THE BURDEN OF CHRONIC DISEASE IN DELAWARE

2024

DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health
Physical Activity, Nutrition, and Obesity Prevention Program

June 2024

The Burden of Chronic Disease in Delaware 2024

Questions or comments concerning this report can be directed to the Delaware Department of Health and Social Services, Division of Public Health, Physical Activity, Nutrition and Obesity Prevention Program.

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Contents

Executive Summary

Background

The Burden of Chronic Disease in Delaware 2024 summarizes the current state of chronic diseases in Delaware. This is an update to, and expansion of, *Chronic Disease in Delaware: Facts and Figures*, published in 2019 by the Delaware Department of Health and Social Services (DHSS), Division of Public Health (DPH). This report summarizes how chronic diseases impact population health in Delaware and how these disease patterns compare to national data. By documenting these data about the health of residents, this report informs statewide efforts to reduce the effects of chronic diseases in Delaware. The purpose of this report is to present current data and interpretation of those data for decision makers and other stakeholders about the current landscape of chronic disease in Delaware. Stakeholders may include, but are not limited to, researchers, policy makers, program managers, community partners and leaders, clinicians and other health professionals, and other local, state, and national government agencies.

Findings

Chronic diseases cost Delaware billions of dollars every year in health-related costs.[1] Tens of thousands of Delaware residents live with a chronic disease, and 10% of residents have multiple chronic conditions.[2] In 2020, chronic diseases accounted for seven of the top 10 leading causes of death in Delaware; cardiovascular disease and cancer alone accounted for nearly half of all deaths statewide.[3]

Over the last decade, Delaware has made some progress on reducing the impact of the leading chronic diseases. While prevalence, incidence, and mortality decreased for some conditions, they increased for others.[3,4,5,6]

- While the prevalence of specific heart diseases (coronary heart disease, angina, and heart attack) has been stable since 2011, the five-year age-adjusted mortality rate from heart disease (as a broader group) decreased in Delaware and nationally between 2006-2010 and 2016-2020. [5,6]
- The prevalence of stroke remained stable in Delaware and is about the same as the national median. In contrast, the five-year age adjusted stroke mortality rate in Delaware increased from 2006-2010 to 2016-2020 and remains higher than the United States (U.S.) overall.[5,6]
- The five-year age-adjusted mortality rate from vascular disease has remained stable from 2006-2010 and 2016-2020 in Delaware but decreased in the U.S. overall.[5]
- There have been no changes in the prevalence of hypertension from 2011 to 2021. Likewise, the five-year age-adjusted hypertension mortality rate remained stable between 2006-2010 and 2016-2020 in Delaware and the U.S. However, in 2016-2020, Delaware has a lower hypertension mortality rate compared to the U.S.[5,6]
- The mortality rate of chronic lower respiratory disease in Delaware is about the same as the U.S. overall but declined from 2006-2010 to 2016-2020.[5]

- The prevalence of diabetes among Delaware adults increased from 2011 to 2022. However, the five-year age-adjusted diabetes mortality rate is lower in Delaware than the U.S. Both trends remained stable between 2006-2010 and 2016-2020.[5,6]
- Non-Hispanic Black Delaware adults had higher prevalence of, and mortality from, diabetes than non-Hispanic White or Hispanic adults.[6]

Table 1 summarizes the major findings for specific chronic diseases and compares the measure to both the U.S. and Delaware and describes the change over time. The table also highlights important racial inequities. Overall, data suggest that Delaware falls in the middle of U.S. states for its prevalence of chronic diseases and their risk factors.

The state made considerable efforts to reduce the statewide burden of chronic disease. Notable achievements in risk factors include the dramatic decrease in cigarette smoking prevalence from 21.8% in 2011 to 12.9% in 2022. While heavy drinking prevalence has remained stable since 2011, binge drinking significantly decreased from 20.3% in 2011 to 14.0% in 2022.[6]

The Coronavirus 2019 (COVID-19) pandemic highlighted the need for additional efforts, as it presented unique challenges for preventing, managing, and treating chronic diseases, and it exacerbated many underlying health inequities and disparities. The final section of this report includes recommendations for how DPH can further chronic disease prevention and management efforts throughout the state and improve the health and well-being of residents statewide.

Table 1. Highlights of comparison between Delaware and U.S. in mortality and prevalence/incidence of chronic conditions

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	Prevalence*		Mortality		Racial Inequities
Chronic Condition	Comparison DE to U.S., 2022	Change in DE since 2011	Comparison DE to U.S. (2016-2020)	Change in DE 2006-2010 to 2016-2020	Key takeaways in Delaware
Heart disease	NA	NA	↓	↓	From 2016-2020, the five-year age adjusted heart disease mortality rate was higher among non-Hispanic Black Delawareans compared to non-Hispanic White Delawareans.
Coronary heart disease and angina	▬	▬	NA	NA	
Heart Attack	▬	▬	↓	↓	

Sources: National Vital Statistics System. CDC WONDER Online Database – 1999-2020: Underlying Cause of Death by Bridged-Race Categories. National Center for Health Statistics, Centers for Disease Control and Prevention, 2021. http://wonder.cdc.gov/ucd-icd10.html. Accessed January 31, 2024.

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	Prevalence*		Mortality		Racial Inequities
Chronic Condition	Comparison DE to U.S., 2022	Change in DE since 2011	Comparison DE to U.S. (2016-2020)	Change in DE 2006-2010 to 2016-2020	Key takeaways in Delaware
Stroke	▬	▬	↑	↑	From 2016-2020, the five-year age adjusted stroke mortality rate was higher among non-Hispanic Black Delawareans compared to non-Hispanic White Delawareans.

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Chronic Condition	Prevalence *		Mortality		Racial Inequities
	Comparison DE to U.S., 2021	Change in DE since 2011	Comparison DE to U.S. (2016-2020)	Change in DE 2006-2010 to 2016-2020	Key takeaways in Delaware
Vascular disease			▬	▬	From 2016-2020, the five-year age adjusted hypertension mortality rate was higher among non-Hispanic Black Delawareans compared to non-Hispanic White Delawareans.
Hypertension	↑	▬	↓	▬	
High cholesterol	▬	▬	NA	NA	

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Chronic Condition	Incidence*		Mortality		Racial Inequities
	Comparison DE to U.S., 2016-2020	Change in DE, 2006-2019	Comparison DE to U.S. (2016-2020)	Change in DE 2006-2020	Key takeaways in Delaware
Cancer (all types)**	↑	↓	↑	↓	Non-Hispanic Black male residents experienced the greatest declines in cancer mortality and incidence over time.

Sources: National Vital Statistics System. CDC WONDER Online Database – 1999-2020: Underlying Cause of Death by Bridged-Race Categories. National Center for Health Statistics, Centers for Disease Control and Prevention, 2021. http://wonder.cdc.gov/ucd-icd10.html. Accessed January 31, 2024.

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	Incidence*		Mortality		Racial Inequities
Chronic Condition	Comparison DE to U.S., 2016-2020	Change in DE, 2006-2019	Comparison DE to U.S. (2016-2020)	Change in DE 2006-2020	Key takeaways in Delaware
Lung cancer**	↑	↓	↑	↓	Lung cancer incidence rates among non-Hispanic Black Delaware residents were stable between 2006 and 2016 but experienced a significant decrease of 14.5% per year between 2016 and 2019, suggesting recent progress towards lowering lung cancer incidence in this group.

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	Incidence*		Mortality		Racial Inequities
Chronic Condition	Comparison DE to U.S., 2016-2020	Change in DE, 2006-2019	Comparison DE to U.S. (2016-2020)	Change in DE 2006-2020	Key takeaways in Delaware
Female breast cancer**	↑	▬	▬	▬	Breast cancer mortality rates decreased an average of 1.4% per year among non-Hispanic White females and remained stable for non-Hispanic Black females.

Sources: National Vital Statistics System. CDC WONDER Online Database – 1999-2020: Underlying Cause of Death by Bridged-Race Categories. National Center for Health Statistics, Centers for Disease Control and Prevention, 2021. http://wonder.cdc.gov/ucd-icd10.html. Accessed January 31, 2024.

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Chronic Condition	Incidence*		Mortality		Racial Inequities
	Comparison DE to U.S., 2016-2020	Change in DE, 2006-2019	Comparison DE to U.S. (2016-2020)	Change in DE 2006-2020	Key takeaways in Delaware
Prostate cancer**	↑	↓	▬	↓	Prostate cancer mortality rates decreased an average of 2.9% per year among non-Hispanic White males and decreased an average of 3.3% per year among non-Hispanic Black males.

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	Incidence*		Mortality		Racial Inequities
Chronic Condition	Comparison DE to U.S., 2016-2020	Change in DE, 2006-2019	Comparison DE to U.S. (2016-2020)	Change in DE 2006-2020	Key takeaways in Delaware
Colorectal cancer**	–	↓	–	↓	Between 2006 and 2020, colorectal cancer mortality rates decreased an average of 2.7% per year among non-Hispanic White Delaware residents and remained stable for non-Hispanic Black and Hispanic Delaware residents

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Chronic Condition	Prevalence *		Mortality		Racial Inequities
	Comparison DE to U.S. (2022)	Change in DE since 2011	Comparison DE to U.S. (2016-2020)	Change in DE 2006-2020	Key takeaways in Delaware
Chronic lower respiratory disease	NA	NA	–	↓	While chronic lower respiratory disease mortality has decreased in Delaware, from 2016-2020, the five-year age adjusted chronic lower respiratory mortality rate was higher among non-Hispanic White Delawareans compared to non-Hispanic Black Delawareans.
Chronic Obstructive Pulmonary Disease (COPD)	–	–	–	–	
Asthma	–	–	–	–	

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	Prevalence *		Mortality		Racial Inequities
Chronic Condition	Comparison DE to U.S. (2022)	Change in DE since 2011	Comparison DE to U.S. (2016-2020)	Change in DE 2006-2020	Key takeaways in Delaware
Diabetes	↑	↑	↓	▬	In 2022, non-Hispanic Black Delaware adults had higher prevalence of diabetes compared to non-Hispanic White adults. Likewise, from 2016-2020, the five-year age adjusted diabetes mortality rate was higher among non-Hispanic Black Delawareans compared to non-Hispanic White Delawareans.

Sources: National Vital Statistics System. CDC WONDER Online Database – 1999-2020: Underlying Cause of Death by Bridged-Race Categories. National Center for Health Statistics, Centers for Disease Control and Prevention, 2021. http://wonder.cdc.gov/ucd-icd10.html. Accessed January 31, 2024.

Division of Population Health. BRFSS Prevalence & Trends Data. National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2022. https://www.cdc.gov/brfss/brfssprevalence/. Accessed January 31, 2024.

Comprehensive Cancer Control Program. Cancer Incidence and Mortality in Delaware, 2016–2020. Division of Public Health, Delaware Department of Health and Social Services, October 2023. https://www.dhss.delaware.gov/dph/dpc/files/20162020IMFINALAPPROVED.pdf. Accessed January 31, 2024.

Delaware Department of Health and Social Services, Division of Public Health, Delaware Cancer Registry, 2022.

*This table shows the trends in prevalence data for all conditions, excluding cancer (all types), lung cancer, female breast cancer, prostate cancer, and colorectal cancer, for which it shows trends in incidence data.

**Due to Delaware's small population base, Delaware Cancer Statistics calculates cancer mortality and incidence rates using five-year calendar year groupings. Incidence 'Change in DE' is based on average annual percent change from 2006-2019. The COVID-19 pandemic resulted in delays and reductions in cancer screening and diagnosis, which subsequently lead to a decline in 2020 incidence counts and rates that was considered an anomaly. Inclusion of 2020 rates would bias the estimates of trends over time, and therefore, 2020 incidence rates were not included in trend analysis. Mortality 'Change in DE' is based on average annual percent change from 2006-2020.

Introduction

The Burden of Chronic Disease in Delaware 2024 describes the current state of chronic diseases in Delaware. This report summarizes how chronic diseases impact population health in Delaware and how these disease patterns compare to national data. By documenting these data about the health of residents, this report informs statewide efforts to reduce the effects of chronic disease in Delaware.

The report summarizes the burden of chronic disease using two types of indicators: (1) the degree to which each chronic condition is contributing to *mortality* among Delaware residents during a specified time period; and (2) how common it is for Delaware residents to develop and have a chronic condition during a specified time period.[*,†] The second type of indicator can be expressed as *prevalence* (all residents with cases of the condition during a specific time period, including new and existing cases) or *incidence* (newly developed cases of the condition; in particular for cancer, which can go into remission). Prevalence and incidence indicate how many residents are living with, require treatment for, and may be at risk of dying from different chronic conditions. Examining patterns of mortality, prevalence, and incidence can highlight important issues related to population health, including the effectiveness of treatment and population-based interventions, as well as access to care.

The organization of each section of this report provides background about a chronic condition or risk factor, how mortality and prevalence/incidence for that condition or risk factor have changed over the last 10 years, and how these indicators and trends compare to the U.S overall. To explore disparities in disease burden, some data are broken down by race/ethnicity and sex subgroups.[‡] The data sources for the report are publicly available datasets on chronic diseases and risk factors for chronic disease (such as physical activity and tobacco use), including the National Center for Health Statistics and Behavioral Risk Factor Surveillance System.

Overall, the report illustrates trends in chronic diseases during the past decade. It concludes with a series of recommendations for the Delaware Department of Health and Social Services, Division of Public Health (DPH) to decrease the burden of chronic disease in Delaware.

[*] Age-adjusted rates are presented to make stronger comparisons between groups with different age distributions, such as Delaware and the U.S.
[†] This report presents age-adjusted mortality rates for a single year in Delaware and the U.S., as published by the CDC WONDER database. The Delaware Health Statistics Center publishes five-year age-adjusted mortality rates for Delaware, which differ from the data included throughout this report.
[‡] Subgroups in this report reflect available data and are not fully inclusive of all racial/ethnic or gender identities.

Methods and Data Sources

This report uses a variety of different data sources to determine the burden of specific chronic diseases in Delaware. Two main concepts describe the morbidity (illness or disease in a population). Prevalence estimates presented in this report are for a single year and describe all cases of that disease within the population. Prevalence estimates are presented for most chronic conditions except for cancer. Crude prevalence estimates are presented throughout the report and reported as a percent of the population. Incidence rates are presented for a five-year period and describe only new cases of the disease.

Mortality rates are presented for five-year periods and describe the deaths of a specific or group of diseases.

Both incidence and mortality rates are age-adjusted and presented as a rate per 100,000 population. Age-adjustment allows for two populations with differing age distributions to be compared; however, unlike crude rates, because adjustments have been made, they cannot be equated to the actual number of cases or deaths within a population.

Behavioral Risk Factor Surveillance System (BRFSS)

The Behavioral Risk Factor Surveillance System (BRFSS) is a random-digit dial telephone health-related survey conducted in all 50 states, the District of Columbia (D.C), and three U.S. territories. On average, 400,000 surveys of non-institutionalized adults are conducted each year and approximately 4,000 are conducted in Delaware. In 2011, the methodology of the BRSS was updated to include the addition of the cell phone users. As a result, all trendlines presented using BRFSS start in 2011.

Many questions aimed to determine the prevalence of a chronic condition or risk factor are asked every year. These conditions and risk factors presented in this report include heart disease, stroke, diabetes, physical activity, nutrition, overweight and obesity, tobacco use, and excessive alcohol consumption. A few conditions are asked on a rotating basis. High cholesterol and hypertension questions are asked in odd years. Sugar-sweetened beverage consumption was last asked in 2017.

When comparing state-level prevalence to the U.S, the national median is presented and not a U.S. prevalence estimate. Because the BRFSS is a state-based complex survey, with a representative sample in each state, weights produced for calculation are state-level weights. Therefore, a national prevalence (or average) may be biased using state-level weights.

Youth Risk Behavior Surveillance System (YRBSS)

The Youth Risk Behavior Surveillance System (YRBSS) is a school-based survey that is administered in most states and a few local school districts and territorial or tribal governments. The survey is administered biennially in odd years. The survey results in this report are from the high school survey only. Just under 1,600 students participated in the YRBSS in Delaware in 2021.

The YRBSS asks a variety of questions designed to determine the prevalence of risk behaviors and conditions. This report includes data for physical activity, nutrition, obesity, tobacco use, and alcohol use.

Delaware Cancer Registry (DCR) and SEER*Stat

The Delaware Cancer Registry (DCR) gathers data regarding cancer cases, treatment, and deaths from all hospitals, laboratories, physicians, and other health care providers as required by state law. These data are used for the surveillance of cancer in Delaware, including reporting on incidence, mortality, trends, and survival. Analysis of these data are used for program planning and inform policy to better the health of all Delawareans.

All analyses of DCR data are conducted in the National Cancer Institute's Surveillance, Epidemiology, and End Results Program (SEER) software. The statistical software package called SEER*Stat uses U.S. Census data to estimate the underlying population for calculations requiring denominators such as incidence and mortality rates. All incidence and mortality rates are age-adjusted to the 2000 standard population. Five-year age-adjusted incidence rates are calculated due to the small population size of Delaware, and therefore, years are aggregated to produce a more robust estimate.

The November 2022 SEER data submission includes new cancer cases diagnosed in 2020, the first year of the Coronavirus 2019 (COVID-19) pandemic. The pandemic resulted in delays and reductions in cancer screening and diagnosis, which subsequently led to a decline in 2020 incidence counts and rates that was considered a temporary, anomalous year. Since including 2020 rates would bias the estimates of trends over time, 2020 rates were not included in trend analysis.[4] Caution should be taken when making comparisons of cancer incidence data that include 2020 with other time periods, as decreases in incidence counts and rates may primarily be due to the effects of COVID-19 rather than decreases due to cancer control efforts.

National Vital Statistics System and CDC WONDER Online Database

The National Vital Statistics System (NVSS) collects information on births and deaths in the United States. For the purposes of this report, only data on mortality (deaths) are presented. The NVSS uses data submitted on death certificates from all 50 states and District of Columbia. Age-adjusted mortality rates are publicly available on the U.S. Centers for Disease Control and Prevention's (CDC) Wide-ranging ONline Data for Epidemiologic Research (CDC WONDER), a web-based menu-driven system that allows for deaths to be queried by a variety of variables. This report used the Underlying Cause of Death, 1999-2000 Request to produce age-adjusted mortality rates for Delaware and the U.S. In some cases, the same International Classification of Disease (ICD) ICD-10 codes were used to group specific diseases into broader categories. These categories, such as heart disease, are consistent with categories used by the Delaware Health Statistics Center. However, due to denominator estimate methodology differences, rates may differ between this report and mortality rates published by the Delaware Health Statistics Center within DPH. CDC WONDER was used so that consistent estimates between the U.S. and Delaware could be presented and differences between rates were not due to differences in methodology.

Overview of Chronic Disease

Chronic diseases are health conditions that are long-lasting or persist over time and require ongoing monitoring and treatment. They can often be controlled but not cured. Common chronic diseases include heart disease, cancer, chronic lower respiratory disease, diabetes, and obesity. Many chronic diseases share a common set of risk factors such as tobacco use, unhealthy diet, low levels of physical activity, and excessive alcohol use.[7]

Individuals with chronic diseases can experience daily symptoms and more frequent acute health problems, both of which can negatively impact their overall quality of life and life expectancy.[8] Chronic diseases typically worsen over time, especially without proper treatment, and require specialized medical care.

Chronic diseases are the leading cause of death, disability, and health care costs throughout the U.S.; 60% of all U.S. adults have at least one chronic disease, and 40% have two or more.[7] The burden of chronic disease is increasing nationwide due to the combined effects of an aging population, longer lives due to medical advancements, and the high prevalence of risky lifestyle choices among Americans.[9]

Inequities in chronic disease burden

In Delaware and across the nation, certain populations bear a disproportionate burden of chronic disease, particularly heart disease, stroke, cancer, and diabetes. These chronic conditions are often more common, diagnosed later, and result in worse health outcomes. Populations that are often disproportionately affected by negative chronic disease outcomes include people of color, those with lower incomes, or those living in rural or other under-resourced communities.[10]

Disparities in chronic diseases are often the result of the social determinants of health, the conditions in which people are born, live, learn, work, play, worship, and age. Examples are access to affordable, quality education and health care; safe housing, transportation, and safe neighborhoods; the impact of racism, discrimination, and violence; economic and housing stability; access to nutritious foods and physical activity opportunities; and language and literacy skills.[11]

The conditions that comprise the social determinants of health can prevent people from living healthy lifestyles, which in turn can lead to the onset of chronic diseases. Delaware communities that have limited access to high quality education and employment opportunities, healthy food options, and safe spaces for physical activity have worse health outcomes than communities with more resources. Historical patterns of structural racism and residential segregation present in Delaware and the U.S. may perpetuate health inequities, as communities of color in Delaware are often under-resourced, and residents of these communities face greater barriers to maintaining a healthy lifestyle. For example, the city of Wilmington has the highest level of residential segregation in the state, and life expectancy varies by about 16 years across the city's neighborhoods, with Black communities generally having the lowest life expectancy.[12]

Overall, higher rates of chronic diseases occur among people of color and those living in under-resourced communities. However, these disparities are not evident in the Delaware-specific or

nationwide prevalence[§] and mortality[**] of every chronic condition, and disparities can change over time. This could be the result of several different factors, including, but not limited to, different participation rates in certain behaviors that increase risk for chronic diseases (such as smoking or high levels of physical inactivity) or targeted efforts to reduce the burden of disease among certain populations.

Chronic disease and COVID-19

Health disparities in outcomes related to chronic diseases have existed for a long time but were exacerbated by the COVID-19 pandemic in several different ways. First, many chronic conditions – such as heart disease, diabetes, cancer, chronic obstructive pulmonary disease (COPD), chronic kidney disease, diabetes, and obesity – increase a person's risk for severe illness and death from COVID-19. Additionally, certain lifestyle choices, including smoking tobacco and physical inactivity, are risk factors for both chronic diseases and severe COVID-19 infection.[13] This means that populations suffering from chronic diseases at disproportionate rates also suffer from illness, hospitalization, and mortality from COVID-19 at disproportionate rates.

The COVID-19 pandemic also had a detrimental effect on the prevention, identification, and management of chronic diseases. Many people delayed seeking care or opted not to receive care entirely to avoid getting sick with COVID-19. As a result, health care utilization dropped, including preventive care, chronic disease management, and emergency care – all of which can lead to life-threatening results for those living with one or more chronic diseases.[13]

Moving forward, COVID-19 presents uncertain challenges related to chronic disease. The extent to which COVID-19 worsens existing chronic diseases and causes new chronic diseases, or if it will be considered a chronic disease itself, is not yet known.[13]

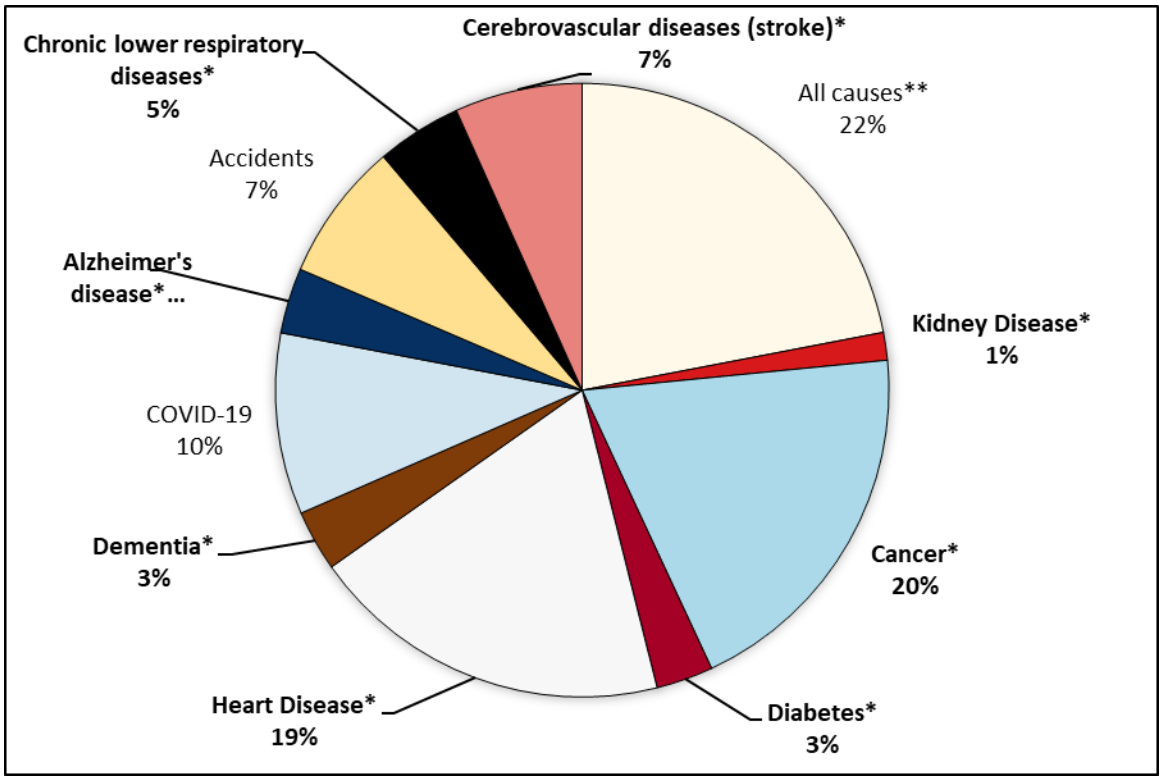
[§] Prevalence is the proportion of a population who have a specific characteristic (such as a disease or health behavior) in a given time period. Prevalence can be expressed as the number of disease cases or people exhibiting certain health behaviors per 100,000 population. Prevalence includes both new and existing cases, to capture the total number of people affected by a disease or behavior.

[**] Mortality is the proportion of a population who have died from a specific health condition in a given time period. Mortality can be expressed as a percentage or as the number of deaths due to that condition per 100,000 population.

Overall burden of chronic disease mortality and morbidity in Delaware

In 2020, chronic diseases accounted for seven of the 10 leading causes of death in Delaware, with more than 6,500 Delaware residents dying of chronic diseases (at least 61% of all deaths). Cardiovascular diseases and cancer accounted for 39% of deaths alone (Figure 1).[3]

Figure 1. Percentage of leading causes of deaths by cause in Delaware, 2020



Source: Delaware Health Statistics Center. "Delaware Vital Statistics Annual Report, Mortality, 2020." Division of Public Health, Delaware Department of Health and Social Services, n.d. https://dhss.delaware.gov/dhss/dph/hp/2020.html.

*Bolded text indicates the cause of death is considered a chronic disease.

**This includes all other causes of death not represented in the figure, including but not limited to influenza and pneumonia, chronic liver disease, assault (homicide), and intentional self-harm (suicide).

Many Delaware residents suffer from chronic diseases and 10% have multiple chronic conditions.[2] Compared to all other U.S. states, Delaware ranks in the middle for the number of individuals suffering from asthma, COPD, arthritis, and obesity. However, Delaware ranks in the bottom third for the number of individuals suffering from cancer, cardiovascular disease, diabetes, and high blood pressure. Delaware ranks in the bottom 20% of all U.S. states for the number of individuals with high cholesterol and chronic kidney disease.[2] Higher rankings indicate better health outcomes, and lower rankings indicate poorer health outcomes.

Given Delaware's high prevalence and mortality from chronic conditions, the projected increase in the burden of chronic disease nationwide, and the implications for preventing and treating chronic diseases in the wake of COVID-19, it is of utmost importance for the state to continue to monitor its chronic disease incidence, prevalence, and mortality.

Chronic Conditions

Cardiovascular Disease

Cardiovascular disease refers to a broad group of diseases including heart disease, cerebrovascular disease, and vascular disease. Cardiovascular disease is the second leading cause of death in Delaware, accounting for 19% of all deaths in 2020.[3]

Heart disease

Heart disease includes several types of heart conditions, the most common of which is **coronary heart disease**, which decreases blood flow to the heart and can cause a heart attack. Heart disease is often "silent" and not diagnosed until someone experiences a **heart attack**, **heart failure**, or an **arrhythmia** (abnormal heart rhythm).[14]

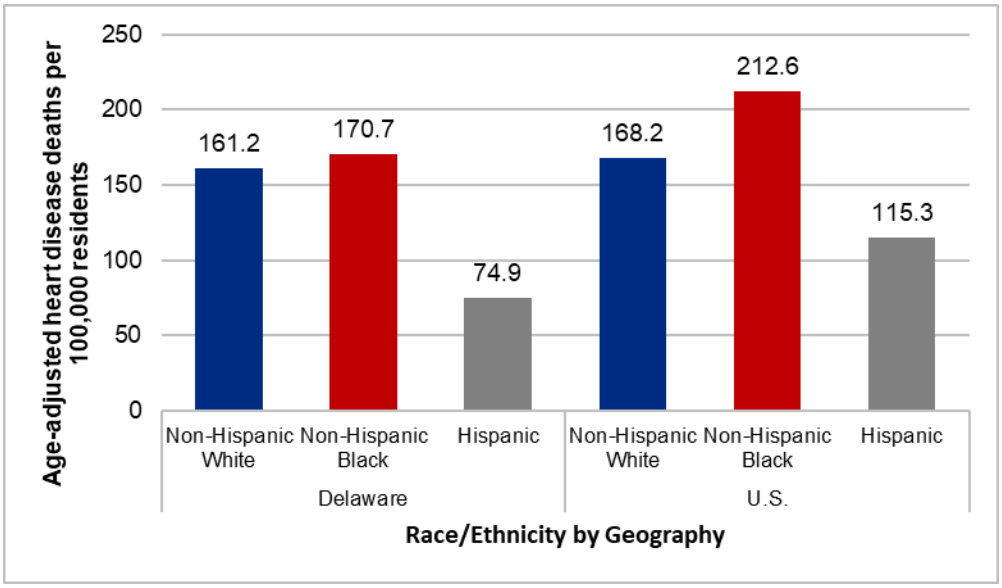
Mortality from heart disease has decreased in Delaware and nationally. Delaware's age-adjusted mortality rate is lower than in the U.S.[5]

Mortality from heart disease decreased in Delaware and in the U.S. overall.[5]

- The age-adjusted mortality rate for heart disease was 158.8 per 100,000 Delaware residents in 2016-2020. During the same time period, heart disease mortality in Delaware was lower than in the U.S. overall, where heart disease accounted for 164.8 deaths per 100,000 U.S. residents.[5]
- Mortality from heart disease in Delaware decreased from 2006-2010, when heart disease accounted for 190.3 deaths per 100,000 residents in 2006-2010 to 158.8 deaths per 100,000 residents in 2016-2020. Similarly, heart disease also decreased in the U.S. from 2010-2016, when it accounted for 190.9 deaths per 100,000 residents to 164.8 deaths per 100,000 residents in 2016-2020.[5]

In Delaware and across the U.S., non-Hispanic Black individuals have the highest mortality rate from heart disease (Figure 2). However, non-Hispanic Black Delaware residents die from heart disease at a considerably lower rate than in the U.S. overall, and the disparity between non-Hispanic White and non-Hispanic Black Delaware residents is also smaller than in the U.S. overall.[5]

Figure 2. Five-Year age-adjusted heart disease mortality rates by race/ethnicity, Delaware and U.S., 2016-2020



Source: National Vital Statistics System. "CDC WONDER Online Database – 1999-2020: Underlying Cause of Death by Bridged-Race Categories." National Center for Health Statistics, Centers for Disease Control and Prevention, 2021. http://wonder.cdc.gov/ucd-icd10.html.

The prevalence of heart disease has been consistent over the past decade.[6]

- In 2022, 4.5% of Delaware adults reported ever having coronary heart disease or angina (chest pain, a symptom of coronary heart disease), compared to the national median of 4.4%. In 2011, 3.9% of Delaware adults reported ever having either condition, compared to 4.5% in 2022. Likewise, the national median (includes all 50 states and the District of Columbia) remained stable during the same time period, fluctuating from 4.1% of U.S. adults reporting either condition in 2011 to 4.4% in 2022.[6]
- In 2022, 4.0% of Delaware adults reported ever having a heart attack, compared to the national median of 4.5%. From 2011, the prevalence of heart attack remained stable in Delaware (3.8% of adults) and nationally (4.4%).[6]

Heart disease prevalence increases with age.[6]

- In 2021, 2.5% of adults aged 18-64 in Delaware reported ever having coronary heart disease or a heart attack, compared to 8.5% of adults aged 65 or older.[6]

Cerebrovascular Disease

Cerebrovascular disease refers to all conditions related to blood flow to the brain. The most common cerebrovascular condition is **stroke**, which is a loss of blood flow to the brain that causes loss of neurological function. **Ischemic strokes** (80% of all strokes) occur when a blood vessel to the brain is blocked, usually from a blood clot. **Hemorrhagic strokes** occur when a blood vessel within the brain ruptures and are often caused by uncontrolled hypertension (high blood pressure).[15]

Mortality from stroke increased in Delaware and remains higher than in the U.S. overall.[5]

- Stroke accounted for 46.5 deaths per 100,000 Delaware residents in 2016-2020, higher than the overall U.S. rate of 37.6 deaths per 100,000 U.S. residents during the same time period.[5]
- Mortality from stroke increased in Delaware from 40.8 deaths per 100,000 residents in 2006-2010 to 46.5 deaths per 100,000 residents but decreased nationwide (41.8 deaths per 100,000 residents in 2006-2010).[5]

The prevalence of stroke remained stable in Delaware and is about the same as the national median.[6]

- In 2022, 3.8% of Delaware adults and 3.4% of U.S. adults reported ever having and surviving a stroke.[6]
- The prevalence of having and surviving a stroke has remained relatively stable over the past decade in Delaware. In 2011, 3.2% of Delaware adults reporting having and surviving a stroke, compared to 3.8% in 2022. The national median has remained relatively stable, fluctuating from 2.9% in 2011 to 3.4% in 2022.[6]

The prevalence of stroke increases with age.[6]

- In 2022, 1.9% of adults aged 18-64 in Delaware reported ever having a stroke and surviving, compared to 8.6% of adults aged 65 or older.[6]

From 2016-2020, non-Hispanic Black residents died from stroke at a higher rate than non-Hispanic White residents.[5]

- In 2016-2020, the stroke mortality rate among non-Hispanic White and non-Hispanic Black Delaware adults was 43.9 stroke deaths per 100,000 residents and 60.7 stroke deaths per 100,000 residents, respectively.[5]

Vascular Disease

Vascular disease includes any condition that affects the circulatory system (system of blood vessels). This includes conditions related to arteries, veins, and lymph vessels, as well as blood disorders that affect circulation. Common vascular disease is **atherosclerosis**, aortic aneurysm and other aneurysms, and peripheral artery disease.[16]

Mortality from vascular disease has remained stable in Delaware but decreased in the U.S. overall.[5]

- In 2016-2020, vascular disease accounted for 6.7 deaths per 100,000 Delaware residents, about the same as the U.S. rate of 6.2 deaths per 100,000 residents.[5]
- Mortality from vascular disease has remained stable in Delaware. In 2006-2010, vascular disease accounted for 7.0 deaths per 100,000 residents, compared to 6.7 deaths per 100,000 residents in 2016-2020. However, vascular disease mortality decreased nationally. In 2006-2010, vascular diseases accounted for 8.9 deaths per 100,000 U.S. residents, compared to 6.2 vascular disease deaths per 100,000 U.S. residents in 2016-2020.[5]

Hypertension and High Cholesterol

Cardiovascular disease shares many common risk factors across the related conditions, namely **hypertension** and **high cholesterol**.[14]

Hypertension means the force of blood (**blood pressure**) pushing against the artery walls is consistently too high, causing the heart to work harder to pump blood.[17] **Cholesterol** is a waxy substance found in the blood, which the body uses to build healthy cells. It is normal and healthy to have certain levels of cholesterol in the blood, but high levels increase the risk of cardiovascular disease.[18]

Hypertension remained stable among Delaware adults.[6]

- In 2021, 36.2% of Delaware adults reported ever being told they had hypertension, compared a national median of 32.4%.[6]
- The prevalence of hypertension remained stable in Delaware from over the past decade. In 2011, 34.8% of Delaware adults reported ever being told they had hypertension, compared to 36.2% in 2021. The national median for hypertension prevalence increased slightly, up from 30.8% in 2011 to 32.4% in 2021.[6]

Mortality from essential hypertension and hypertensive renal disease remained stable in Delaware but increased in the U.S.[5]

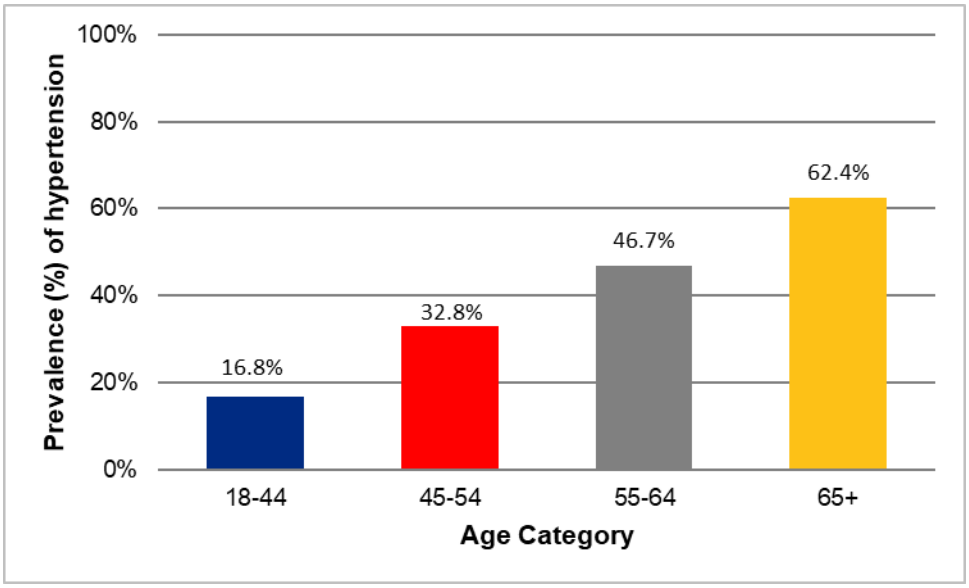
- Mortality from essential (primary) hypertension and hypertensive renal disease was 5.9 deaths per 100,000 Delaware residents in 2016-2020, compared to 9.1 deaths per 100,000 U.S. residents during the same period.[5]
- Mortality from essential (primary) hypertension and hypertensive renal disease remained stable in Delaware from 2006-2010 (5.4 deaths per 100,000 residents) to 2016-2020 (5.9 deaths per 100,000). Mortality from essential hypertension increased in the U.S. from 7.9 deaths per 100,000 residents in 2006-2010 to 9.1. deaths per 100,000 residents in 2016-2020.[5]

Non-Hispanic Black Delaware residents die from vascular disease at rates almost twice as high as Non-Hispanic White Delaware residents.[5]

- In 2016-2020, the mortality rate from essential (primary) hypertension and hypertensive renal disease among non-Hispanic White and non-Hispanic Black Delaware adults was 5.3 deaths per 100,000 residents and 9.6 deaths per 100,000 residents, respectively. [5]

Prevalence of hypertension increases dramatically with age (Figure 3).[6]

Figure 3. Prevalence (%) of hypertension in adults by age group, Delaware, 2021



Source: Division of Population Health. "BRFSS Prevalence & Trends Data." National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2021. https://www.cdc.gov/brfss/brfssprevalence/.

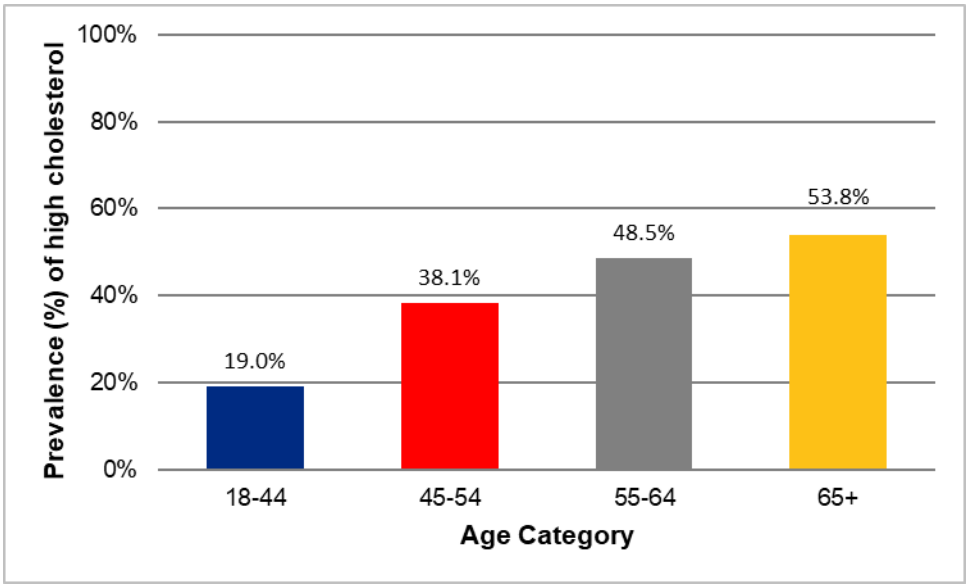
*The Behavioral Risk Factor Surveillance System survey asks respondents to report their age. Publicly available data are typically presented in five-year age groupings (such as 25-29, 30-34, etc.). Due to certain age groupings having a small number of respondents, some groups have been combined in this figure.

High cholesterol remained relatively stable among Delaware adults.[6]

- In 2021, 37.7% of Delaware adults reported ever being told they had high cholesterol, compared to the national median of 35.7%.[6]
- The prevalence of high cholesterol has remained relatively stable over the past decade. In 2011, 40.6% of Delaware adults reported having high cholesterol, compared to 37.7% in 2021. The national median for high cholesterol prevalence decreased slightly from 38.4% in 2011 to 35.7% in 2021.[6]

Prevalence of high cholesterol increases dramatically with age (Figure 4).[6]

Figure 4. Prevalence (%) of high cholesterol in adults by age group, Delaware, 2021



Source: Division of Population Health. "BRFSS Prevalence & Trends Data." National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2021. https://www.cdc.gov/brfss/brfssprevalence/.

*The Behavioral Risk Factor Surveillance System survey asks respondents to report their age. Publicly available data are typically presented in five-year age groupings (such as 25-29, 30-34, etc.). Due to certain age groupings having a small number of respondents, some have been combined in this figure.

Cancer

Cancer is a disease in which some of the body's cells grow uncontrollably and spread to other parts of the body. When this happens, tumors can form, which can be cancerous (malignant) or non-cancerous (benign). Cancerous tumors spread into nearby tissues and can travel to other parts of the body to form new tumors, a process called metastasis. Cancerous, metastatic tumors can cause life-threatening symptoms and severely damage how the body functions, sometimes causing death.[19]

Historically, Delaware's cancer incidence* and mortality rates have been higher than in the U.S. overall. To address the cancer burden, the state formed the Delaware Cancer Consortium in 2001 to make concerted efforts to improve cancer screening rates and reduce tobacco use and exposure to secondhand smoke. Cancer incidence and mortality in Delaware decreased over the last two decades, although both measures remain higher than the national rate.[4]

In 2016-2020†, Delaware had the 15th highest cancer mortality rate in the U.S. In the 1990s, Delaware had the second highest cancer mortality rate, showing the state made considerable progress in the last two decades despite still having more cancer deaths than the national average.[4]

All-site cancer‡

Delaware's cancer mortality rate remains higher than the U.S. overall.[4]

- In 2016-2020, cancer accounted for 156.8 deaths per 100,000 Delaware residents. Mortality from cancer was statistically significantly higher in Delaware compared to the U.S., where cancer accounted for 149.4 deaths per 100,000 U.S. residents during the same period.[4]

Delaware's cancer mortality rate decreased substantially over time.[4]

- Between 2006 and 2020, mortality rates for all-site cancer decreased an average of 1.8% per year in Delaware and decreased an average of 1.7% per year in the U.S. The decrease was consistent in Delaware between 2006 and 2020, but the mortality rates in the U.S. had a greater average decrease of 2.0% between 2015 and 2020 compared to the decrease between 2006 and 2015 (1.5%).[4]

* Incidence captures new cases or diagnoses of a disease, as opposed to prevalence, which captures all cases of a disease over time. It is helpful to look at incidence rates for cancer, rather than prevalence, because cancer can go into remission (meaning symptoms are significantly reduced or disappear entirely), and the same individual can receive multiple new cancer diagnoses over time. The cancer incidence rate is the number of new cases of any type of cancer occurring in a population during a specified time period, expressed as the number of new cancer cases per 100,000 population.

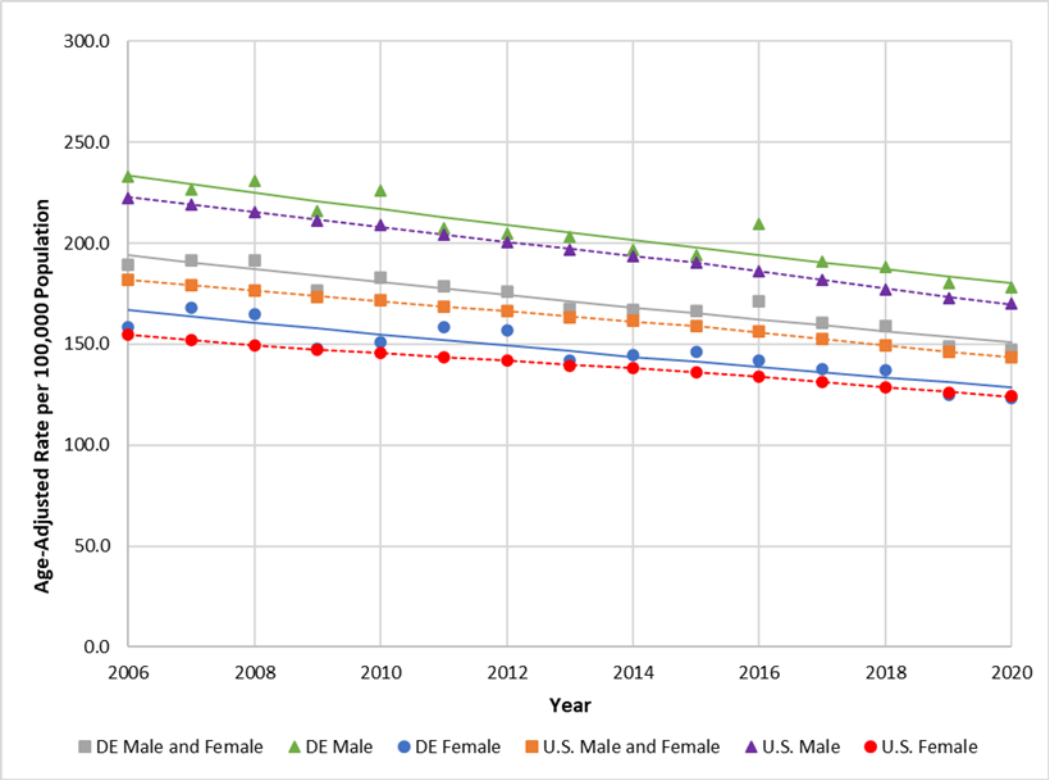
† Due to Delaware's small population base, cancer mortality and incidence rates are calculated using five-year calendar year groupings.

‡ All-site cancer refers to all types of malignant cancer, combined.

Cancer mortality decreased for non-Hispanic White and non-Hispanic Black Delaware residents and remained stable for Hispanic residents.[4]

- Non-Hispanic Black male Delaware residents experienced the greatest decreases in cancer mortality out of all race/ethnicity and sex subgroups. From 2006 to 2020, cancer mortality decreased an average of 2.1% per year for non-Hispanic Black male residents.[4]

Figure 5. Age-adjusted cancer mortality rate by sex, U.S. and Delaware, 2006-2020



Source: Comprehensive Cancer Control Program. "Cancer Incidence and Mortality in Delaware, 2016–2020." Division of Public Health, Delaware Department of Health and Social Services, October 2023. https://www.dhss.delaware.gov/dph/dpc/files/20162020IMFINALAPPROVED.pdf
Rates are per 100,000 of population age-adjusted to the 2000 U.S. standard population and are calculated using modified U.S. Census populations available from NCI (https://seer.cancer.gov/popdata/).

In 2016-2020, Delaware had the 21st highest cancer incidence rate in the U.S.[4]

Delaware's cancer incidence is higher than the U.S. overall but decreased over time and more quickly than the U.S. overall.[4]

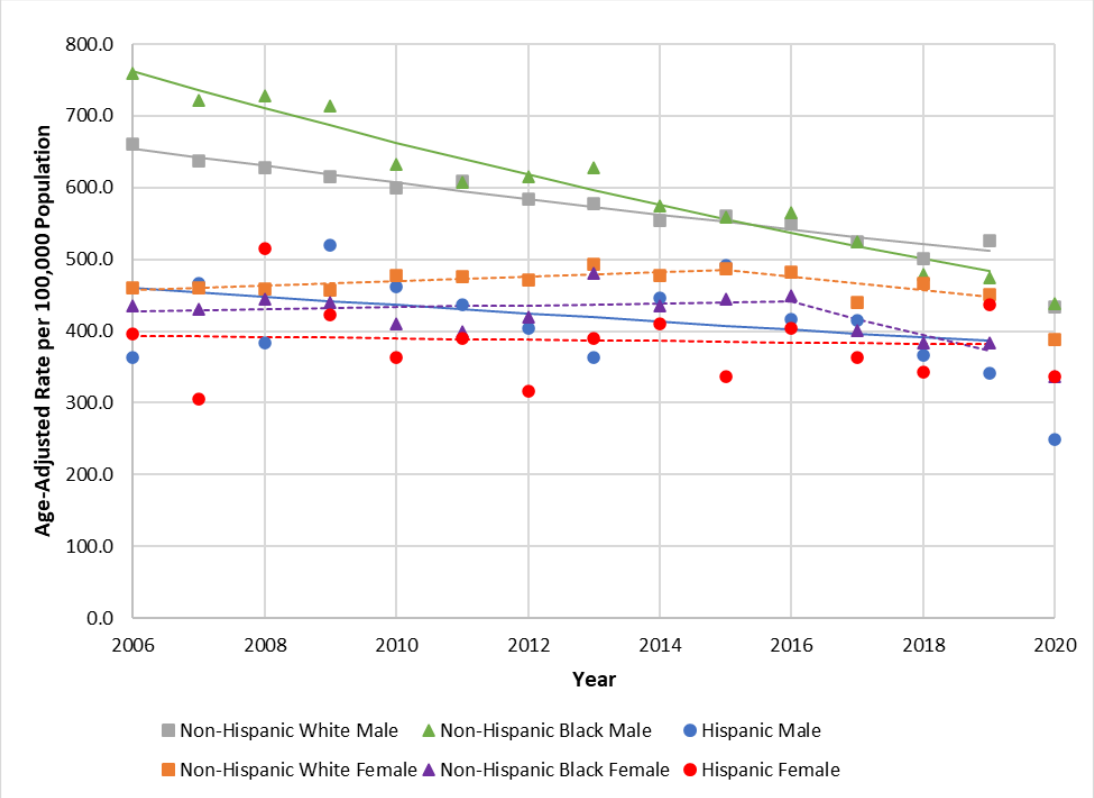
- In 2016-2020, Delaware's cancer incidence rate of 457.6 new cancer cases per 100,000 residents was significantly higher than the U.S. rate of 442.2 new cancer cases per 100,000 residents.[4]
- Comparing age-adjusted all-site cancer incidence rates between the U.S. and Delaware between 2006 and 2019*, incidence rates for all-site cancer decreased an average of 1.1% per year in Delaware and an average of 0.6% per year in the U.S.[4] The COVID-19 pandemic resulted in delays and reductions in cancer screening and diagnosis, which subsequently

led to a decline in 2020 incidence counts and rates that was considered an anomaly. Since including 2020 rates would bias the estimates of trends over time, 2020 rates were not included in trend analysis.

Cancer incidence decreased for all racial/ethnic subgroups in Delaware.[4]

- Non-Hispanic Black male Delaware residents experienced the greatest decreases in cancer incidence out of all race/ethnicity and sex subgroups. From 2006 to 2019, cancer incidence for non-Hispanic Black male residents decreased an average of 2.1% per year (Figure 6).[4]

Figure 6. Age-adjusted cancer incidence by sex and race/ethnicity, Delaware, 2006-2020*



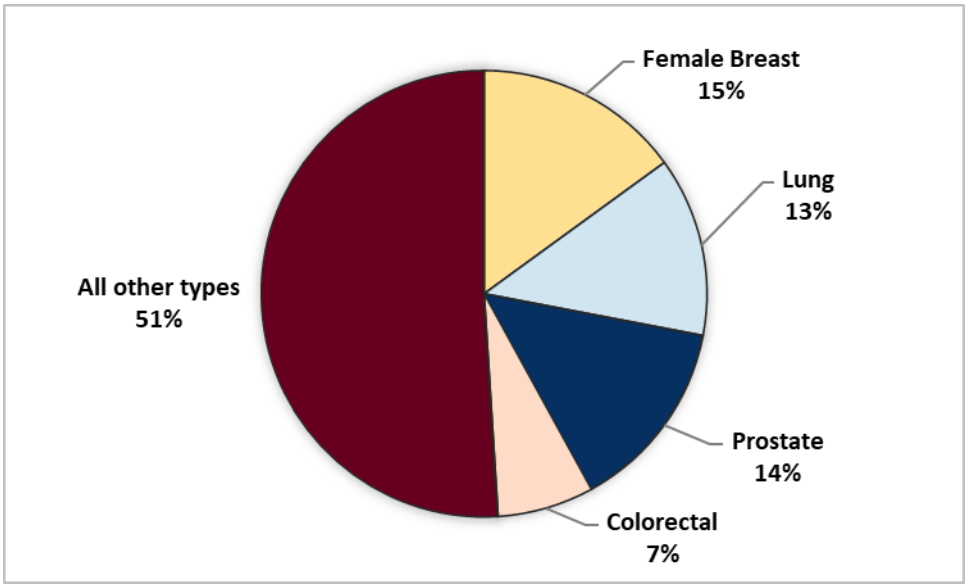
Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Cancer Registry, 2023
Rates are per 100,000 of population using US Census estimates and age-adjusted to the 2000 U.S. standard population and are calculated using modified U.S. Census populations available from NCI (https://seer.cancer.gov/popdata/).
*Incidence rates for year 2020 are plotted but were not used for the analysis of trends since 2020 was an anomaly and would bias estimates.

"Big four" cancers

The most common types of cancer in the U.S. and in Delaware are breast cancer, lung cancer, prostate cancer, and colorectal cancer (the "big four").[20]

In 2016-2020, the "big four" cancers accounted for 49% of all cancer diagnoses in Delaware (Figure 7).[4]

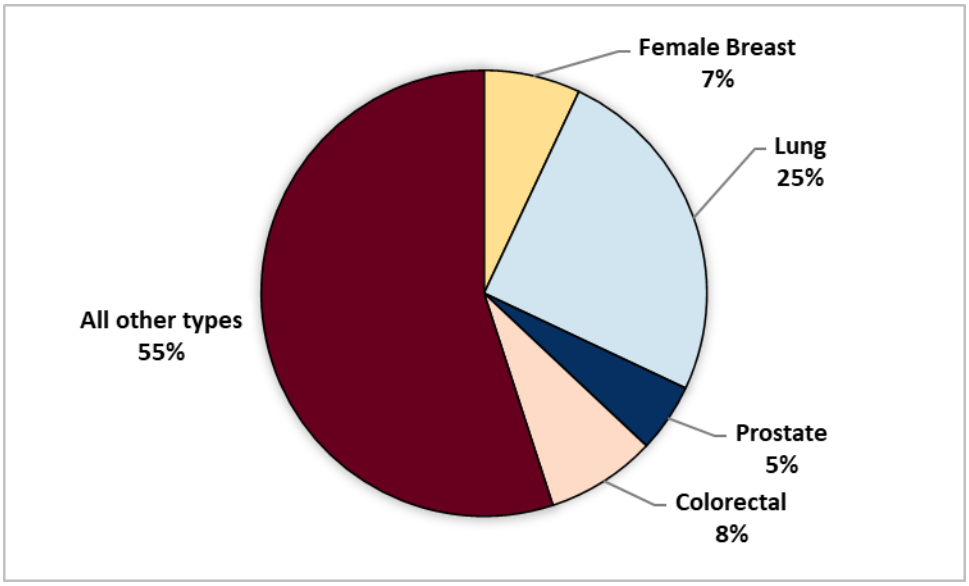
Figure 7. Percentage of new cancer diagnoses by type of cancer, Delaware, 2016-2020



Source: Comprehensive Cancer Control Program. "Cancer Incidence and Mortality in Delaware, 2016-2020." Division of Public Health, Delaware Department of Health and Social Services, October 2023. https://www.dhss.delaware.gov/dph/dpc/files/20162020IMFINALAPPROVED.pdf.

In 2016-2020, the "big four" cancers accounted for 45% of all cancer deaths in Delaware (Figure 8).[4]

Figure 8. Percentage of cancer deaths by type of cancer, Delaware 2016-2020



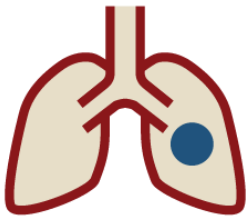
Source: Comprehensive Cancer Control Program. "Cancer Incidence and Mortality in Delaware, 2016-2020." Division of Public Health, Delaware Department of Health and Social Services, October 2023. https://www.dhss.delaware.gov/dph/dpc/files/20162020IMFINALAPPROVED.pdf.

Mortality and incidence for most of the "big four" cancers remain higher in Delaware than in the U.S. overall. Table 2 presents mortality and incidence data for Delaware and the U.S. overall and by race/ethnicity.

Table 2. "Big Four" Cancer Mortality and Incidence Rates, Delaware vs. U.S. per 100,000 population, 2016-2020

	Mortality				Incidence			
	Overall	Non-Hispanic White	Non-Hispanic Black	Hispanic	Overall	Non-Hispanic White	Non-Hispanic Black	Hispanic
Lung cancer								
Delaware	38.4	40.5	37.1	18.1	56.9	61.3	49.8	26.5
U.S.	35.0	38.0	37.2	15.4	54.2	58.7	55.7	27.6
Female breast cancer								
Delaware	20.7	20.3	26.8	-	134.5	137.4	135.3	109.5
U.S.	19.6	19.7	27.6	13.7	126.9	133.0	126.7	95.5
Prostate cancer								
Delaware	17.6	15.7	32.6	-	125.0	107.4	182.2	84.8
U.S.	18.8	17.8	37.5	15.3	110.2	104.5	175.2	83.5
Colorectal cancer								
Delaware	12.7	12.8	14.9	8.1	34.6	34.9	35.7	32.9
U.S.	13.1	13.1	17.6	10.7	36.6	36.8	41.3	32.0

Sources: Comprehensive Cancer Control Program. "Delaware Cancer Mortality Rates per 100,000 population by site and race, 2016-2020." and "Delaware Cancer Incidence Rates per 100,000 population by site and race, 2016-2020." Division of Public Health, Delaware Health and Social Services, October 2023.
https://dhss.delaware.gov/dph/dpc/files/20162020ComprehensiveTablesUpdated.pdf



Lung cancer mortality and incidence are higher in Delaware than in the U.S. overall.[4] In Delaware, both mortality and incidence decreased over time.[21]

- In 2016-2020, both lung cancer incidence and mortality rates were significantly higher in Delaware compared to in the U.S.[4]
- From 2006 to 2019, lung cancer incidence rates decreased an average of 2.6% per year in Delaware and decreased an average of 1.9% per year in the U.S. When examining shorter periods across these years, the lung cancer incidence rates in Delaware were stable between 2006 and 2015 but experienced a significant decrease of 5.5% per year between 2015 and 2019, suggesting recent progress towards lowering lung cancer.[21]
- From 2006 to 2019, lung cancer incidence rates decreased an average of 2.2% per year among non-Hispanic White Delaware residents and decreased an average of 3.3% per year among non-Hispanic Black Delaware residents but remained stable for Hispanic Delaware residents. When examining shorter periods across these years, the lung cancer incidence rates among non-Hispanic Black Delaware residents were stable from 2006 to 2016 but experienced a significant decrease of 14.5% per year from 2016 to 2019, suggesting recent progress towards lowering lung cancer incidence in this group.[21]

- From 2006 to 2020, lung cancer mortality rates decreased an average of 3.7% per year in Delaware and decreased an average of 3.3% per year in the U.S. When examining shorter periods across these years, the lung cancer mortality rates in Delaware decreased an average of 2.5% per year from 2006 to 2015 but experienced a larger decrease of 6.3% per year from 2015 to 2020. Similarly in the U.S., more recent periods have shown larger decreases in lung cancer mortality rates, with an average decrease of 2.3% per year from 2006 to 2012, 3.4% per year from 2012 to 2015, and 4.8% per year from 2015 to 2020.[22]
- From 2006 to 2020, lung cancer mortality rates decreased an average of 3.5% per year among both non-Hispanic White Delaware residents and among non-Hispanic Black Delaware residents but remained stable for Hispanic Delaware residents.[22]

Female breast cancer incidence is higher in Delaware than in the U.S. overall.[4] In Delaware, mortality decreased, but incidence remained stable over time.[21]

- In 2016-2020, female breast cancer incidence was significantly higher in Delaware compared to in the U.S. For mortality, there was no significant difference between the female breast cancer mortality rate in Delaware compared to the U.S. overall. [4]
- From 2006 to 2019, breast cancer incidence rates were stable in Delaware while rates increased an average of 0.4% per year in the U.S. [21]
- From 2006 to 2019, breast cancer incidence rates increased an average of 1.2% per year among non-Hispanic White females and remained stable for non-Hispanic Black females and Hispanic females in Delaware. [21]
- From 2006 to 2020, breast cancer mortality rates decreased an average of 1.0% per year in Delaware and an average of 1.4% per year in the U.S. [22]
- From 2006 to 2020, breast cancer mortality rates decreased an average of 1.4% per year among non-Hispanic White females and remained stable for non-Hispanic Black females in Delaware. The trend among Delaware Hispanic females could not be calculated due to small numbers.[22]

There was no difference in prostate cancer mortality in Delaware than in the U.S., but incidence is higher.[4] In Delaware, both mortality and incidence decreased over time.[21]

- In 2016- 2020, prostate cancer incidence was significantly higher in Delaware compared to in the U.S. For mortality, there was no significant difference between the prostate cancer mortality rate in Delaware compared to the U.S. overall.[4]
- From 2006 to 2019, prostate cancer incidence rates decreased an average of 4.2% per year in Delaware and decreased an average of 3.2% per year in the U.S. When examining shorter periods across these years, the prostate cancer incidence rates in Delaware decreased an average of 6.6% per year from 2006 to 2014 but remained stable from 2014 to 2019. In the U.S., there was a similar decrease in prostate cancer incidence rates at an average of 6.0% per year from 2006 to 2014, but from 2014 to 2019 prostate cancer incidence rates began to increase at an average of 2.1% per year.[21]
- From 2006 to 2019, prostate cancer incidence rates decreased an average of 4.8% per year among non-Hispanic White males, decreased an average of 5.0% per year among non-Hispanic Black males, and decreased an average of 5.1% per year among Hispanic males. When examining shorter periods across these years, the prostate cancer incidence rates among non-Hispanic White Delaware males decreased an average of 6.5% per year from 2006 to 2015 but remained stable from 2015 to 2019.[21]
- From 2006 to 2020, prostate cancer mortality rates decreased an average of 2.8% per year in Delaware and decreased an average of 2.1% per year in the U.S. When examining shorter periods across these years, the prostate cancer incidence rates in the U.S. decreased an average of 3.4% per year from 2006 to 2013 but remained stable from 2013 to 2020.[22]
- From 2006 to 2020, prostate cancer mortality rates decreased an average of 2.9% per year among non-Hispanic White males and decreased an average of 3.3% per year among non-Hispanic Black males in Delaware. The trend among Delaware Hispanic males could not be calculated due to small numbers.[22]

Colorectal cancer mortality and incidence were similar in Delaware than in the U.S. overall.[4] In Delaware, both mortality and incidence decreased over time.[21]

- In 2016-2020 for both colorectal cancer incidence and mortality rates, there was no significant difference in rates in Delaware compared to in the U.S. overall.[4]
- From 2006 to 2019, colorectal cancer incidence rates decreased an average of 2.8% per year in Delaware and an average of 2.1% per year in the U.S. When examining shorter periods across these years, the colorectal cancer incidence rates in Delaware decreased an average of 6.6% per year from 2006 to 2012, increased an average of 3.2% per year from 2012 and 2016, and returned to a decreasing trend with an average decrease of 6.3% per year from 2016 and 2019. In the U.S., there was no switch between decreasing and increasing trends as was observed in Delaware, but there was a higher average decrease of 3.5% per year from 2006 to 2011 before lowering to an average decrease of 1.2% per year from 2011 to 2019.[21]
- From 2006 to 2019, colorectal cancer incidence rates decreased an average of 2.6% per year among non-Hispanic White Delaware residents and decreased an average of 3.2% per year among non-Hispanic Black Delaware residents but remained stable for Hispanic Delaware residents. When examining shorter periods across these years, colorectal cancer incidence trends among non-Hispanic White and non-Hispanic Black Delaware residents were similar to the overall trends in Delaware. Both populations experienced periods of increasing trends (from 2013 to 2016 for non-Hispanic White and from 2011 to 2015 for non-Hispanic Black Delaware residents) in between periods of decreasing trends for colorectal cancer incidence rates.[21]
- From 2006 to 2020, colorectal cancer mortality rates decreased an average of 2.7% per year in Delaware while rates decreased an average of 2.2% per year in the U.S. When examining shorter periods across these years, the colorectal cancer mortality rates in the U.S. decreased an average of 2.8% per year from 2006 to 2011 before lowering to an average of 1.9% per year from 2011 to 2020.[22]
- From 2006 to 2020, colorectal cancer mortality rates decreased an average of 2.7% per year among non-Hispanic White Delaware residents and remained stable for non-Hispanic Black and Hispanic Delaware residents.[22]

Chronic Lower Respiratory Disease

Chronic lower respiratory disease affects the lungs and airways, and it includes **chronic obstructive pulmonary disease** (sometimes referred to as **emphysema** or **chronic bronchitis**) and **asthma**. Symptoms include difficulty breathing, coughing, and wheezing. Chronic lower respiratory disease cannot be cured, but treatment can reduce symptoms and manage disease progression.[23]

The mortality rate of chronic lower respiratory disease in Delaware is about the same as the U.S. overall but has declined over time.[5]

- Chronic lower respiratory disease was responsible for 38.4 deaths per 100,000 Delaware residents in 2016-2020, in comparison to 39.1 deaths per 100,000 in the U.S. overall.[5]
- In Delaware, mortality from chronic lower respiratory disease decreased from 43.0 deaths per 100,000 Delaware residents in 2006-2010 to 38.4 deaths per 100,000 Delaware residents in 2016-2020. Similarly, it decreased nationally from 42.4 deaths per 100,000 U.S. residents in 2006-2010 to 39.1 deaths per 100,000 U.S. residents.[5]

Chronic Obstructive Pulmonary Disease

The most common cause of **chronic obstructive pulmonary disease (COPD)** is smoking, which accounts for as many as 80% of COPD-related deaths.[24] Burning cigarettes release toxins in their smoke that weaken the lungs against infections, narrow and cause swelling in air passages, and damage air sacs, which contribute to COPD.[25] The best way to prevent COPD is to stop smoking or to never start.[26]

Other risk factors for COPD include exposure to secondhand smoke, dusts, fumes, or chemicals (often in the workplace) and frequent respiratory infections or asthma in childhood.[26]

Smoking and exposure to air pollution are more common in individuals with low socioeconomic status, a group which disproportionately includes Black and Hispanic individuals.[27,28]

The prevalence of COPD increased among Delaware adults.[6]

- In 2022, 7.0% of Delaware adults reported ever being told they had COPD, compared to a nation median of 6.9%.[6]
- COPD prevalence among Delaware adults in 2022 was higher compared to 2011. In 2011, 5.2% of Delaware adults reported ever being diagnosed with COPD, compared to 7.0% in 2022. However, the prevalence of COPD fluctuated over that 10-year period. From 2011 to 2021, COPD prevalence was highest among Delaware adults in 2019 at 8.5%. In comparison, the national prevalence of COPD among adults also fluctuated during the same period.[6]

Asthma

Asthma refers to the inflammation and narrowing of the small airways in the lungs.[29] Although it is difficult to identify a single cause of asthma, there are several risk factors of developing asthma, including exposure to air pollution, house dust mites, molds, and other environmental irritants; smoking or exposure to tobacco smoke; viral respiratory infections early in life; overweight/obesity; other family members with asthma; and low birth weight and prematurity.[29]

The prevalence for asthma remained stable among Delaware adults.[6]

- In 2022, 15.4% of Delaware adults had ever been told they had asthma, compared to a national median of 15.7%.[6]
- In 2011, 14.0% of Delaware adults had ever been told they had asthma, compared to 15.4% in 2022. The national median has followed roughly a similar pattern. In 2011, the national median for asthma was 13.6% compared to 15.7% in 2022.[6]

Diabetes

Diabetes is a chronic condition that affects how the body processes food for energy and relates to the body's ability to produce and respond to insulin. There are two types of chronic diabetes. **Type 1** is an autoimmune reaction that causes the body to destroy the cells in the pancreas that produce insulin, which allows the body's cells to use the sugar in the bloodstream.[30] **Type 2** develops when the body's cells no longer appropriately respond to insulin.[31] In both cases, the blood sugar rises and is too high.

Type 1 diabetes usually develops in children and young adults, but it can develop at any age.[32] Risk factors for type 1 diabetes include a family history of diabetes.[32]

Type 2 diabetes accounts for 90 to 95% of diabetes cases and usually develops in adults over 45, but younger adults and children in the U.S. have increasingly developed type 2 diabetes.[31] Risk factors for type 2 diabetes include prediabetes (elevated blood sugar below the level of type 2 diabetes), being overweight or obese, being physically active fewer than three times a week, family history of type 2 diabetes, and gestational diabetes (diabetes while pregnant).[32]

Diabetes cannot be cured, but type 2 diabetes can be prevented, delayed, or managed through a healthy lifestyle, including losing weight, regular physical activity, eating healthy foods, and avoiding sweetened beverages.[33]

Mortality from diabetes in Delaware is lower than the U.S. but both trends have remained stable.[5]

- In 2016-2020, the mortality rate from diabetes was 19.9 deaths per 100,000 Delaware residents. National diabetes mortality was similar, causing 22.1 deaths per 100,000 U.S. residents in 2016-2020.[5]
- Mortality from diabetes in Delaware remained stable. In 2006-2010 diabetes mortality was 21.3 deaths per 100,000 residents compared to 2016-2020 diabetes mortality was 19.9 deaths per 100,000 residents. Nationally, mortality from diabetes also remained stable in the U.S. population (22.0 deaths per 100,000 residents) from 2006-2010 to 2016-2020.[5]

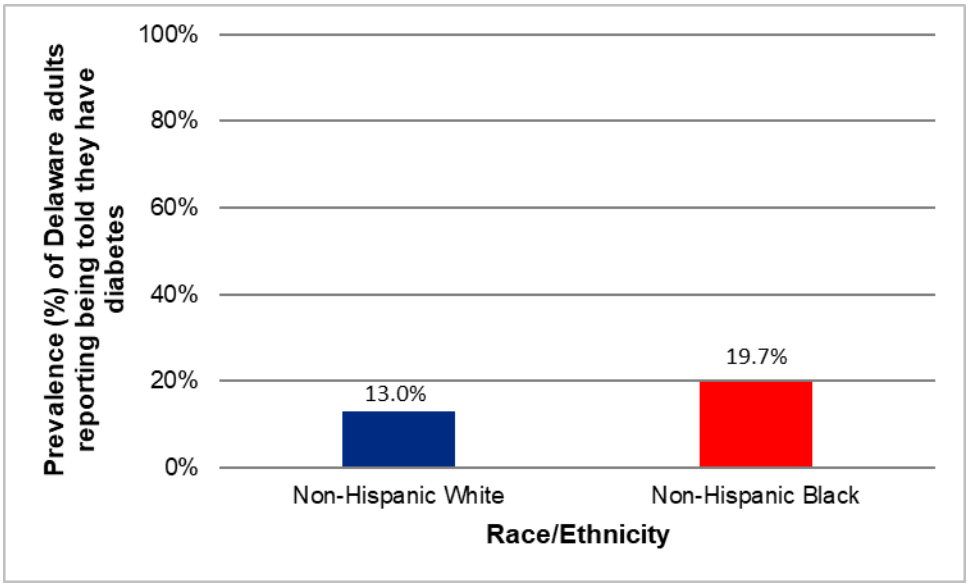
The prevalence of diabetes among Delaware adults increased.[6]

- In 2022, 13.9% of Delaware adults aged 18 and older had ever been told they had diabetes, compared to a national median of 11.5%.[6]
- The prevalence of diabetes among Delaware adults increased from 9.7% in 2011 to 13.9% in 2022. The diabetes national median also increased from 9.5% to 11.5% in 2022.[6]

Non-Hispanic Black Delaware adults had higher prevalence of and mortality from diabetes than non-Hispanic White adults.[5,6]

- In 2016-2020, diabetes was responsible for close to twice as many deaths among non-Hispanic Black Delaware residents compared to non-Hispanic White residents.* In 2016-2020, the age-adjusted diabetes mortality in Delaware was 34.3 deaths per 100,000 non-Hispanic Black residents, compared to 17.2 among non-Hispanic White residents.[5]
- In 2022, 19.7% of non-Hispanic Black adults reported being told they have diabetes, compared to 13.0% of non-Hispanic White adults (Figure 9).[6]

Figure 9. Diabetes prevalence among adults by race/ethnicity, Delaware, 2022



Source: Division of Population Health. "BRFSS Prevalence & Trends Data." National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2022. https://www.cdc.gov/brfss/brfssprevalence/.

* The age-adjusted death rate was suppressed for Hispanics due to small cell size.

Risk Factors

Physical Activity, Nutrition, and Obesity

Physical activity, nutrition, and obesity are important risk factors that influence the onset of chronic diseases. Physical inactivity, poor diet, and overweight/obesity greatly increase an individual's risk for developing one or more chronic diseases and can all lead to premature death and disability. Improving healthy behaviors, such as increasing physical activity levels, eating a well-balanced diet, and maintaining a healthy weight, can reduce risk for chronic disease at any age, even if an individual makes small to moderate changes in their behaviors.

Physical activity

Physical activity helps reduce and prevent chronic diseases, including heart disease, certain types of cancer, obesity, and diabetes. The many benefits to physical activity include reducing risk for depression, high blood pressure, and stroke; improving aerobic and muscular fitness, bone health, mental health, cognitive function, and sleep; and extending years of active life.[34]

There are different physical activity guidelines for different age groups:[35]

- Children and adolescents (6-17 years): 60 minutes or more of moderate-to-vigorous intensity physical activity each day (like running or soccer), muscle-strengthening activity (like climbing or push-ups), and bone-strengthening activity (like gymnastics or jumping rope)
- Adults (18-64 years): at least 150 minutes a week of moderate intensity activity (such as brisk walking) and at least two days a week of muscle-strengthening activities
- Older adults (65 and older): at least 150 minutes a week of moderate intensity activity, at least two days a week of muscle-strengthening activities, and activities to improve balance (for example, standing on one foot).

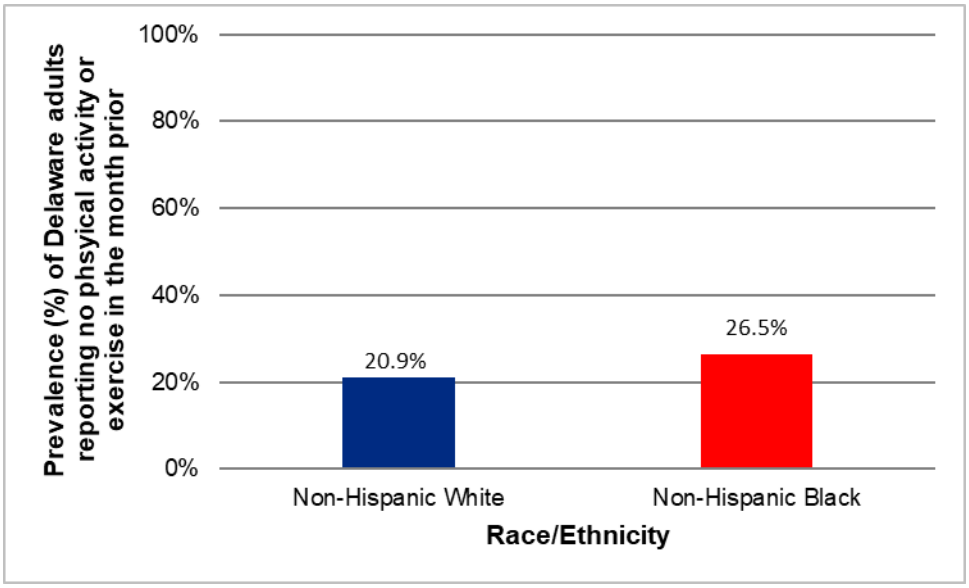
Getting enough physical activity could prevent one in 10 premature deaths, but few U.S. adults get the physical activity they need.[34] Although levels of physical inactivity are high throughout the U.S., individuals living in under-resourced communities, which disproportionately include people of color, tend to have the highest rates of inactivity. An important factor that influences physical activity in these populations is lack of access to safe, convenient places to be physically active, such as community parks, sidewalks, or trails.[36]

Many Delaware adults are not getting enough physical activity.[6]

- In 2022, 23.5% of Delaware adults reported they did not participate in any physical activity or exercise in the last month, compared to a national median of 23.4%.[6]
- Physical inactivity levels among Delaware adults remained stable from 2011 (26.2%) to 2022 (23.5%) in Delaware. The national median for physical inactivity among U.S. adults remained relatively stable, fluctuating from 26.2% in 2011 to 23.4% in 2022.[6]

In 2022, 20.9% of non-Hispanic White adults and 26.5% of non-Hispanic Black adults reported being physically inactive in the past month (Figure 10). This difference was not statistically significant.

Figure 10. Prevalence (%) of adults reporting no physical activity or exercise in the month prior by race/ethnicity, Delaware, 2022



Source: Division of Population Health. "BRFSS Prevalence & Trends Data." National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2022. https://www.cdc.gov/brfss/brfssprevalence/.

Nutrition

Adults with a **healthy diet** live longer; have a lower risk of heart disease, certain cancers, type 2 diabetes, and obesity; and can better manage chronic diseases and avoid complications.

A healthy diet includes:[37]

- Fruits, vegetables, whole grains, and fat-free or low-fat milk products
- A variety of protein foods (such as seafood, lean meats and poultry, eggs, legumes, soy products, nuts, and seeds)
- Low amounts of added sugars, sodium, saturated fats, trans fats, and cholesterol

However, most Americans need to adjust their eating patterns to consume less added sugar, saturated fat, and sodium.[38] Additionally, many Americans frequently drink sugar-sweetened beverages, which is associated with several chronic health conditions, including heart disease, type 2 diabetes, obesity, kidney diseases, and more.[39]

One of the most important factors that influences the ability to maintain a healthy diet is access to affordable, healthy foods. Many communities with a high percentage of people of color or with lower incomes have trouble in accessing healthy food, whether due to a lack of grocery stores offering healthy food options nearby or high prices. Nationwide, the probability of food insecurity or living in food deserts (areas without easy access to affordable or high-quality fresh food) are highest among Black, Hispanic, and Native American households.[40]

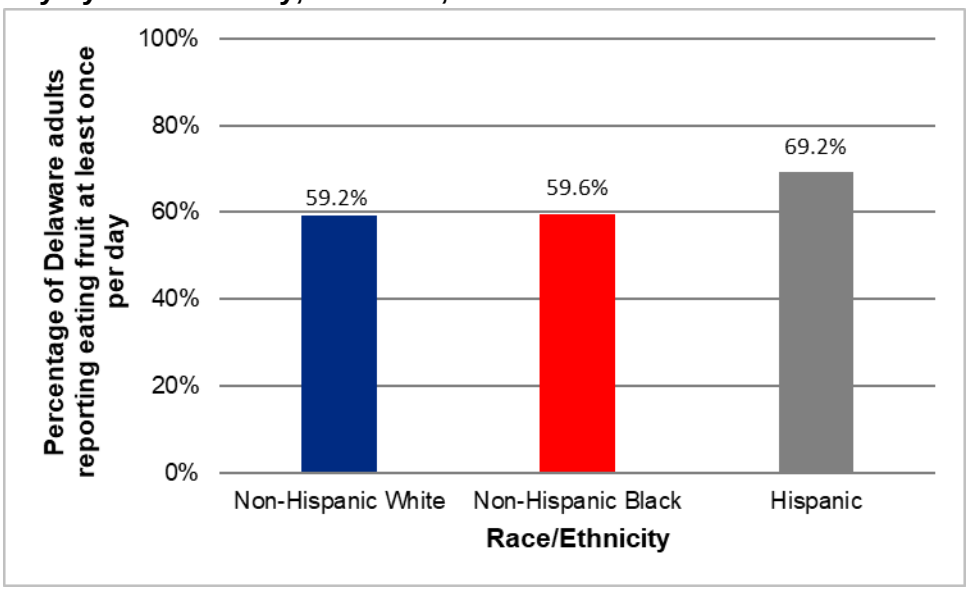
Many Delaware adults are not eating enough fruits or vegetables.[6]

- In 2021, 39.7% of Delaware adults reported consuming fruit less than once per day.[6]
- In 2021, 20.5% of Delaware adults reported consuming vegetables less than once per day.[6]

More than half of Delaware adults regularly drink sugar-sweetened beverages.[41]
In 2017, 58.8% of Delaware adults reported drinking sugar-sweetened soda at least once a day in the past 30 days. In the past 30 days, 50.8% of Delaware adults reported drinking sugar-sweetened fruit drinks, tea, or sports or energy drinks at least once a day.[41] Delaware's BRFSS last asked about consumption of sugar-sweetened beverages in 2017.

Non-Hispanic White and non-Hispanic Black Delaware adults reported eating fewer fruits than Hispanic Delaware adults (Figure 11). The difference between non-Hispanic White adults and Hispanic adults was statistically significant.[6]

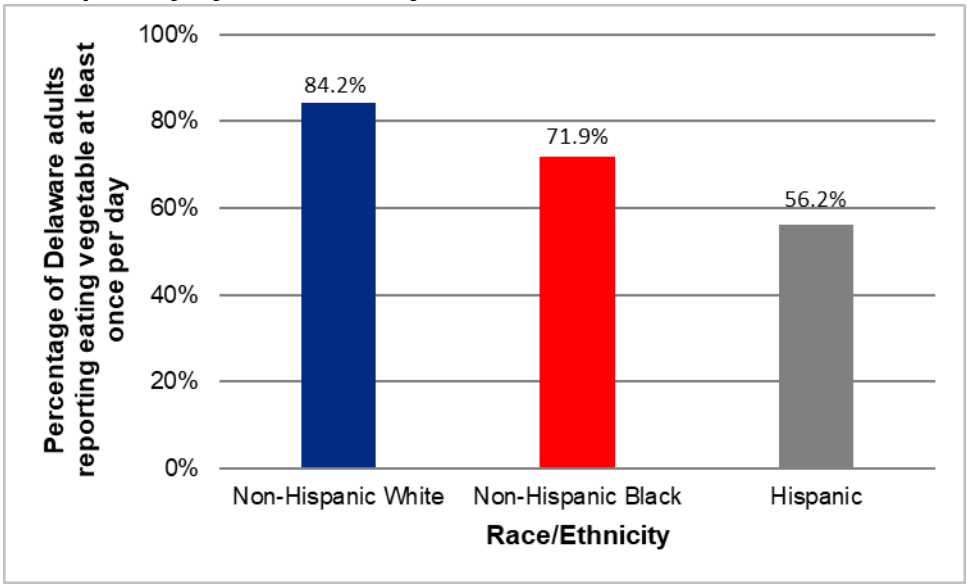
Figure 11. Percentage of adults reported eating fruit at least once per day by race/ethnicity, Delaware, 2021



Source: Division of Population Health. "BRFSS Prevalence & Trends Data." National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2021. https://www.cdc.gov/brfss/brfssprevalence/.

Non-Hispanic Black and Hispanic Delaware adults reported eating vegetables at lower rates than non-Hispanic White Delaware adults (Figure 12).[6]

Figure 12. Percentage of adults reported eating vegetables at least once per day by race/ethnicity, Delaware, 2021



Source: Division of Population Health. "BRFSS Prevalence & Trends Data." National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2021. https://www.cdc.gov/brfss/brfssprevalence/.

Obesity

Obesity in childhood and adulthood increases risk of high blood pressure, high cholesterol, heart disease, type 2 diabetes, asthma, stroke, many types of cancer, premature death, and mental illness such as clinical depression and anxiety.[42] There are many contributing factors to excess weight gain, including behavior, genetics, and several societal and community-level factors such as access to healthy foods and safe and convenient places for physical activity.[43]

Obesity is closely linked to physical activity and nutrition. As such, individuals living in communities without access to healthy and affordable food or safe and convenient places for physical activity typically have higher rates of overweight and obesity.

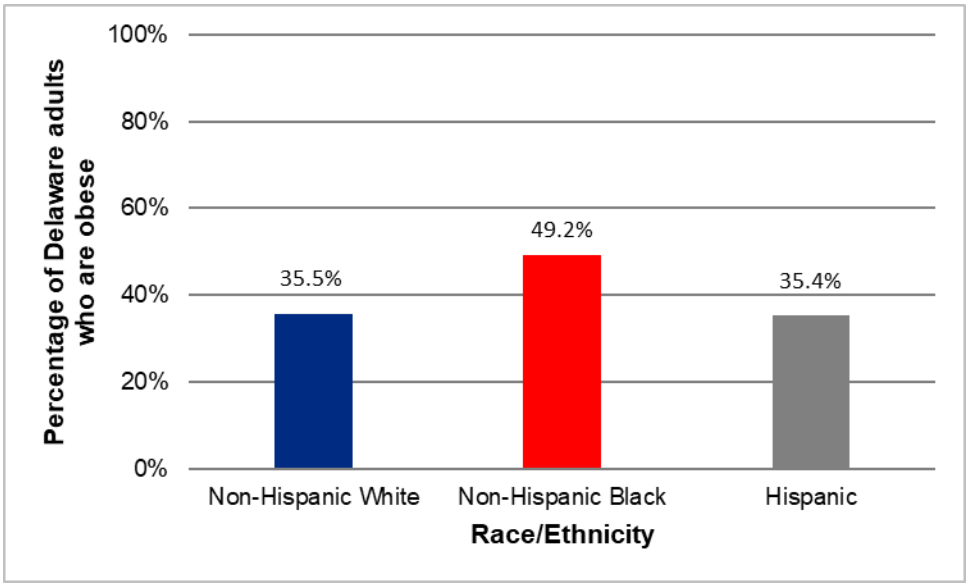
More than 70% of Delaware adults are overweight or obese.[6]

- In 2022, 33.9% of Delaware adults reported being overweight and another 37.9% reported being obese. The national median for overweight was 34.1% in 2022; for obesity, it was 33.6%.[6]

- Obesity has significantly increased since 2011. In 2011, 28.8% of Delaware adults reported being obese, compared to 37.9% in 2022. The national median for obesity also increased since 2011, from 27.8% in 2011 to 33.6% in 2022.[6]
- The percentage of overweight Delaware adults has remained stable since 2011. In 2011, 35.0% of Delaware adults reported being overweight, compared to 33.9% in 2022. This trend was also observed for the national median. In 2011, the national median for overweight adults was 35.7%, compared to 34.1% in 2022.[6]
- In Delaware, non-Hispanic Black adults have the highest prevalence of obesity compared to non-Hispanic White and Hispanic Delaware adults. In 2022, 49.2% of non-Hispanic Black Delaware adults were obese, compared to 35.5% of non-Hispanic White and 35.4% of Hispanic adults in Delaware.[6]

In Delaware, non-Hispanic Black adults have the highest prevalence of obesity, compared to non-Hispanic White adults and Hispanic adults (Figure 13).[6]

Figure 13. Percentage of obese adults by race/ethnicity, Delaware, 2022



Source: Division of Population Health. "BRFSS Prevalence & Trends Data." National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2022. https://www.cdc.gov/brfss/brfssprevalence/.

Tobacco Use

Cigarette smoking

Smoking causes approximately one in five deaths every year in the U.S. On average, smokers die 10 years earlier than nonsmokers.[44]

All tobacco products contain nicotine, an addictive chemical that stimulates the release of dopamine (a chemical released in the brain that is pleasurable) and adrenaline, which increases blood pressure, breathing, and heart rate.[45]

Tobacco smoke contains over 7,000 chemicals, at least 250 of which are harmful, including arsenic, carbon monoxide, and ammonia, and it is also dangerous to nonsmokers nearby.

Secondhand smoke can cause heart disease, lung cancer, and serious health problems in infants and children, including sudden infant death syndrome and asthma attacks.[46,47] There is no safe level of exposure to secondhand smoke.

Exposure to secondhand smoke is higher among those living below the poverty level and those who pay rent. Compared to other racial/ethnic groups in the U.S., Black individuals have the highest rates of exposure to secondhand smoke.[48]

There are both immediate and lifelong benefits to quitting smoking, including decreased coughing and shortness of breath and decreased risk of heart attacks, cardiovascular disease, COPD, and cancer.[49] In Delaware in 2020, 59.2% of adult smokers quit smoking for one day or more in the last 12 months.[6]

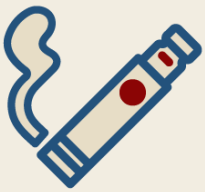
Among Delaware adults, the prevalence of cigarette smoking declined over the last 11 years.[6]

- The prevalence of adults who were current smokers in Delaware declined from 21.8% in 2011 to 12.9% in 2022. The national median also declined from 21.2% in 2011 to 14.0% in 2022.[6]
- In Delaware, 14.6% of non-Hispanic Black adults and 13.9% among non-Hispanic White adults reported being current cigarette smokers in 2022. The prevalence of current cigarette smoking among Delaware Hispanic adults needed to be suppressed due to small sample size.[6]
- Smoking was most common among 35- to 44-year-olds in Delaware. In 2022, 21.9% of 35- to 44-year-olds in Delaware currently smoke cigarettes, followed by 16.8% of 54- to 64-year-olds and 16.5% of 45- to 54-year-olds.[6]

Despite similar percentages of smoking to non-Hispanic White individuals, non-Hispanic Black individuals die from smoking-related diseases (such as heart diseases) at higher rates than non-Hispanic White individuals.[50]

E-cigarette use

E-cigarettes (also known as **electronic cigarettes** or **vaping devices**) are battery-operated devices used to inhale an aerosol that can contain nicotine, flavorings, and additional chemicals. Although e-cigarettes have the potential to benefit current smokers as an alternative to smoked tobacco products, they are not safe and should not be used by nonsmokers, youth, or pregnant adults. E-cigarettes often contain nicotine and can contain lead and other chemicals linked to cancer.[51]



The prevalence of e-cigarette usage remained stable among Delaware adults but has increased nationally.[6]

- In 2022, 6.1% of Delaware adults were current e-cigarette users, compared to a national median of 7.7%. E-cigarette usage has remained mostly stable in Delaware but increased nationally. In 2016, 4.0% of Delaware adults reported being current e-cigarette users, compared to 6.1% in 2022. The national median for e-cigarette usage has increased from 4.7% to 7.7%.[6]

Among Delaware adults, 18- to 34-year-olds had the highest rates of e-cigarette use.[6]

- In 2021, 13.7% of 18- to 34-year-olds in Delaware were e-cigarette users, compared to 5.5% of 35- to 54-year-olds.[*] Fewer than 2.0% of Delaware adults ages 55 years or older use e-cigarettes.[*,6]

Total tobacco use

While cigarettes and e-cigarettes are the most common forms of tobacco that people use, there are many other tobacco products available. These products include smokable tobacco such as cigars, cigarillos or little cigars, pipes, and hookah. There are smokeless tobacco products such as snus, snuff, and chewing tobacco. The Delaware Behavioral Risk Factor Survey asks a variety of questions aimed to understand the different types of tobacco products being used by adults.

[*] The Behavioral Risk Factor Surveillance System survey asks respondents to report their age. Publicly available data are typically presented in five-year age groupings (such as 25-29, 30-34, etc.). Due to certain age groupings having a small number of respondents, some groups have been combined.

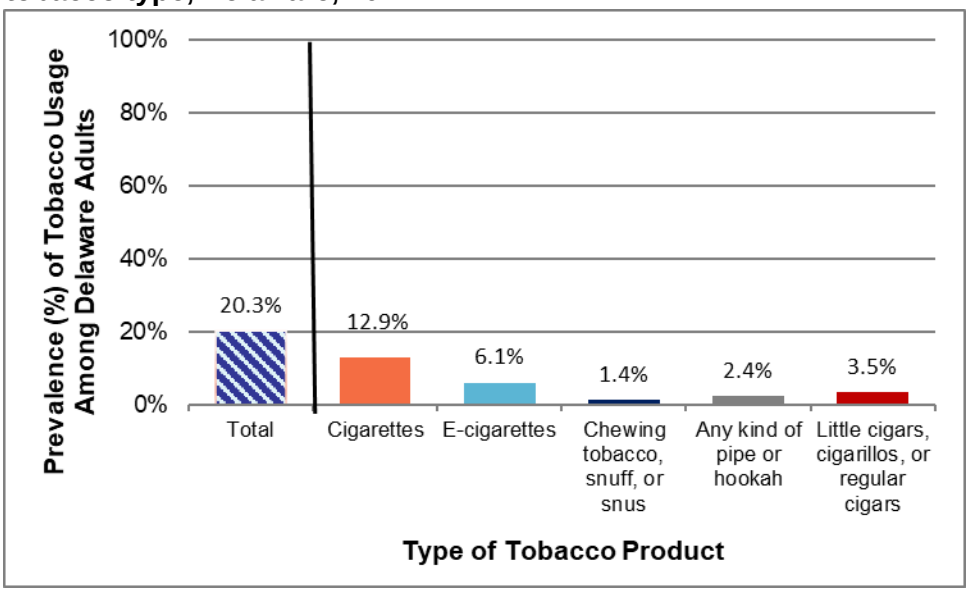
The prevalence of total tobacco use has remained stable since 2015.[6]

- In 2022, 20.3% of Delaware adults reported currently using some form of tobacco, compared to 17.4% in 2015.[6]

Higher percentages of Delaware adults who reported smoking cigarettes also reported using some other form of tobacco.[6]

- In 2022, 7.8% of current Delaware adult smokers reported also using e-cigarettes compared to 5.1% of non-smokers.[6]
- In 2022, 10.7% of current Delaware adult smokers reported also using some other form of tobacco compared to 4.0% of Delaware non-smokers.[6]

Figure 14. Current tobacco use prevalence among Delaware adults by tobacco type, Delaware, 2022



Source: Delaware Department of Health and Social Services, Division of Public Health, Behavioral Risk Factor Survey (BRFS), 2022
The left side of the line indicates total tobacco use whereas the right side of the line indicates the breakdown of each type of tobacco products used.

Excessive alcohol use

Excessive alcohol consumption is a risk factor for many chronic diseases including cardiovascular diseases, liver disease, and cancer.[52] There are two forms of excessive alcohol use: heavy drinking, and binge drinking. The CDC defines heavy drinking as consuming eight or more drinks per week for a woman or 15 or more drinks per week for a man. Binge drinking is defined by the CDC as a woman consuming four or more drinks in one event or a man consuming five or more drinks in an event.

Heavy Drinking

The prevalence of heavy drinking remained stable over the past 11 years.[6]

- In 2022, 5.5% of Delaware adults reported being heavy drinkers, compared to 7.4% in 2011. There was a definition change to heavy drinking which may explain the slight, but not statistically significant, decrease in prevalence.[6]
- The prevalence of heavy drinking was slightly lower, but consistent with the national median of 6.9% in 2022.[6]

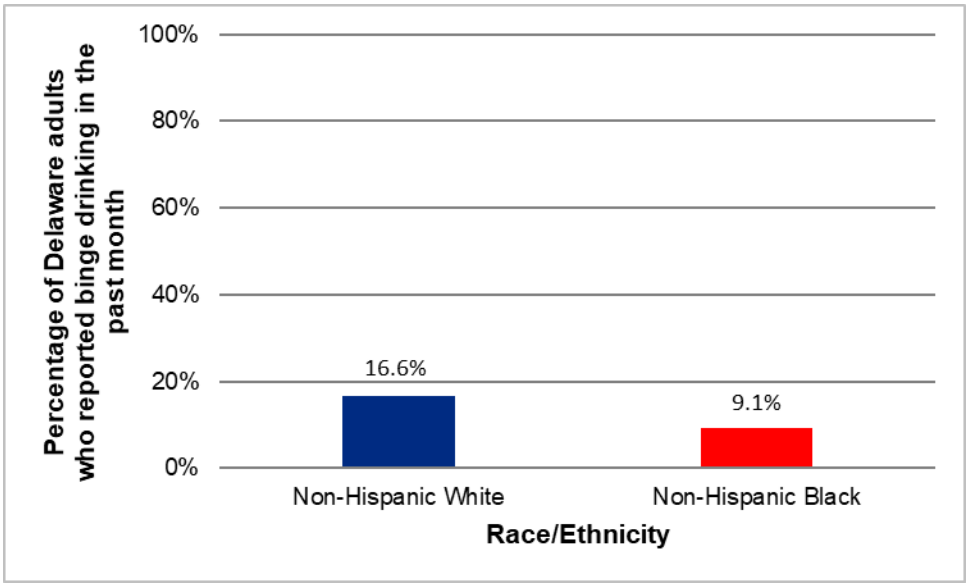
Binge Drinking

The prevalence of binge drinking declined over the past 11 years.[6]

- In 2022, 14.0% of Delaware adults reported binge drinking in the past month, compared to 20.3% in 2011. This decrease was statistically significant.[6]
- The prevalence of binge drinking (14.0%) among Delaware adults was lower than the national median (17.0%).[6]

Binge drinking is more common among non-Hispanic White adults than non-Hispanic Black adults in Delaware (Figure 15).[6]

Figure 15. Percentage of Delaware adults who reported binge drinking in the past months by race/ethnicity, Delaware, 2022



Source: Division of Population Health. "BRFSS Prevalence & Trends Data." National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2022. https://www.cdc.gov/brfss/brfssprevalence/.

Adolescent Health

Health behaviors established in adolescence, such as smoking and physical inactivity, have a sustained impact on an individual's health and the development of chronic diseases in adulthood.[53] This period is critical for establishing lifelong healthy behaviors.

In Delaware, the prevalence of current cigarette, e-cigarette, and alcohol use in high school students was highest in Sussex County in 2021. Physical inactivity and overweight were highest in New Castle County in 2021, while obesity was highest in Kent County in 2021.[54]

Physical activity

Physical activity has numerous benefits for children and adolescents, including strong bones and muscles, lower body fat, better cognition and academic performance, and reduced symptoms of depression. The U.S. Department of Health and Human Services recommends that children and adolescents through age 17 complete 60 minutes of moderate-to-vigorous physical activity every day.[35]

Physical inactivity increased among Delaware adolescents.[55]

- In 2021, 19.6% of Delaware high school students were not physically active for at least 60 minutes in the last week, compared to 18.0% of Delaware high school students in 2011.[55]
- In 2021, 15.8% of U.S. high school students were not physically active for at least 60 minutes in the last week, compared to 13.8% of U.S. high school students in 2011.[55]

Nutrition

Nutrition is particularly important during the period of significant growth and development that occurs during adolescence. During adolescence, individuals gain 40% of their final weight and 15% of their adult height, increasing their body's need for nutrients.[16]

Consumption of fruits increased among Delaware adolescents.[55]

- In 2021, 88.2% of Delaware high school students reported eating fruit in the last week. Fruit consumption increased from 2011, when 54.0% of Delaware high school students ate fruit or drank 100% fruit juice at least once per day during the past week.[55]
- In comparison, consumption of fruit fell among U.S high school students. In 2021, 92.3% of U.S. high school students ate fruit or drank 100% fruit juice during the past week, a decrease from 95.2% in 2011.[55]

Consumption of vegetables increased among Delaware adolescents.[55]

- In 2021, 85.2% of Delaware high school students ate vegetables or salad at least once in the past week.[55]

- Vegetable consumption among adolescents in Delaware remains below the national median. In 2021, 90.7% of U.S. high school students ate vegetables at least once, a decrease from 94.3% in 2011.[55]

Consumption of sugar-sweetened soda decreased among Delaware adolescents.[55]

- In 2021, 13.0% of Delaware high school students drank sugar-sweetened soda one or more times per day, during the past week, a decrease from 26.1% in 2011.[55]
- Consumption of sugar-sweetened soda in Delaware remains similar to consumption in U.S. high school students. In 2021, 14.7% of U.S. high school students consumed sugar-sweetened soda during the past week, a decrease from 27.8% in 2011.[55]

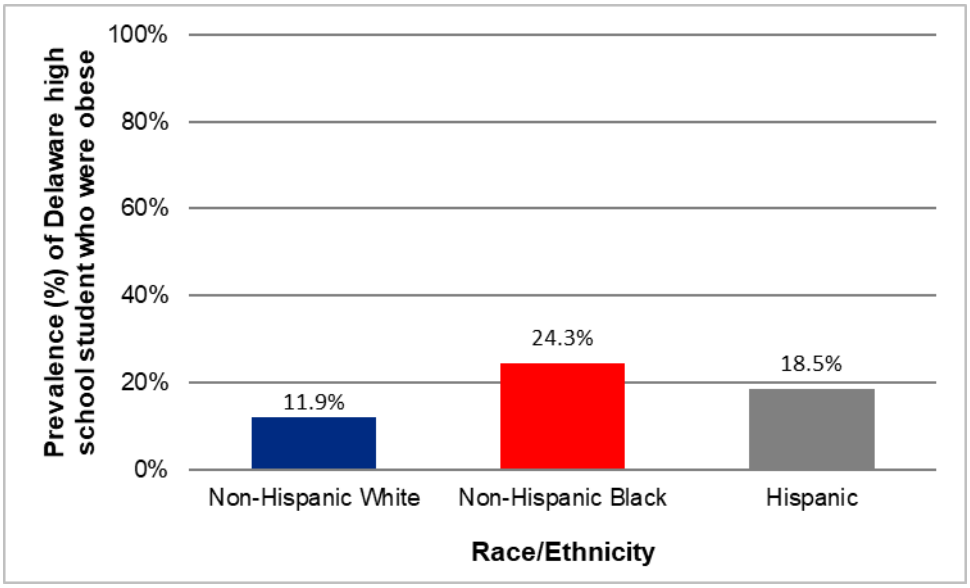
Obesity

Adolescent obesity puts adolescent health and well-being at risk by increasing the likelihood of high blood pressure and cholesterol, diabetes, joint problems, sleep apnea and difficulty breathing, emotional distress, and poor self-esteem.[57]

Obesity and overweight increased among Delaware adolescents.[55]

- In 2021, 32.4% of Delaware high school students were obese or overweight, an increase from 29.1% in 2011.[55]
- U.S. prevalence of obesity and overweight in 2021 were nearly identical, at 32.3% of U.S. high school students, an increase from 28.2% in 2011.[55]
- In 2021, the prevalence of obesity was higher among non-Hispanic Black and Hispanic Delaware adolescents than non-Hispanic White adolescents.[55]

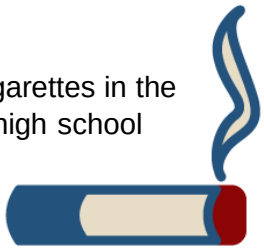
Figure 16. Obesity in high school students, by race/ethnicity, Delaware, 2021



Source: Centers for Disease Control and Prevention. "1991-2021 High School Youth Risk Behavior Survey Data." 2021. http://nccd.cdc.gov/youthonline/.

Tobacco and e-cigarette use

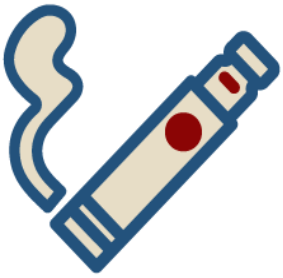
Many factors contribute to adolescent smoking, including peer influence, social environment, depression, anxiety, and stress.[58] Nearly nine out of 10 U.S. adults who smoke cigarettes daily first tried smoking before age 18.[59]



Cigarette use declined among Delaware adolescents.[55]

- In 2021, 2.7% of high school students in Delaware reported smoking cigarettes in the last month, compared to 18.3% in 2011. In comparison, 3.8% of U.S. high school students reported smoking cigarettes in the past month in 2021, a decrease from 18.1% in 2011.[55]
- In 2021 in Delaware, non-Hispanic White high school students (4.2%) had a higher prevalence of cigarette smoking than non-Hispanic Black (0.9%) or Hispanic high school students (2.9%).[55] Since 2014, e-cigarettes have become the most used nicotine product among youth.[60] In 2021, 14.1% of high school students in the U.S. reported using an electronic cigarette in the last 30 days.[60]

E-cigarette use increased among Delaware adolescents.[55]



- Reported prevalence of e-cigarette usage has varied since 2015.† E-cigarette usage among Delaware high school students decreased from 23.4% in 2015 to 13.6% in 2017.[55] By 2021, e-cigarette usage among Delaware high school students increased to 17.9%.
  - In comparison, 18% of U.S. high school students used e-cigarettes in 2021, a decrease from 24.1% in 2015.[55]
  - As with cigarette smoking, in 2021 non-Hispanic White high school students in Delaware had the highest rates of using e-cigarettes compared to non-Hispanic Black or Hispanic high schoolers.[55]

† The Youth Risk Behavior Surveillance System captures data for only a proportion of Delaware adolescents. Year-to-year differences in data, particularly for e-cigarette use, may be the result of different sampling and therefore should be interpreted with caution.

Alcohol use

Alcohol is the most used substance among adolescents in the U.S. Underage drinking exposes adolescents to substantial risk, including difficulty in school, risky sexual activity, disruption of normal growth, and unintentional injuries such as motor vehicle crashes.[61]

Alcohol use declined among Delaware adolescents.[55]

- In 2021, 20.2% of Delaware high school students reported drinking alcohol in the last month. Alcohol use decreased from 2011, when 40.4% of Delaware high school students reported drinking alcohol in the last month.[55]
- Alcohol use in the past month also declined among U.S. high school students, from 38.7% in 2011 to 23% in 2021.[55]
- In 2021 in Delaware, non-Hispanic White high school students had the highest rates of alcohol consumption compared to non-Hispanic Black or Hispanic high school students.[55]

Cost of Chronic Disease

Chronic diseases are the leading cause of illness, disability, and death in the U.S. and account for the largest share of national health care spending. Sixty percent of U.S. adults have at least one chronic disease, and an estimated 84% of all health care dollars are spent on chronic diseases.[62] In 2020, the U.S. spent $4.1 trillion on health care, meaning chronic diseases alone cost nearly $3.5 trillion nationwide.[63] As the U.S. population continues to age, the cost of chronic diseases will continue to increase, as the likelihood of developing one or more chronic conditions rises with age. These costs include both direct costs (those associated with medical expenses such as inpatient or outpatient visits, prescriptions, and home health care) and indirect costs (those associated with missed work or school or decreased productivity).

Preventing chronic diseases and managing existing ones can yield major health care cost savings. This is especially true for Delaware, which has the fifth highest health spending per capita in the country ($12,899) and a state population that is both older than the national average and aging rapidly; the Delaware Population Consortium projects Delaware's population of ages 65 and older to increase by 65% from 2015 to 2050.[64, 65] From 2016 to 2030, the projected total cost of chronic diseases in Delaware is $135 billion. Each year, chronic diseases could cost Delaware $6.5 billion in medical costs and $2.5 billion in lost employee productivity.[66]

The health-related costs of chronic diseases are borne by a variety of health care payers, including private health insurers, Medicare and Medicaid, and health care systems operating in Delaware.

- **Heart disease:** In 2020, the health care cost for Medicare beneficiaries diagnosed with heart disease was estimated to be over $1 billion total for Delaware.[‡, 67,68,69]
- **Cancer:** The cost of cancer can vary greatly based on the type and stage of the cancer and the specific treatment plan. In 2019, the estimated cost of initial cancer care in Delaware was upwards of $258 million.[§] This does not include continuing care in subsequent years or care in a patient's last year of life, the latter of which can be more than $100,000 per person.[70]
- **Chronic lower respiratory disease:** As of 2021, annual medical costs associated with Delaware adults who have asthma have an estimated total of more than $350 million.[71,72,6] Among Delaware adults with COPD, total annual medical costs are estimated in 2021 at $33 million.[**,71,6,73]
- **Diabetes:** As of 2021, prediabetes and diabetes cost Delaware $1.1 billion each year; $818 million are spent on direct medical costs, and $293 million are spent on indirect costs.[74]

[‡] Health care cost of heart disease was estimated for Medicare beneficiaries in Delaware by multiplying the national percentage of Medicare beneficiaries with at least one heart condition by the number of Delaware Medicare beneficiaries in 2020. This was then multiplied by the total costs per capita for Delaware Medicare beneficiaries with heart disease in 2020.

[§] The cost of initial cancer care in Delaware was estimated by multiplying the average number of all cancer cases per year in Delaware from 2015-2019 by the per patient annualized 2007-2013 cancer-attributable costs for all types of initial cancer care.

[**] The annual medical costs for Delaware adults with asthma and COPD was estimated by multiplying the average expenditure per person for workers with asthma or COPD from 2011-2015 by the number of Delaware adults with asthma or COPD in 2021.

- **Obesity:** Adult and childhood obesity are associated with annual medical costs of $207 million in Delaware, $66 million of which are attributed to Medicaid beneficiaries.[75]
- **Smoking:** Annual direct medical costs related to smoking total more than $618 million in Delaware, $102.8 million of which is paid by Delaware Medicaid. It is estimated that Delaware experiences $1 billion in lost productivity annually due to smoking.[76]

Recommendations for Advancing Chronic Disease Prevention and Management in Delaware

The data in this report highlight areas in which Delaware made promising progress over the past 10 years, as well as areas that may benefit from further intervention. This final section presents a set of recommendations informed by the most recent data and trends of chronic diseases and related health behaviors in Delaware, as well as policies and practices applied in other states to address the population health burden of chronic diseases.

These recommendations build off the policy recommendations made by the Healthy Lifestyles Subcommittee (HLSC) of the Delaware Cancer Consortium's Cancer Risk Reduction Committee, the HLSC Action Plan, existing initiatives in Delaware, and best practices implemented by other states and recommended by entities such as the Centers for Disease Control and Prevention.

1. **Increase community-level engagement and outreach to at-risk populations.**

   Support efforts to expand Delaware's network of community health workers:

   Increasing the state's network of community health workers (CHWs) could improve access to primary and secondary prevention services among vulnerable populations. CHWs are frontline public health workers who are trusted members of the communities they serve. They can bridge the gap between communities and the health care and social services systems through patient outreach, health education, social support, and more.[77] CHWs can help communities suffering from many chronic conditions. This is a pressing need among Delaware residents who are people of color and suffer from higher prevalence and/or mortality of conditions such as heart disease, stroke, cancer, diabetes, and obesity, and who face unique challenges to maintaining healthy lifestyles or managing their conditions.

   DPH can bolster the state's existing CHW workforce by establishing a standardized, statewide training and certification program; advocating for reimbursement for CHWs through Delaware's Medicaid program and health plans operating throughout the state; working with partners such as the Community Health Workers Association of Delaware and Delaware Technical Community College to increase recruitment and retention efforts of CHWs; and promoting the use of CHWs in interdisciplinary care teams.

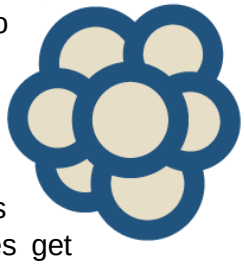
   Increase funding for and engagement with community-based organizations:

   Community-based interventions can focus on specific populations, use individual- and environmental-level strategies, and work across multiple settings to help improve community members' health and well-being. Delaware's community-based organizations have the unique ability to meet community members where they are and understand the challenges members face in living a healthier lifestyle. Their work with communities can be a powerful tool for chronic disease prevention.

DPH already engages with and offers funding opportunities for community-based organizations doing work across the health and social services sector. DPH should continue to support community-based organizations through funding and technical assistance, particularly those implementing evidence-based interventions that focus on nutrition, physical activity, obesity prevention, and/or decreasing smoking prevalence and exposure to secondhand smoke. Healthy Communities Delaware is a collaborative effort between DPH, the Delaware Community Foundation, and the University of Delaware Partnership for Healthy Communities that supports community-based organizations throughout the state.[78] Similarly, the Advancing Healthy Lifestyles initiative within DPH's Physical Activity, Nutrition, and Obesity Prevention Program and the Delaware Tobacco Prevention and Control Program offer funding and support with implementation and monitoring to several community partners doing work in these areas. These initiatives can be used as models for other similar funding and technical assistance opportunities that DPH may consider.

2. Increase access to cancer screenings to improve early detection and treatment.

While Delaware's cancer mortality and incidence remain higher than the national average, the State has made considerable efforts to reduce the state's cancer burden, particularly through the efforts of the Delaware Cancer Consortium. To continue the progress already made in reducing cancer mortality and incidence statewide, Delaware should increase its levels of screenings, particularly for people of color. Some of the Delaware Cancer Consortium's continuing goals, on which DPH can build, include "increasing lung cancer screening overall," "increasing cancer screenings of at-risk and underserved populations," and "helping more minorities get screened for breast cancer."[79]



Expand Screening for Life eligibility:

DPH's Screening for Life program offers free screening for breast, cervical, colorectal, prostate, and lung cancer, as well as related office visits, health education, and care coordination for eligible individuals.[17] To increase use of Screening for Life services, Delaware could expand eligibility requirements to include more individuals. This includes expanding the income guidelines, which currently cover individuals between 139% and 250% of the Federal Poverty Level (FPL).[80] Individuals making above 250% of the FPL, which was $33,975 for a single individual in 2023, may still struggle to afford regular health care and could benefit from a free screening service such as Screening for Life.[81] Delaware could also adjust the program's insurance guidelines, which currently exclude individuals who have health insurance that covers screenings or who are eligible for health insurance from ChooseHealth Delaware, the State's insurance marketplace.[80] Individuals with insurance or those qualifying for marketplace insurance may still face barriers to getting cancer screenings, such as not being able to afford the out-of-pocket costs associated with the screening (like a co-pay) or the premium and deductible for a marketplace insurance plan.

Expand outreach efforts related to cancer screenings:

Delaware can also increase the use of cancer screenings statewide by engaging in additional outreach and marketing, specifically among residents of color and at-risk individuals. This could include forming partnerships with health care providers and community-based organizations to promote screening, encouraging CHWs to discuss the importance of screening and early cancer detection among the populations they serve, or creating a social

media campaign to spread awareness. As Delaware residents of color, particularly non-Hispanic Black residents, traditionally have higher rates of cancer mortality and incidence, they could especially benefit from increased outreach and education about cancer screenings. Delaware's Screening for Life program does not cover Medicaid beneficiaries (those with incomes up to 138% of the FPL), but in 2021, more than half of Delaware's Medicaid population were people of color.[80,82] To ensure all at-risk populations are being reached, outreach efforts should promote free screening opportunities, such as the Screening for Life program, and address cancer screening more broadly.

3. Increase access to healthy food options in a diverse set of retail outlets.

Many Delaware adults and adolescents do not eat enough fruits or vegetables daily. Delaware can take many steps to increase the offering of healthy food options statewide.

Increase healthy food offerings in corner stores:

Corner stores, often found in low-income communities and communities of color, do not typically supply the full range of foods and beverages necessary to build a healthy diet. They are less likely to sell fresh produce, whole grains, and low-fat dairy products than grocery stores, and if they do sell these products, they are typically priced higher than in grocery stores.[83] As recommended by the HLSC, Delaware can increase the amount of healthy food offerings in corner stores by establishing incentives that encourage store owners to sell healthier food products, increasing store or other vendor capacity to market and sell healthy foods, and establishing a food-purchasing cooperative to leverage the buying power of local store owners.[84] The Delaware Council on Farm and Food Policy, which supports Delaware's food supply chain, can be an important partner for this work.

Increase the percentage of healthy food options offered on all State property:

In 2016, DPH reestablished its partnership with other state entities and vendors to participate in the Healthy Vending Initiative, which increased the threshold of healthy food product offerings in participating vending machines to 40%.[85] As the Healthy Vending Initiative was limited to vending machines – and not all vending machines on State property participated – there is an opportunity to expand these efforts to increase healthy food offerings to more vending machines and to other settings, such as cafeterias, snack bars, and park concession stands on State property.

Promote the use of SNAP and FMNP-WIC benefits at local farmers' markets:

Many Delaware farmers markets allow residents to purchase items with their Supplemental Nutrition Assistance Program (SNAP) benefits and Farmers Market Nutrition Program-Women, Infants, and Children (FMNP-WIC) coupons.[86] However, many Delaware residents may not know they can use these benefits at farmers markets, may not feel comfortable using their benefits, or may not understand how to navigate a farmers market. DPH can partner with other state entities or the farmers markets themselves to promote the use of SNAP or FMNP-WIC benefits among benefit recipients through targeted outreach, marketing, and education. CHWs can also help community members understand how to use their benefits at farmers markets, how to purchase healthy foods in other food retail settings, and how to prepare healthy meals using produce.

Expand SNAP-Ed programming to low-income Delaware residents:

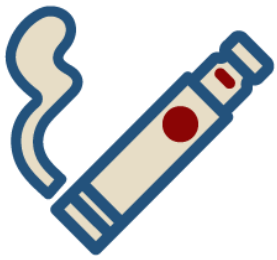
SNAP Education (SNAP-Ed) is a federally funded, evidence-based grant program that offers education to eligible individuals to improve their nutrition and mental health and decrease rates of obesity and chronic disease.[87] SNAP-Ed is an important tool that can influence the health of families and communities. Per HLSC recommendation, Delaware can expand its existing SNAP-Ed program to help build an integrated system of access and information across and within communities by establishing new community partnerships to provide programming and developing additional resources.[87]

4. **Increase walkability, green space, and accessible transportation in neighborhoods statewide.**

Engaging in regular physical activity is also important for preventing and managing chronic diseases. Creating a built environment that allows individuals to participate in physical activity in a way that is easy, safe, and comfortable for them is important for promoting health and preventing disease. DPH can partner with other state or community-based entities, such as Complete Communities with the University of Delaware, to (1) identify areas or neighborhoods with limited walkability, accessible transportation, or green space; and (2) fund initiatives to address these barriers, such as creating walking or bike paths or educational community campaigns about existing trails and parks. Additionally, per HLSC recommendation, Delaware can strengthen and enhance its Complete Streets policy to support the Delaware Department of Transportation's work to build active, accessible transportation.[84]

5. **Promote youth engagement with tobacco and e-cigarette use prevention and cessation programs.**

Although Delaware made notable progress with decreasing cigarette use among adults and adolescents over the last decade, the use of e-cigarettes has become more prevalent, particularly among high school-age youth. Advocating for the use of individual- and school-based interventions that target use of tobacco products and e-cigarettes may help to reduce the number of Delaware adolescents engaging in these activities. DPH's Tobacco Prevention and Control Program works with several community organizations and schools to provide anti-tobacco programs, such as the Delaware Kick Butts Generation, Teens Against Tobacco Use, and Smoke Screamers. DPH should continue to seek out partnerships with local organizations, school systems, and other State entities engaging in tobacco and e-cigarette prevention and cessation programs.



6. **Support evaluations of recent public health programs to better understand which interventions led to improvements.**

Over the last decade, Delaware made demonstrable progress to reduce the prevalence, incidence, and mortality of chronic diseases. The State should consider funding additional

evaluations to determine which interventions played a role in successes that are highlighted in this report or which interventions had limited effectiveness and could be improved over time.

For example, cancer incidence and mortality improved in Delaware over the last decade. Delaware could assess the role the Screening for Life program played in these improvements. Given the rise in diabetes prevalence and mortality in Delaware, DPH may consider evaluating its Diabetes and Heart Disease Prevention and Control Program (DHDPCP). Considerations for expanding DHDPCP, based on the results of the evaluation, could include partnering with additional organizations to offer the program, increasing recruitment and retention efforts, or increasing marketing efforts toward Black or Hispanic Delaware residents.

7. Cultivate innovative data modernization efforts in public health.

Delaware has made continuous improvement in the collection, storage, use, and sharing of public health data and information. The COVID-19 pandemic underscored that public health data and surveillance systems are essential to Delaware's public health infrastructure. The pandemic also underscored existing inequities in the public system that required Delaware to innovatively respond to the needs of its most vulnerable communities. Modernizing state data systems to generate and use chronic disease data more efficiently will yield enhanced information for state leaders, federal and state partners, and the public. Data system innovations are vital to advance public health programming to more readily inform strategic interventions that promote healthy communities, support healthy lifestyles, and address social determinants of health which are aligned with chronic disease conditions and overall health outcomes.

It is recommended by national organizations such as CDC and the Association of State and Territorial Health Officials (ASTHO) that data modernization and interoperability be a collective statewide effort to ensure sustained transformation to better meet current and future population health needs. In addition, Delaware, like the rest of the nation, should prioritize prepare for emerging health threats. Delaware will continue efforts to break down silos, build capacity of its public health surveillance systems, and advance health equity by addressing the social determinants of health to reduce barriers and promote health and wellness for all residents.[88,89,90,91]

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