions and Diagnosed Prediabetes**

Adults with prediabetes are significantly more likely to have prediabetes plus **one or two** chronic conditions than prediabetes alone.



- Diagnosed Prediabetes only
- Prediabetes + 1 Chronic Condition
- Prediabetes + 2 Chronic Conditions
- Prediabetes + 3 Chronic Conditions

Source: VT BRFSS, 2023.

## **Gestational Diabetes**

The incidence of diabetes during pregnancy (gestational diabetes) in Vermont, the risk factors and management of those who have it, and postpartum diabetes care.

## **Gestational Diabetes**

- Gestational diabetes is a condition with high blood sugar in the diagnostic range for diabetes that develops during pregnancy and usually reverses to normal blood sugar after pregnancy. It can cause pregnancy complications and increases the risk of developing diabetes later in life for those who had it.
- During pregnancy, usually around the 24<sup>th</sup> week, many may develop high blood sugar levels due to insulin resistance. This is known as gestational diabetes.
  - Little is known about the exact cause of gestational diabetes but, it is believed that the hormones that help the baby develop also block the action of insulin, known as insulin resistance, in the pregnant person's body.
- Proper management of blood glucose levels during pregnancy is essential to the health of the pregnant person and developing baby.

Source: American Diabetes Association, Gestational Diabetes, February 16, 2022.

## **Diabetes Before Pregnancy**

• Three percent of pregnant Vermonters in 2021-2022 were told by a health care provider that they had diabetes before they became pregnant.

## The prevalence of diabetes prior to getting pregnant is statistically similar from 2016-2022.



 Having diabetes prior to getting pregnant in 2021-2022 is more common among people who:

Are 35+ years old (4%)

Have less than a high school diploma (4%)



Source: PRAMS, 2016-2022. Prevalence calculated using a rolling average.

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## **Gestational Diabetes Demographics**

- Eight percent of births in Vermont were to people with gestational diabetes in 2023 (represents 394 births).
  - Births to those with gestational diabetes are significantly higher among people 25 years and older compared to those younger than 25.
  - Those with some college or less education are significantly more likely to have gestational diabetes than those with a 4 year or higher college degree.
  - Gestational diabetes is more likely if the person has BMI-defined obesity compared to any other BMI-defined weight status. All differences by weight are statistically similar.

#### Incidence of Gestational Diabetes among Vermont Births





#### Source: Vermont Vital Statistics, 2023.

Weight categories are defined using BMI which 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.

# **Incidence of Gestational Diabetes by Subgeography**

- The incidence of gestational diabetes is significantly higher in Bennington, Rutland, and Windham Counties and the Bennington, Rutland, and Brattleboro Health Districts when compared to the state average.
- Incidence is significantly lower in Chittenden, Franklin, Lamoille, and Washington Counties as well as the Burlington, Barre, St. Albans, and Morrisville Health Districts.



Source: Vermont Vital Statistics, 2021-2023.

#### **Gestational Diabetes Incidence**

The incidence of births to those with gestational diabetes is stable and statistically unchanged from 2020 through 2023. However, the incidence of gestational diabetes among Vermont births has been trending upward since 2019 with the incidence in 2023 (8%) significantly higher than all reported years 2019 and earlier. Additional years of data are necessary to know if the rate seen in 2023 was a fluctuation or a reversal of the previously ascending trend.





Source: Vermont Vital Statistics, 2014-2023.

## **Prenatal Health Events**

Certain health conditions and events linked to the risk of developing chronic conditions are also associated with a healthy pregnancy.

Among pregnant Vermonters with gestational diabetes:

- The rate of hypertension during pregnancy increased 80% from 2019-2020 (15%) to 2021-2022 (27%).
- Having teeth cleaned during pregnancy trended downward from 56% in 2019-2020 to 52% in 2021-2022.
- Smoking cigarettes during pregnancy trended down from 18% in 2019-2020 to 14% in 2021-2022.
- The rate of depression during pregnancy remained stable from 2019-2020 (30%) to 2021-2022 (30%).

Pregnant Vermonters diagnosed with gestational diabetes who had their teeth cleaned or smoked cigarettes during pregnancy trended down while hypertension trended upward.



Source: PRAMS, 2019-2022.

## **Diabetes Assessed at Postpartum Checkup**

Among pregnant Vermonters who developed gestational diabetes during pregnancy, over half (55%) in 2021-2022 were tested for diabetes during their postpartum checkup. Though the rate of diabetes testing during the postpartum visit is statistically similar between all reported years, it has trended upward since 2017-2018, increasing 20% since 2019-2020. The rate in 2021-2022 represents a seven-year peak.

#### The rate of testing for diabetes at a post-partum visit among those who developed gestational diabetes during

pregnancy trended upward from 2017-2022.



2016-2017 2017-2018 2018-2019 2019-2020 2020-2021 2021-2022

Source: PRAMS, 2016-2022. Rates calculated using a rolling average. Data on this page excludes pregnant Vermonters who had diabetes before becoming pregnant.  Having diabetes assessed at the postpartum checkup in 2021-2022 is more likely among those who:



Are 35+ years old (57%)



Have at least a 4-year college degree (60%)



Vermont Department of Health

## **Diabetes**

The impact of diabetes in Vermont, the risk factors that increase the chance of developing it and the management, health care utilization and mortality for those who have it.

## **About Diabetes**

- Diabetes is a chronic condition in which the body does not make enough insulin or properly use the body's insulin.
  - There are many types of diabetes, with the most common being Type 1 and Type 2.
  - With **Type 1** diabetes, the body is unable to produce insulin. Type 2 diabetes is the most common form of diabetes, where the body does not use its insulin properly. **Type 2** diabetes, can usually be prevented through lifestyle changes.
- Symptoms may include: Frequent urination, excessive thirst and appetite, fatigue, blurred vision, and weight loss as well as long-term effects of slow-healing wounds and numbness/tingling in hands/feet if left unmanaged.
- Over time, excess glucose in the blood can damage the eyes, kidneys, nerves, or heart leading to serious health complications.
- The data presented here reflect all types of diabetes.

Source: American Diabetes Association, Diabetes Overview, 2022.

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Diabetes

#### **Adult Trend of Diabetes**

- The prevalence of diabetes in Vermont remained stable and statistically unchanged from 2014 through 2023.
- The prevalence of diagnosed diabetes among VT adults in 2023 was 9%, significantly lower than U.S. adults (12%).
- As of 2022, 13% of Vermont adults reported having type 1 diabetes while 87% had type 2 diabetes (data not shown).

#### Vermont Adult Prevalence of Diabetes, 2014-2023



**→**VT → U.S.

Source: VT BRFSS, 2014-2023.

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#### **Diabetes Demographics**

#### **Prevalence of Adults with Diagnosed Diabetes**

Vermont 9% Male 10% Female 8% 18-24 N/A~ 25-44 4% 45-64 11% 65+ 17% High School or Less 13% Some College 10% College+ 5% Lower (<\$50K) 12% Middle (\$50K-<\$150K) 8% Higher (\$150K+) **4%** 

Source: VT BRFSS, 2023.

 $\sim\!\!$  Value suppressed because sample size too small or relative standard error is > 30.

- Around one in eleven (9%) or approximately 49,300 Vermont adults have ever been diagnosed with diabetes.
- Diabetes is significantly more likely:
  - With advancing age.
  - Among those with less than a college degree compared to those with a college degree or higher education.
  - As household income decreases.

### **Diabetes Population Traits**

The conditions in which people are born, grow, live, work, and age can influence health and well-being as well as affect access to health promoting opportunities.

Diabetes prevalence is significantly <u>more</u> <u>likely</u> among adults:

- Who live at a low or middle socioeconomic status (SES) compared to a high SES.
- With any disability.
- Who are heterosexual/cisgender.
- Who are military veterans.
- Who live in small rural towns compared to those who live in urban cities/towns.



Source: VT BRFSS, 2023.
# **Diabetes by Subgeography**

- The prevalence of diabetes is significantly higher in Caledonia County and the Rutland and St. Johnsbury Health Districts when compared to the state average.
- Diabetes prevalence is significantly lower than the statewide average in Chittenden and Lamoille Counties as well as the Morrisville Health District.



#### Health District



Source: VT BRFSS, 2022 - 2023.

~Value is not reported due to small sample size or the relative standard error (RSE) is > 30.

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Diabetes

# **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 diagnosed with diabetes are significantly less likely to:

• Get the recommended amount of aerobic physical activity

# Rate of Lifestyle Factors That Protect Against Developing Diabetes



Source: VT BRFSS, 2021<sup>1</sup> & 2023<sup>2</sup>.

# **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 diabetes are significantly more likely to:

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

# The Rate of Risk Factors for Developing Diabetes among Vermont Adults

■ Has Diabetes ■ Does Not Have Diabetes



#### Source: VT BRFSS, 2023.

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.

Diabetes

## **Diabetes and Health Care Access**

Vermont adults with diabetes are:



**Similarly** likely to **have a personal doctor** compared to those not diagnosed with diabetes (98% vs. 91%).

More likely to have visited a doctor in the last year compared to those not diagnosed with diabetes (93% vs. 76%).

**Significantly more** likely to be covered by **public insurance**<sup>(64% vs. 42%)</sup> and **significantly less likely** to be covered by **private insurance** (32% vs. 52%) compared to those not diagnosed with diabetes.

^Medicare: 44% vs. 25% - Medicaid 15% vs. 15% - TRICARE/IHS 6% vs. 3%

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# **Provider Management of Diabetes**

The majority of provider-led diabetes management strategies trended downward in the two most recent measurement years.



Source: VT BRFSS, 2021 & 2023<sup>1</sup>; 2020 & 2022<sup>2</sup>; 2022 & 2023<sup>3</sup>. All data except dental visits are among those who have seen a health care provider in the past 2 years.

Differences between years shown are not statistically significant.

- Among Vermont adults with diabetes who have seen a health care provider in the last two years:
  - Hemoglobin A1c checks at least twice a year trended down in recent years from 74% to 72%, annual influenza vaccinations trended down from 74% to 65%, and pneumonia vaccinations from 68% to 65%.
  - Cholesterol screening in the last year trended upward from 90% to 91% and annual dilated eye exams trended upward from 65% to 68%.
- Visits to an oral health care provider in the last year also trended downward in recent years from 63% to 54%.

# **Adult Self-Management of Diabetes**

Diabetes self-management education, attempts to quit smoking, and having received needed social support trended downward among Vermont adults with diabetes.



Source: VT BRFSS, 2020 & 2022<sup>1</sup>; 2022 & 2023<sup>2</sup>. Differences between years shown are not statistically significant. This is a Healthy Vermonters 2030 measure. See the <u>HV2030 Performance</u> <u>Scorecard</u> for additional details.

- Nearly half (49%) of adults diagnosed with diabetes who smoked cigarettes in 2023 attempted to quit, trending down from the 53% who did in 2022.
- Less than half (47%) of adults diagnosed with diabetes in 2022 had ever attended diabetes self-management education, a decrease from the 50% who ever had in 2020. This remains below the Healthy Vermonters 2030 target of 57%.
- Seven in ten (70%) adults with diabetes felt they had received the social support they needed in 2022, similar to the 71% who had in 2020.

# **Primary Care Visits for Diabetes**

- For every 1,000 insured Vermonters, 157.0 had a primary care visit related to diabetes in 2023 (106,046 visits among 35,413 people).
- The 2023 rate is significantly lower than all previous years 2016-2022. The fluctuations seen from 2020 through 2023 are likely influenced by the COVID-19 pandemic. Diabetes is a condition that puts individuals at greater risk for COVID-19 complications and health care seeking behavior also went down as a result of the pandemic.
- On average, there were 3.0 primary care visits per insured person for diabetes in 2023, similar but slightly lower than the 2022 average of 3.3 per person.



#### **Rate of Primary Care Visits per 1,000 Insured Vermonters**

Source: GMCB VHCURES, 2014-2023 – extract 3011 – extracted 11/20/24.

Comparisons 2015 and earlier to post-2015 should be made with caution due to changes in the number of private payers submitting to VHCURES beginning in 2016. Statistical comparisons were performed using Z-scores.

## **Diabetes-Related Hospital Discharges**

There were 10.8 hospital discharges with a primary diagnosis of diabetes for every 10,000 Vermonters (699 discharges) in 2022. The rate of diabetes hospital discharges has been slowly rising since 2013. The 2022 rate is statistically similar to all reported rates since 2016.

Hospital discharges with any mention of diabetes are statistically higher than the rate of discharges as a primary diagnosis. In 2022, there were 141.7 discharges with any mention of diabetes for every 10,000 Vermonters (9,166 discharges). This rate ascended from 2016 to 2019 and has been fluctuating since. Discharges with any mention of diabetes significantly decreased from 2021 to 2022.



#### 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 hospitalizations 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 4<sup>th</sup> guarter of 2015 and may be the cause of changes seen in that year. Vermont Department of Health 44

# **Diabetes-Related Emergency Department (ED) Visits**

There were 18.9 ED visits with a primary diagnosis of diabetes for every 10,000 Vermonters (1,220 visits) in 2022. The rate of ED visits with a primary diagnosis of diabetes is significantly higher than in 2020 but similar to 2021.

ED visits with any mention of diabetes are statistically higher than the rate of visits as a primary diagnosis. In 2022 there were 220.0 ED visits with any mention of diabetes for every 10,000 Vermonters (14,237 visits). The rate of ED visits with any mention of diabetes in 2022 is significantly higher compared to 2020 and 2021. The 2022 rate represents a new peak for this measure.



#### 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 4<sup>th</sup> quarter of 2015 and may be the cause of changes seen in that year.

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# **Diabetes and Prevalence of Co-Occurring Chronic Conditions**

Adults **diagnosed with diabetes** are significantly more likely to have a co-occurring chronic condition than those without diabetes. Rates of cancer and Long COVID do not differ by diabetes diagnosis.



Source: VT BRFSS, 2023. ~Excludes those whose form of cancer is skin cancer.

## **Multiple Chronic Conditions and Diabetes**

Adults diagnosed with diabetes are significantly more likely to have diabetes plus **one more** or **three or more** chronic conditions than diabetes alone.



- Diabetes only
- Diabetes + 1 Chronic Condition
- Diabetes + 2 Chronic Conditions
- Diabetes + 3+ Chronic Conditions

Source: VT BRFSS, 2023.



# **Diabetes-Related Mortality**

All diabetes-related deaths among Vermonters is significantly higher than diabetes as the primary cause (principal) cause of death. This indicates that the burden of diabetes is as a contributing factor to disease.

Diabetes-Related Mortality Rate per 100,000 Vermonters





Source: VT Vital Statistics, 2014-2023.

This is a Healthy Vermonters 2030 measure. See the <u>HV2030 Performance Scorecard</u> for additional details.

- As a primary cause of death, diabetes is statistically unchanged from 2014 to 2023.
- All diabetes-related deaths has been on the rise since 2020. Though it went down slightly in 2023, it is statistically similar to all rates 2020 to 2022 and significantly higher than the rate seen in 2019.
- Among adults 18 and older, 168.9 deaths for every 100,000 adults in 2023 were related to diabetes. This is lower than the Healthy Vermonters 2030 baseline (170.8 per 100,000) and 2022 rate (185.0 per 100,000) but above the 2030 target (137.0 per 100,000).

Diabetes

# Years of Potential Life Lost (YPLL) Due to Diabetes

A measure of premature mortality

Underlying Cause of Death	Premature Deaths	YPLL	YPLL per 100,000	% of YPLL
All Causes	2,753	41,772	7,143.3	100%
Diabetes	93	1,145	195.8	3%

### Burden of premature deaths among Vermonters aged 1-74 years, 2023

# Rate of YPLL with an Underlying (Primary) Cause of Diabetes ages 1-74 years, 2018-2023

Rate per 100,000 Vermonters ages 1-74



In 2023 there were an estimated 2,753 premature deaths among Vermonters 1-74 years old, 93 of which were due to diabetes (3% of all years of potential years of life lost).

• The rate of YPLL due to diabetes in 2023 is at a peak of 195.8 years of potential life lost for every 100,000 Vermonters 1-74 years old.

Source: VT Vital Statistics, 2018-2023.

# **Chronic Kidney Disease (CKD)**

Impact of chronic kidney disease on Vermonters, the risk factors that increase the chance of developing it and the management, and health care utilization and mortality of those who have it.

# **About Chronic Kidney Disease (CKD)**

- CKD occurs when the kidneys have become damaged over an extended period resulting in them having difficulty performing their normal functions of removing waste and extra water from the body, helping make red blood cells, balancing minerals in the body and helping maintain blood pressure and bone health.
- Having CKD increases other health problems like heart disease and stroke.
- Developing CKD is a slow process with few, if any symptoms at first. It can develop for anyone at any age. Certain conditions however can increase the risk.
  - These include: diabetes, hypertension, cardiovascular disease, tobacco use, clinical obesity, family history of CKD, and history of acute kidney injury (AKI).
- CKD is broken into five stages with symptoms differing or intensifying between them. Visit the National Kidney Foundation's <u>Stages of CKD</u> site to learn more.

## Adult Trend of CKD

- The prevalence of CKD in Vermont remained stable and statistically unchanged from 2014 through 2023.
- The prevalence of CKD among Vermont adults in 2023 was 3%, statistically lower than U.S. adults (4%). The rate of CKD among Vermont adults has been statistically lower than U.S. adults since 2017.

## Vermont Adult Prevalence of CKD, 2014-2023

4% 4% 3% 3% 3% 3% 3% 3% 3% 3% 3% 3% 2% 3% 3% 3% 2% 2% 2% 2%

**→**VT → U.S.

Source: VT BRFSS, 2014-2023.



## **CKD Demographics**

## Prevalence of Adults with CKD

Vermont 3%

3%

3%

N/A~

1%

3%

3%

4%

2%

5%

6%

Male

Female

18-24

25-44

45-64

65+





Lower (<\$50K)

High School or Less

Some College

College+

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

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# **CKD Population Traits**

The conditions in which people are born, grow, live, work, and age can influence health and well-being as well as affect access to health promoting opportunities.

## CKD prevalence is significantly <u>more</u> <u>likely</u> among adults:

- With any disability.
- Who are military veterans.

Low SES^	4%
Middle SES	3%
High SES	<b>2%</b>
Poor Mental Health	4%
Good Mental Health	<b>3%</b>
Any Disability	7%*
No Disability	2%
People of Color, Non-Latino	3%
Latino	N/A~
White, Non-Latino	3%
Hetersexual/Cisgender	3%
LGBTQ+	<b>3%</b>
Veteran	6%*
No Military Service	3%
Urban	3%
Micropolitan	3%
Small Rural	4%
Isolated Small Rural	3%

 $\sim$ Value suppressed because sample size too small or relative standard error is > 30.

Source: VT BRFSS, 2023. ^ Socioeconomic status (SES)



• The prevalence of CKD is statistically similar to the state average across all reported counties and health districts.



Source: VT BRFSS, 2022-2023.

~Value is not reported due to small sample size or the relative standard error (RSE) is > 30.

# **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 CKD are significantly less likely to:

Get the recommended amount of weekly aerobic physical activity

# Rate of Lifestyle Factors That Protect Against Developing CKD

\*

■ Has CKD ■ Does Not Have CKD



Source: VT BRFSS, 2021<sup>1</sup> & 2023<sup>2</sup>.

# **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.

# The Rate of Risk Factors for Developing CKD among Vermont adults

Has CKD

Does Not Have CKD

\* 45% 44% 29% 19% 16% 15% Any Tobacco Use No Leisure Time **BMI-Defined Obesity** Physical Activity (ages 20+)

#### Source: VT BRFSS, 2023.

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.

# Adults with CKD are significantly <u>more</u> <u>likely</u> to:

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

## **CKD and Health Care Access**

Vermont adults with CKD are:



**Similarly** likely to have a personal doctor compared to those not diagnosed with CKD (96% vs. 91%).

More likely to have visited a doctor in the last year compared to those not diagnosed with CKD (92% vs. 77%).



**Significantly more** likely to be covered by **public insurance^** (70% vs. 44%) and **significantly less likely** by **private insurance** (27% vs. 51%) compared to those not diagnosed with CKD.~

^Medicare: 48% vs. 26% - Medicaid 16% vs. 15% - TRICARE/IHS 6% vs. 3%

Source: VT BRFSS, 2023.

~ It should be noted that during later stages of CKD when people become dependent on dialysis, Medicare is typically the primary insurance coverage, regardless of age. This could potentially skew insurance coverage rates towards public insurance.

# **CKD & Hypertension Management**

Hypertension management strategies for people with CKD trended upward between the two most recent measurement years.



Source: VT BRFSS, 2021 & 2023<sup>1</sup>; 2020 & 2021<sup>2</sup>.

All data are among those who have seen a health care provider in the past 2 years except dental visits.

Differences between years shown are not statistically significant.

- Seven in 10 Vermont adults with CKD have hypertension, which is the most prevalent co-occurring chronic condition for those with CKD (see pg. 65). Managing hypertension can go a long way towards improving CKD outcomes, if addressed early.
- Among adults with CKD who have seen a health care provider in the last two years:
  - The proportion currently taking medication for their hypertension rose slightly from 92% in 2021 to 93% in 2023.
  - Who were advised by a health care provider to monitor their blood pressure at home rose from 77% in 2020 to 92% in 2021.
  - Nearly seven in ten (68%) had a hypertension management plan and made changes in their life in 2021, a 17% increase from the 58% who did in 2020.
    - An additional 12% made changes in their life to manage their hypertension in 2021 but did not have a hypertension management plan (data not shown).

## **CKD & Diabetes Management**

Diabetes management among Vermont adults with CKD who have diabetes trended downward from 2020 to 2022.



Source: VT BRFSS, 2020 & 2022.

Differences between years shown are not statistically significant.

- Diabetes and CKD are often closely related. Two in five adults with CKD have diabetes (see page 63). Effectively managing diabetes is crucial to managing CKD.
- Among Vermont adults with CKD who had diabetes:
  - The proportion of those who had seen a health care provider in the last two years and had their A1c checked two or more times in the past year decreased 10% from 83% in 2020 to 75% in 2022.
  - There was a relative 8% decrease in the rate of diabetes retinal eye exams in the last year among those who saw a health care provider in the last two years from 75% in 2020 to 69% in 2022.
  - Fifty-four percent ever attended diabetes selfmanagement education, a relative 8% decrease from the 59% who had in 2020.

# **Other CKD Management**

Other CKD management strategies trended upward between the two most recent years of data reported.

Cholesterol checked in last year <sup>1</sup>	87% •	
Quit attempts among smokers <sup>2</sup>	39% •	42%
Albumin test at least once a year <sup>3</sup>	<b>28%</b>	<b>30%</b> Year 2

- Most adults in 2023 with CKD who saw a health care provider in the last two years had their cholesterol checked within the last year (89%), a slight increase from the 87% who did in 2022.
- Among the 13% of Vermont adults with CKD who currently smoke cigarettes (BRFSS, 2022-2023), two in five (42%) tried to quit smoking in the last year. An increase from the 39% who did in 2021-2022.
- The proportion of Vermont insured individuals with CKD who had at least one albumin test in the past year rose slightly from 28% in 2022 to 30% in 2023.

Source: VT BRFSS, 2021 & 2023,<sup>1</sup> 2021-2022 & 2022-2023<sup>2</sup>; GMCB VHCURES, 2022 & 2023 – extract 3011 – extracted  $3/27/25^3$ Differences between years shown are not statistically significant.

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## **Primary Care Visits for CKD**

- For every 1,000 insured Vermonters, 33.6 had a primary care visit related to CKD in 2023 (22,727 visits among 10,412 people).
- The 2023 rate was significantly lower than all previous years 2016-2022 except 2020.
- On average, there were 2.2 primary care visits per insured person for CKD in 2023, similar but slightly lower than the 2022 average of 2.3 per person.



#### **Rate of Primary Care Visits per 1,000 Insured Vermonters**

Source: GMCB VHCURES, 2014-2023 – extract 3011 – extracted 11/20/24.

♦ Comparisons 2015 and earlier to post-2015 should be made with caution due to changes in the number of private payers submitting to VHCURES beginning in 2016. Statistical comparisons were performed using Z-scores.

# Chronic Kidney Disease (CKD)

# **CKD-Related Hospital Discharges**

There were 11.0 hospital discharges with a primary diagnosis of CKD for every 10,000 Vermonters (711 discharges) in 2022. The rate of CKD hospital discharges has slowly risen since 2013. The 2022 rate is significantly higher than 2013-2017 and 2020 while statistically similar to 2018, 2019, and 2021.

Hospital discharges with any mention of CKD are statistically higher than the rate of discharges as a primary diagnosis. In 2022, there were 97.8 discharges with any mention of CKD for every 10,000 Vermonters (6,327 discharges). The rate has increased significantly since 2013, peaking in 2019. The rate dropped significantly in 2020 before ascending again. The rate in 2022 was significantly higher than 2021.



#### Rate per 10,000 Vermonters

Source: Vermont Uniform Hospital Discharge Data Set (VUHDDS), 2013-2022; rates include diabetic and hypertensive CKD. Data represent Vermonters seen at Vermont hospitals and does not include hospitalizations 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 4<sup>th</sup> quarter of 2015 and may be the cause of changes seen in that year.

Vermont Department of Health

# **CKD-Related Emergency Department (ED) Visits**

There were 4.7 ED visits with a primary diagnosis of CKD for every 10,000 Vermonters (306 visits) in 2022. The rate of visits with a primary diagnosis of CKD has ascended since 2013. The rate of CKD as a primary diagnosis in 2022 is statistically higher than all other reported years.

ED visits with any mention of CKD are statistically higher than the rate of visits as a primary diagnosis. In 2022 there were 81.6 ED visits with any mention of CKD for every 10,000 Vermonters (5,283 visits). The rate of ED visits in 2022 was significantly higher than all other reported years.



#### Rate per 10,000 Vermonters

Source: Vermont Uniform Hospital Discharge Data Set (VUHDDS), 2013-2022; rates include diabetic and hypertensive CKD. 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 4<sup>th</sup> quarter of 2015 and may be the cause of changes seen in that year.

Vermont Department of Health

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# **CKD and Prevalence of Co-Occurring Chronic Conditions**

# Adults **diagnosed with CKD** are significantly more likely to have a co-occurring chronic condition than those without CKD.

Vermont adults with CKD who are diagnosed with hypertension (71%) remain above the Healthy Vermonters 2030 target of 59%.



^^Excludes those whose form of cancer is skin cancer. ^This is a Healthy Vermonters 2030 measure. See the <u>HV2030 Performance Scorecard</u> for additional details.

## **Multiple Chronic Conditions and CKD**

# Adults diagnosed with CKD are significantly more likely to have CKD plus one or more chronic conditions than CKD alone.

Those with CKD are also significantly more likely to have **three or more** chronic conditions in addition to CKD alone than one or two more.



CKD only

- CKD + 1 Chronic Condition
- CKD + 2 Chronic Conditions
- CKD + 3+ Chronic Conditions

Source: VT BRFSS, 2023.

## **CKD-Related Mortality**

## All CKD-related deaths among Vermonters is significantly

**higher than CKD as the primary (principal) cause of death.** This indicates that the burden of CKD is as a contributing factor to disease.

#### **CKD-Related Mortality Rate per 100,000 Vermonters**

■ All CKD-Related Deaths ■ CKD as the Primary Cause of Death



Source: VT Vital Statistics, 2014-2023. Rates include diabetic and hypertensive CKD.

Vermont Department of Health

- As a primary cause of death, CKD is statistically lower than all CKD-related deaths. Though it does fluctuate from 2014 through 2023 there is an overall ascending trend with the rate in 2023 being statistically higher than 2014.
- The rate of all CKD-related deaths has been on the rise since 2014, with a slight decrease in 2019. The 2023 rate is significantly higher than all years 2014 through 2019 and similar from 2020 through 2022.

# Years of Potential Life Lost (YPLL) Due to CKD

A measure of premature mortality

Underlying Cause of Death	Premature Deaths	YPLL	YPLL per 100,000	% of YPLL
All Causes	2,753	41,772	7,143.3	100%
CKD	19	171	31.1	<1%

## Burden of premature deaths among Vermonters aged 1-74 years, 2023

# Rate of YPLL with an Underlying (Primary) Cause of CKD ages 1-74 years, 2018-2023

Rate per 100,000 Vermonters ages 1-74



Source: VT Vital Statistics, 2018-2023. Rates include diabetic and hypertensive CKD.

- In 2023 there were an estimated 2,753 premature deaths among Vermonters 1-74 years old, 19 of which were due to CKD (<1% of all years of potential years of life lost).
- The rate of YPLL due to CKD in 2023 is 29.2 years of potential life lost for every 100,000 Vermonters 1-74 years old, an increase from 2022 but below the 2021 peak.

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# End-Stage Renal Disease (ESRD)

- ESRD is the final stage (Stage 5) of Chronic Kidney Disease (CKD) and also known as end-stage renal failure or late chronic renal insufficiency.
  - CKD is caused by diabetes-related nephropathy (kidney damage from excess blood sugar), hypertension (high blood pressure), glomerular diseases (various types of kidney diseases), inherited/congenital kidney diseases, poisons, or trauma to the kidneys.
- Those experiencing ESRD will typically have 10-15% of normal kidney function.
- ESRD symptoms include: anemia, headache, fatigue, weakness, nausea, vomiting, thirst, muscle cramps/twitching/numbness in limbs, high blood pressure, poor digestion, decreased urinary output, and mental symptoms (lowered alertness, trouble concentrating, seizures).

Source: CDC. Chronic Kidney Disease Initiative, Prevention and Risk Management. March, 2021.

## **New Cases of ESRD**

- The rate of new cases of ESRD in Vermont as of 2022 was 165.4 cases for every one million Vermonters.
- The incidence in 2022 decreased slightly from 173.5 cases for every million Vermonters in 2021 and is statistically similar to all other reported years.
- As shown below, ESRD incidence is generally descending but does fluctuate. The 2020 rate represents the lowest rate in over a decade. Additional years of data are needed to know whether the rate increase seen since 2021 was a reversal of the trend or normal fluctuation.

#### End-Stage Renal Disease (ESRD) Incidence among Vermont Residents, 2013-2022



Source: U.S. Renal Data System, 2013-2022.

## **Data Sources and Notes**

**Behavioral Risk Factor Surveillance System (BRFSS):** Vermont tracks risk behaviors using this telephone survey of noninstitutionalized 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.

**Pregnancy Risk Assessment Monitoring System (PRAMS):** PRAMS is a paper questionnaire with phone follow-up that collects self-reported information from mothers about their pregnancy and their baby to understand why some babies are born health and others are not. A random sample of Vermont mothers is identified from Vermont resident birth certificates indicating a live birth occurred in VT or NH. Data are weighted to be representative of the state population.

**United States Renal Data System (USRDS):** The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) funds the USRDS which is a national data system collecting, analyzing, and distributing information about chronic kidney disease (CKD) and end-stage renal disease (ESRD) in the United States. Data are received by USRDS through collaboration with the Centers for Medicare & Medicaid Services (CMS), United Network for Organ Sharing (UNOS), and ESRD networks. Data are made available publicly through the USRDS.

## **Data Sources and Notes**

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.

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. A primary diagnosis of a condition refers to when that condition is listed as the first diagnosis code. 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 hospital discharge data set and are not included in the emergency department data set. Due to delays in data delivery from hospitals in neighboring states, VUHDDS analyses in this document are restricted to Vermonters seen at Vermont hospitals.

**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 healthcare 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) are listed as the primary reason for the visit or a contributing factor for the primary reason.
## For Additional Information Visit...

## **Explore Vermont Diabetes Data**

## https://www.healthvermont.gov/wellness/diabetes

Diabetes Surveillance: <a href="https://www.healthvermont.gov/health-statistics-vital-records/surveillance-reporting-topic/diabetes">https://www.healthvermont.gov/health-statistics-vital-records/surveillance-reporting-topic/diabetes</a> Healthy Vermonters 2030 Scorecard: <a href="https://www.healthvermont.gov/about/plans-reports/healthy-vermonters">https://www.healthvermont.gov/about/plans-reports/healthy-vermonters</a> Healthy Vermonters 2030 Dashboard: <a href="https://www.healthvermont.gov/about/plans-reports/healthy-vermonters">https://www.healthvermont.gov/about/plans-reports/healthy-vermonters</a>

## Take action to prevent or manage diabetes with My Healthy VT Workshops

https://www.myhealthyvt.org/

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