

Chronic Disease in Delaware

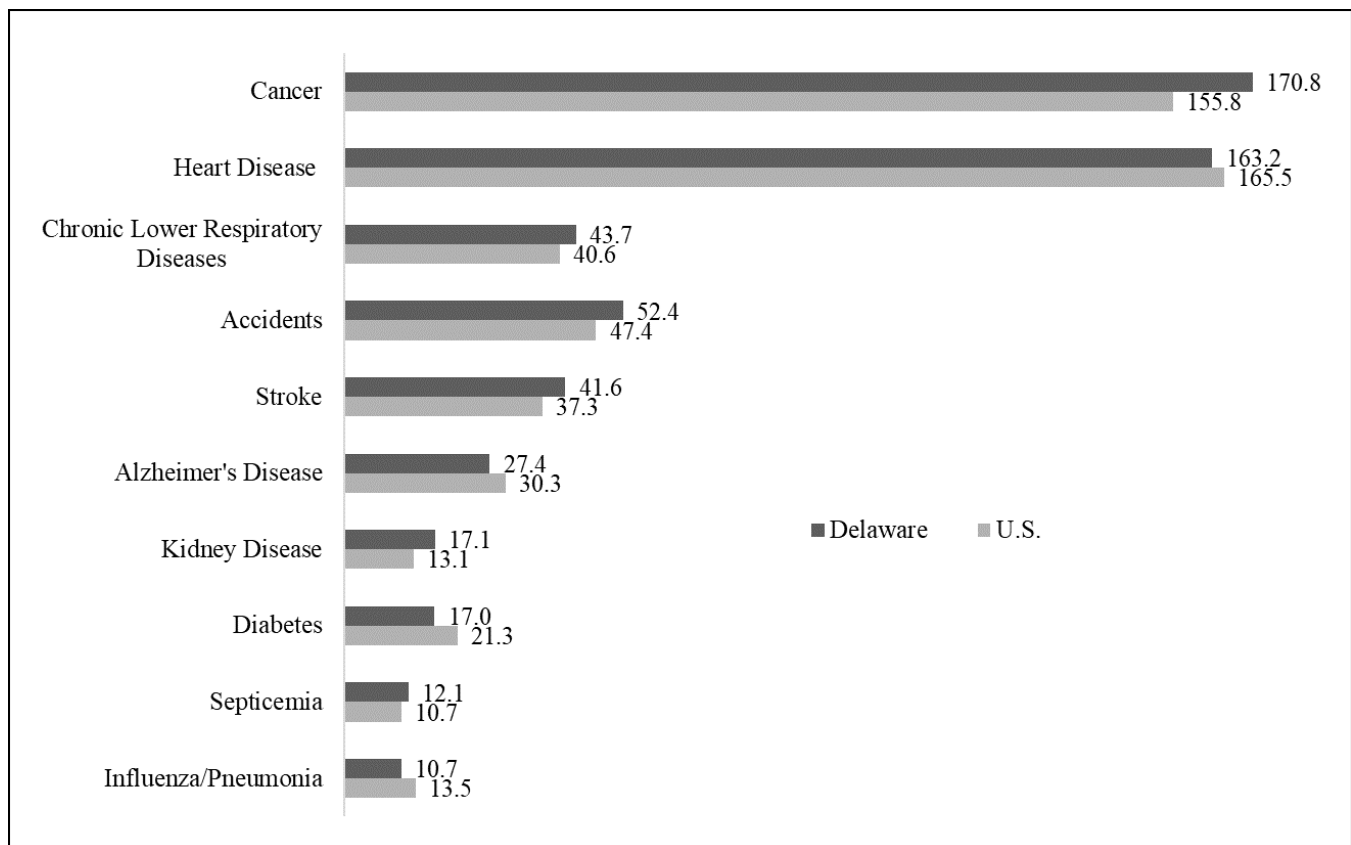
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Chronic diseases progress slowly and persist for a long time. Examples include Alzheimer's disease, cancer, cardiovascular disease (including heart disease, stroke, and other vascular diseases), chronic lower respiratory disease, and diabetes. Vaccines cannot prevent chronic diseases nor can medication completely cure them. Chronic diseases require ongoing monitoring and treatment; without intervention, they typically worsen over time, often leading to the need for specialized medical care.

Chronic diseases are the leading causes of morbidity and mortality in the United States. Sixty percent of all U.S. adults have at least one chronic disease; nearly one-half (42%) of U.S. adults have more than one chronic condition.¹ Twelve percent of all U.S. adults have five or more chronic conditions.¹ In 2016, 5,888 Delawareans died from chronic disease; combined, cancer and heart disease accounted for 46% of all deaths statewide (Figure 1).³ Four of the five leading causes of death among Delawareans are chronic diseases.³

Figure 1: Age-Adjusted Mortality Rates for the Leading Causes of Death: Delaware vs. U.S., 2016²



All rates expressed per 100,000 total population

Like other states, Delaware's chronic disease burden is growing. Population aging, advances in medical care, and growing rates of health-damaging behaviors increase the likelihood that the number of

Delawareans living with, and dying from, chronic diseases will increase in the future. Continued statewide aggressive public health action is critical for chronic disease prevention as well as efficient management of existing chronic disease cases.

To assist in this statewide goal, the Delaware Division of Public Health (DPH), Health Promotion and Disease Prevention (HPDP) Section will publish an annual brief entitled, *Chronic Disease in Delaware: Facts & Figures, 2018*. Following the inaugural 2018 edition, the HPDP Section will publish annual updates for the primary goal of summarizing and disseminating chronic disease epidemiological data among partners, consumers, decision-makers, and the public. The *Facts & Figures* document will also serve as a tool to direct coordinated, statewide public health and policy efforts focused on reducing Delaware's chronic disease burden. *Chronic Disease in Delaware: Facts & Figures, 2018* is aligned with Delaware's State Health Improvement Plan as well as the Triple Aim of improved patient care experiences, improved population health, and reduced per capita healthcare costs. This article serves as an introduction to *Chronic Disease in Delaware: Fact & Figures, 2018*, and briefly summarizes the current state of chronic disease in Delaware.

The Cost of Chronic Disease

Prevention and management of chronic disease yields tremendous health care cost savings. In 2010, chronic diseases accounted for 86% of all U.S. health care spending; cancer care, alone, accounted for \$157 billion in health care costs.¹ In the same year, the U.S. spent \$170 billion treating conditions attributable to cigarette use. Medicare, Medicaid, and other public health care programs paid over 60% of these tobacco-related healthcare costs.⁴ In the U.S., direct medical costs of cardiovascular disease are projected to more than double between 2015 and 2035, sharply increasing from \$318 billion to \$749 billion.⁵ Addressing a single chronic condition prior to the development of secondary chronic conditions also yields substantial cost savings. On average, the average annual difference in health care costs between a privately-insured person with one or two chronic conditions (\$4,241) versus an individual with five or more chronic conditions (\$18,351) exceeds \$14,000.¹

Reducing preventable health care costs is especially critical for Delaware. In 2014, Delaware ranked highest among all U.S. states in per person prescription drug spending (an average of \$1,525 per Delawarean per year).⁶ In the same year, Delaware ranked fifth among states for physician and clinical services spending (\$2,259 per Delawarean per year) and sixth among states for hospital care spending (\$4,078 per Delawarean per year).⁶

Chronic disease prevention among Medicaid enrollees, particularly, has the potential to generate substantial costs savings at the state level. Medicaid is jointly-funded by the federal government and the states. At least 50 percent of states' total Medicaid funds come from the Federal Medical Assistance Percentages (FMAP); states are responsible for generating the remaining portion of Medicaid funds through a combination of general revenues, taxes, local governments, and other sources. In FY2019, Delaware received 57.55% of its Medicaid funding through FMAP, leaving the state responsible for generating the remaining 42.45% of funds.⁷ As Delaware's total Medicaid spending increases, so, too, does the share of funds for which Delaware is responsible.

Delaware has a comparatively high percentage of residents enrolled in Medicaid. Delaware ranked 5th among states for total percentage increase in Medicaid enrollees from 2000 to 2010 (9.2%).⁸ By 2010, Delaware ranked 10th among states in total percentage of residents enrolled in Medicaid (25%). Over the same time period, fewer Delawareans accessed private health insurance through their employers.

Notably, Delaware ranked 1st among states for total percentage decrease in employer-sponsored insurance enrollment (-15.3%) from 2000 to 2012.⁸

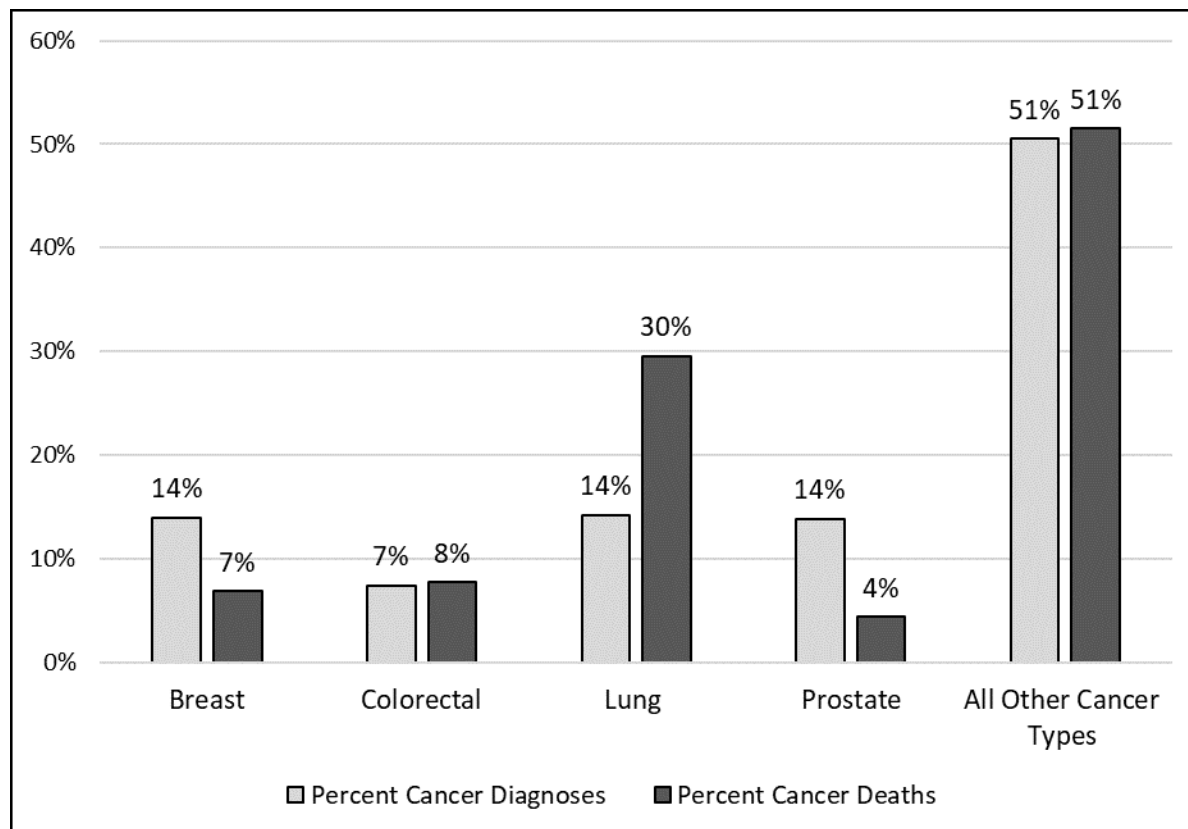
From 2000 to 2012, Delaware's Medicaid spending increased an average of 6.8% annually.⁸ In 2010, Delaware spent \$15,840 per elderly and disabled Medicaid enrollee and \$3,651 per parent and child Medicaid enrollee. Elderly and disabled persons comprise 18% of Delaware Medicaid enrollees while accounting for 49% of all Medicaid payments for services.⁸ Chronic disease and prevention management, including within the growing Medicaid enrollee population, is an essential component to achieving sustainable health care cost savings within Delaware.

Cancer

Cancer is the leading cause of death in Delaware.² From 2010-2014, 27,861 Delawareans were diagnosed with cancer. During the same period, 9,602 Delawareans died from cancer.⁹ Delaware's 2010-2014 cancer incidence rate (a measure of how many people in a population are diagnosed with cancer during a specific period) ranked 2nd highest among U.S. states. For the same period, Delaware's cancer mortality rate ranked 16th highest among states.⁹

Four cancer types – breast, colorectal, lung, and prostate (commonly referred to as the “Big 4”) – account for 49% of all cancer diagnoses and 49% of all cancer deaths in Delaware (see Figure 2).⁹

Figure 2: “Big 4” Cancers as a Percentage of Total Delaware Cancer Diagnoses and Deaths, 2010-2014⁹



Although Delaware's cancer incidence and mortality rates have been historically higher than the comparable U.S. rates, the gap has narrowed over the last decade. Declining cancer rates are especially noteworthy among African Americans in Delaware. Between 2000-2004 and 2010-2014, Delaware's

cancer incidence rates for African American and Caucasian males declined 15% and 4%, respectively. During the same period, the cancer incidence rate for African American females declined 1% while the comparable rate for Caucasian females increased 6%.⁹ From 2000-2004 to 2010-2014, Delaware's cancer mortality rates for African American and Caucasian males declined 25% and 17%, respectively. Similarly, cancer mortality rates for African American and Caucasian females declined 17% and 12%, respectively.⁹

Lung cancer continues to account for an overwhelming share of Delaware's total cancer burden. Of the "Big 4" cancers, lung cancer is the deadliest, accounting for 30% of all cancer deaths and 14% of all newly-diagnosed cancer cases in the state. The lethality of lung cancer stems from stage at diagnosis trends; 53% of all Delaware and U.S. lung cancer cases diagnosed from 2010-2014 were diagnosed in the distant stage after metastasis to distant tissues, organs, or lymph nodes.⁹

Historically, Delaware's lung cancer incidence and death rates were much higher than those of the U.S. Over time, the gap between U.S. and Delaware lung cancer rates has narrowed. Delaware's decline in lung cancer burden is due in large part to statewide reductions in tobacco use that began decades ago. Despite quantifiable progress achieved through coordinated public health efforts, Delaware's lung cancer incidence rate for 2010-2014 (70.9 per 100,000 population) was statistically significantly higher than the U.S. rate (55.8 per 100,000 population). Similarly, Delaware's lung cancer mortality rate (52.2 per 100,000 population) was statistically significantly higher than the U.S. rate (44.7 per 100,000 population). For the 2010-2014 time period, Delaware ranked 10th in the U.S. for lung cancer incidence and 13th in the U.S. for lung cancer mortality.

Heart Disease

Heart disease (inclusive of coronary heart disease (the most common form of heart disease), heart attack, heart failure, arrhythmia, heart aneurysm, angina (chest pain), rheumatic heart disease, and other heart-related conditions) is the second leading cause of death in Delaware.² In 2016, 1,955 Delawareans died from heart disease, accounting for 22% of all deaths statewide.³ Among Delaware adults, 7% of males and 6% of females report ever having had been diagnosed with coronary heart disease or experiencing a heart attack.¹⁰

Hypertension and hypercholesterolemia represent two major heart disease risk factors. Hypertension is often called a "silent killer" because many people do not have recognizable symptoms of the condition. Left untreated, high blood pressure can damage the heart, brain, and kidneys. Regular blood pressure screening is the best way to determine if an individual is hypertensive. In 2017, prevalence rates for both hypertension and hypercholesterolemia reached 35% among Delaware adults.¹¹ Hypertension prevalence is correlated with age. In 2017, 15% of Delawareans age 25-34 reported having high blood pressure compared to 61% of Delawareans age 65 or older.¹²

Chronic Lower Respiratory Disease

Chronic lower respiratory disease is the third leading cause of death in Delaware.² The most common forms of chronic lower respiratory disease are chronic obstructive pulmonary disease (COPD), emphysema, and chronic bronchitis; these diseases interfere with oxygen flow within the body, resulting in breathing difficulties. In 2016, 540 Delawareans died from chronic lower respiratory disease, representing 6% of all deaths statewide.³ In 2016, 6% of adult Delaware males and 7% of adult Delaware females reported ever having been diagnosed with chronic lower respiratory disease (COPD, emphysema, or chronic bronchitis).¹⁰

Up to 80% of all U.S. COPD deaths are attributable to tobacco use. When smoke from tobacco products is inhaled into the lungs, harmful components within the smoke are deposited into and absorbed by the lungs; over time, this causes many adverse effects within the respiratory system.¹³ The longer an individual smokes, and the more packs of cigarettes smoked, the greater the risk of developing COPD. Pipe smokers and cigar smokers are also at risk for COPD. Other COPD risk factors include exposure to secondhand smoke, indoor and outdoor air pollution, and certain dusts and chemicals that people may contact as part of their job.¹³

Diabetes

Diabetes is the ninth leading cause of death in Delaware.² In 2016, 203 Delawareans died from diabetes.³ However, the impact of diabetes on the number of deaths statewide is likely underestimated because diabetes is also a contributing risk factor to heart disease, stroke, and other chronic conditions.

DPH monitors statewide diabetes prevalence via the Delaware Behavioral Risk Factor Surveillance System (BRFSS), an annual statewide random telephone survey designed by the CDC. In 2017, 11.3% of Delawareans age 18 and older (approximately 85,400 adults) reported having been diagnosed with diabetes. This prevalence rate does not include gestational diabetes. Although the BRFSS survey does not distinguish between type 1 and type 2 diabetes, the National Diabetes Information Clearinghouse estimates that between 90-95% of people have type 2 diabetes. An additional 12.5% of Delawarean adults (approximately 78,000 individuals) reported having been diagnosed with pre-diabetes. People with prediabetes are at elevated risk for developing type 2 diabetes but can significantly reduce their risk through lifestyle modification.

Race/ethnicity, sex, education, county of residence, and disability status were not significantly associated with pre-diabetes or diabetes prevalence among Delawareans in 2017. Conversely, age and weight status remain strong predictors of both pre-diabetes and diabetes prevalence among Delawareans. In 2017, pre-diabetes prevalence rates were highest among adults age 55-64 while diabetes prevalence peaked among adults age 65 and older. Obese Delawareans had the highest pre-diabetes and diabetes prevalence rates (22.4% and 19.6%, respectively). Prevalence rates among obese adults were approximately twice as high as pre-diabetes and diabetes prevalence rates among overweight Delawareans.¹⁴

Chronic Disease Risk Factors

A chronic disease risk factor is defined as any factor that makes a person more likely to develop a chronic disease. Non-modifiable, or unchangeable, risk factors include age, race, and personal health history. Modifiable, or changeable, risk factors are health-damaging behaviors like tobacco use, poor diet, lack of physical activity, and being overweight/obese.

The impact of modifiable risk factors on chronic disease risk cannot be underestimated. Forty-two percent of all cancer diagnoses and 45% of all cancer deaths in the U.S. are attributable to modifiable risk factors.¹⁵ Specifically, cigarette smoking accounted for 19% of all cancer cases and 29% of all cancer deaths in 2014. Following tobacco use, excess body weight and alcohol intake have the greatest impact on cancer risk. Excess body weight accounts for 8% of all cancer cases and 7% of all cancer deaths. Alcohol intake accounts for 6% of all cancer cases and 4% of all cancer deaths.¹⁵ As many as 80% of heart disease, stroke, and type 2 diabetes cases are preventable through healthy dietary intake, daily physical activity, and smoking cessation.¹⁶ The risk of developing diabetes is 30-40% greater for active smokers than for non-smokers.¹³

Modifiable risk factor trends increase Delawareans' chronic disease risk. In 2017, 31% of Delaware adults reported no physical activity during the previous 30 days other than their regular job. Forty-two percent of Delaware adults reported eating fewer than one serving of fruits and vegetables per day. In 2016, less than one-third (32%) of Delaware adults were at a normal weight; 37% of Delaware adults were overweight and another 31% were obese. Delawareans age 40-44 have the highest obesity prevalence rate (39%) followed closely by Delawareans age 50-54 (38%).¹⁰ Delaware's adult obesity rate ranks 23rd among states.¹⁷

Delaware's statewide tobacco use prevalence rates have declined over the past two decades. From 2011 to 2017, cigarette smoking prevalence among Delawareans declined from 22% to 17%.¹⁴ Yet, the need for continued anti-tobacco public health efforts remains. Delaware ranks 27th among states in current cigarette use among adults.¹⁸ In 2017, 22% of Delaware adults – more than one-fifth of the state's adult population – used at least one type of tobacco (cigarettes, cigars, e-cigarettes, smokeless tobacco, hookahs, and/or other tobacco products).¹⁴ Cigarette use prevalence is highest among 25-34-year-old Delawareans (26%); 13% of Delawareans age 18-24 and 8% of Delawareans age 65 and older were current smokers in 2017.¹⁴ In 2016, 57% of Delaware smokers reported having tried to quit smoking within the past year.¹⁰ These data highlight the public health opportunity to interface with large numbers of Delawareans who align with the contemplation, preparation, and action stages of the Transtheoretical Model of intentional behavior change theory.¹⁹

Chronic Disease Disparities in Delaware

Health disparities occur when socially disadvantaged groups have higher rates of chronic disease and fewer opportunities to achieve optimal health. Health disparities can exist between people of different ages, races, education level, income level, and county of residence; they are often preventable and correctable. Factors like education, inadequate housing, poor access to healthy foods, lack of health care, and geographic isolation cause health disparities.

Delaware has reduced and/or eliminated several health disparities, most notably closing the gap between African American and Caucasian cancer death rates.⁹ However, several important chronic disease health disparities exist among Delawareans. For example, the 2011-2015 age-adjusted heart disease death rate for African American women in Delaware was 29% greater than the rate for Caucasian women (154.4 per 100,000 vs. 119.8 per 100,000, respectively).¹¹ Twenty-eight percent of Delawareans with less than a high school diploma are current smokers, compared to just 6% of Delawareans who are college graduates.¹² Forty-four percent of Delawareans with a household income of less than \$15,000 have high blood pressure compared to 29% of Delawareans with household income of \$50,000 or more.¹¹ Identifying, reducing, and eliminating preventable health disparities will further reduce Delawareans' chronic disease burden.

Youth Health Behavior Trends

The HPDP Section of DPH monitors youth health trends via the Youth Risk Behavior Surveillance System (YRBSS). YRBSS captures six categories of health-related behaviors that contribute to the leading causes of death and disability among youth and young adults. In 2017, 2,974 middle school students and 2,906 high school students in Delaware completed the YRBSS survey.

Notable health-related trends include declining tobacco and alcohol use rates among Delaware high school students. From 1999 to 2017, the percentage of students who report currently smoking cigarettes fell from 32% to 6%. Conversely, in 2017, 14% of Delaware high school students currently used an

electronic vapor product (including e-cigarettes, e-cigars, e-pipes, vape pipes, vaping pens, e-hookahs, and/or hookah pens).²⁰

Over the same time period, the percentage of students who report currently drinking alcohol fell from 47% to 29%.²⁰ In 2017, fewer than half (44%) of Delaware high school students participated in regular physical activity (defined as 60 minutes of physical activity on at least five of the past seven days); this percentage has remained stable since 2011 when the survey question was added to the YRBSS.²⁰

Conclusion

Across the state, numerous stakeholders have achieved much success in reducing Delaware's chronic disease burden. Through DPH's programming within its HPDP Section, the State remains dedicated to addressing persistent and growing inequities that impact chronic disease development among Delawareans. The annual *Chronic Disease in Delaware: Facts & Figures, 2018* issue brief aligns with Delaware's overall health care reform strategy to achieve improved quality of care, better health outcomes, and reduced health care costs. By monitoring chronic disease trends and identifying Delawareans at elevated risk for chronic disease development, DPH positions itself as a collaborative partner working to achieve cost savings through improved health care resource efficiency.

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