DELAWARE 2021
BEHAVIORAL RISK FACTOR SURVEY

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Part 1

INTRODUCTION

The Behavioral Risk Factor Surveillance System (BRFSS) is a nationwide principal system of telephone surveys that collects health-related data. The data include information on respondents' health-related risk behaviors, chronic health conditions, and use of preventive services The system was first established in 1984 conducting surveys in 15 U.S. states. Currently, all 50 states, the District of Columbia and three U.S. territories participate in the survey. BRFSS continuously collects data at the state and local level, which has made it "a powerful tool for targeting and building health promotion activities" (Centers for Disease Control and Prevention, 2014).

BRFSS surveys noninstitutionalized adults aged 18 years and older who reside in the U.S. In 2021, household landline telephone and cellular telephone interviews were conducted to collect data for BRFSS in all 50 states, the District of Columbia, Guam, the Commonwealth of Puerto Rico, and the U.S. Virgin Islands. Florida was excluded from the 2021 annual aggregate data set since it was unable to collect data over enough months to meet the minimum requirements for inclusion (Centers for Disease Control and Prevention, 2022a).

The 2021 BRFSS interviewed 438,693 adults by landline and cellular telephone (Centers for Disease Control and Prevention, 2022b). BRFSS's objective is to collect "uniform state-specific data on health risk behaviors, chronic diseases and conditions, access to health care, and use of preventive health services related to the leading causes of death and disability in the United States" (Centers for Disease Control and Prevention, 2022c). These publicly available data are a valuable source of information for analysis, decision making, and governmental budget allocations. At the moment, the BRFSS survey is sponsored by numerous agencies, including the CDC National Center for Chronic Disease Prevention and Health Promotion, other CDC centers, and federal agencies, such as the Health Resources and Services Administration, Administration on Aging, Department of Veterans Affairs, and Substance Abuse and Mental Health Services Administration (Centers for Disease Control and Prevention, 2014). Behavioral risk factors are defined as any particular behavior or behavior patterns which strongly affects one's health in an adverse manner, i.e., increase the likelihood that an individual may develop a disorder, disease, or syndrome (American Psychological Association, 2022). Examples of these factors include tobacco use, alcohol consumption, obesity, and physical and sexual activity (Sam, 2013).

The Delaware Division of Public Health (DPH) receives funds from a cooperative agreement with the CDC to operate the state-based Behavioral Risk Factor Survey (BRFS) as part of BRFSS. BRFS is a survey of Delaware's adult population conducted annually. It considers behaviors connected with an increased risk of disease, premature death, and disability (Delaware BRFS, n.d./a).

BRFS has been collecting behavioral risk factor data in Delaware continuously since 1990. It is a random-sample telephone interview survey that is conducted every month of every year with the data being analyzed on a calendar-year basis. The usual annual sample in Delaware includes about 4,000 adults aged 18 and older. BRFS partners with CDC, which provides funding and basic data analysis, as well as with the Delaware Division of Public Health (DPH) (Delaware BRFS, n.d./b).

In 2011, BRFS became a multi-mode survey, i.e., it started conducting interviews using both cell phones and landline phones. This was done to obtain a more representative sample of Delaware's adult population since the number of households in which cell phones were primary or only telephone service had increased rapidly over the past decade (Delaware BRFS, n.d./c). The National Center for Health Statistics estimated in its National Health Interview Survey that in July-December 2021, 68.7 percent of adults in the U.S. lived in wireless-only households (National Center for Health Statistics, 2022). The use of the dual-frame survey that includes both landline and cell phones helps improve the validity, data quality, and representativeness of the survey data (Centers for Disease Control and Prevention, 2022c).

BRFSS is designed in order to obtain sample information on the adult U.S. population in different states. To make sample data more representative of the population from which they were collected, data weighting is used. The weighting methodology of BRFSS consists of design factors or design weight and demographic adjustment of the population. The first weight is used to account for the probability of selection and to adjust for nonresponse bias and non-coverage errors. To adjust for demographic differences between sampled individuals and the population they represent, BRFSS uses iterative proportional fitting, or raking. Raking is performed by “adjusting one or a combination of demographic categories at a time in an iterative process until a convergence of a set value is reached” (Centers for Disease Control and Prevention, 2022c). The final weight assigned to each respondent by BRFSS is _LLCPWT.

The data analyzed in the given report were weighted with _LLCPWT designed for the combined land line and cell phone dataset (Centers for Disease Control and Prevention, 2022c). The objective of the report was to present the BRFSS survey results and provide statistical analysis of the Delawareans’ health and their health behavior patterns. The 2021 BRFSS combined landline and cell phone weighted response rate for Delaware was 3,773, including 767 landline interviews and 3,006 cell phone interviews, which corresponded to 67.2 percent of the weighted American Association for Public Opinion Research (AAPOR) cooperation rate and 39.1 percent of the weighted AAPOR response rate (Centers for Disease Control and Prevention, 2022d). Cooperation rate is generally defined as “the ratio of all cases interviewed out of all eligible units ever contacted,” while a response rate refers to “the ratio of all cases interviewed out of all eligible sample units in the study, not just those contacted” (Basson, 2008).

This report is structured as follows: Part 1 is an Introduction, and Part 2 provides the data and methodology for the 2021 BRFSS. Part 3 covers the results of the *Core Sections* analysis. The *Core Sections* include questions about health conditions, healthcare access, and other health related questions asked in the survey. Part 4 analyzes the *Optional Modules*, i.e., questions on specific topics (e.g., pre-diabetes, marijuana use, tobacco cessation, etc.) that the State of Delaware elected to use on its questionnaire in 2021. Even though the modules were optional, CDC standards required they were used without any modifications (Centers for Disease Control and Prevention, 2022e). Part 5 summarizes the above analyses.

Part 2

DATA AND METHODOLOGY

2.1 Data sources

This report analyzes the 2021 BRFSS data, using raw survey data that records the actual responses of each respondent before any adjustment is made. The raw dataset is downloaded from the CDC website. Other supplemental documents used in this study to help provide a more comprehensive analysis included the 2021 Questionnaire, 2021 BRFSS Overview CDC, 2021 BRFSS Codebook CDC, Calculated Variables and Data Files CDC, BRFSS Combined Landline and Cell Phone Weighted Response Rates by State, 2021 CDC, BRFSS Modules Used by State, Summary Matrix of Calculated Variables (CV) in the 2021 Data File, and 2021 Weighting Formula CDC.

2.2 Questionnaire structure

The BRFSS questionnaire consists of three parts: (1) the core component (the fixed core, rotating core, and emerging core), (2) optional modules, and (3) state-added questions. The fixed core is a standard set of questions that all states use without modification in wording every year. This practice allows states to establish long-term datasets and compare their data with other states' survey results. The fixed core includes questions regarding demographic characteristics and health behaviors, such as tobacco use and seatbelt use. The rotating core has two distinct sets of questions, each asked in alternating years by all states. In the year that rotating core questions are not used, they are supported as optional modules. The emerging core is a set of up to five questions that typically focus on "late breaking" issues and are evaluated after a year to decide whether they should be used in future surveys (Centers for Disease Control and Prevention, 2022e). CDC designs several optional modules that contain questions on specific topics (e.g., HPV Vaccination) and offers a list of topics to the states to choose from (Ibid.). Individual states can select optional modules that meet the state's interests or needs. For example, the 2021 Questionnaire had 28 optional modules, and Delaware selected 10 modules from the list.

If space is available, states can design and add local questions to meet state-specific needs. This types of questions are not analyzed by CDC, therefore, in Delaware, any Delaware Division of Public Health (DPH) program that requests the introduction of local questions into the questionnaire, must provide funds for field testing and data analysis. The Delaware BRFS has defined procedures and criteria for selecting state-added questions and/or modules in a given year. The BRFS program has also established an advisory committee for the purpose of reviewing requests (Delaware BRFS, n.d./d).[1]

Table 1 lists the core sections and modules used in Delaware in 2021. As indicated above, questions in the core sections were designed by CDC, and all the states and territories participating in BRFSS that year asked the same core component questions. Ten optional modules were selected for the 2021 BRFS, including pre-diabetes, diabetes, HPV vaccination, three cancer survivorship modules (type of cancer, course of treatment, and pain management), home/self-measured blood pressure, caregiver, marijuana use, and tobacco cessation.

[1] As of the writing of the report, no information on state-added questions was available for the State of Delaware 2021 BRFS, therefore, only the core component questions as well as questions from the optional modules are analyzed here.

Table 1: Delaware 2021 Questionnaire Structure

Core Sections	
Section 1	Health Status
Section 2	Healthy Days
Section 3	Health Care Access
Section 4	Exercise
Section 5	Hypertension Awareness
Section 6	Cholesterol Awareness
Section 7	Chronic Health Conditions
Section 8	Arthritis
Section 9	Demographics
Section 10	Disability
Section 11	Tobacco Use
Section 12	Alcohol Consumption
Section 13	Immunization
Section 14	HIV/AIDS
Section 15	Fruits and Vegetables
Optional Modules	
Module 1	Pre-Diabetes
Module 2	Diabetes
Module 5	HPV Vaccination
Module 13	Cancer Survivorship: Type of Cancer
Module 14	Cancer Survivorship: Course of Treatment
Module 15	Cancer Survivorship: Pain Management
Module 16	Home/Self-Measured Blood Pressure
Module 19	Caregiver
Module 21	Marijuana Use
Module 22	Tobacco Cessation

Source: Centers for Disease Control and Prevention, 2022f; Centers for Disease Control and Prevention, 2022g.

2.3 Data analysis

This study generalizes the prevalence rates from a sample (n = 3,640) to the population using the weighting variable "_LLCPWT". Data weighting is necessary to avoid counting each record the same as any other record and make sample data more representative of the population from which they were collected (Centers for Disease Control and Prevention, 2020a; Centers for Disease Control and Prevention, 2022c). The CDC uses weighting methodology comprised of design weight and raking. Design weight adjusts the unequal probability of sample selection, and raking, or iterative proportional fitting, adjusts demographic differences between those persons who are sampled and the population they represent (Centers for Disease Control and Prevention, 2022h). Thus, weighted BRFSS data represent results that have been adjusted to compensate for variation in the respondents' probability of selection, disproportionate selection of population subgroups relative to the state's population distribution, or nonresponse (Centers for Disease Control and Prevention, 2022a). BRFSS produces the _LLCPWT final weight which is assigned to each respondent (Centers for Disease Control and Prevention, 2022c). Table 2 summarizes the 2021 survey sample size and the percentage distribution among various demographic groups, as well as the weighted percentage and estimated population.

Table 2: 2021 Survey Summary				
	Sample		Weighted Estimated Population	
	%	Sample Size	Wt. %	Est. Pop.
Total	100%	3,640	100%	797,849
AGE				
18-24	5.8%	210	10.9%	87,192
25-34	10.2%	373	15.9%	126,649
35-44	13.4%	488	15.1%	120,374
45-54	15.5%	654	14.6%	116,671
55-64	20.7%	752	17.4%	139,052
65 or older	34.4%	1,253	26.1%	207,911
GENDER				
Male	44.7%	1,626	47.8%	381,013
Female	55.3%	2,014	52.2%	416,836
RACE-ETHNICITY				
White only, non-Hispanic	67.9%	2471	62.6%	499,215
Black only, non-Hispanic	15.2%	553	20.8%	165,774
Other race only, non-Hispanic	3.4%	123	4.7%	37,775
Multiracial, non-Hispanic	2.1%	76	1.4%	11,147
Hispanic	9.1%	332	8.3%	66,108
Don’t know/not sure/refused	2.3%	85	2.2%	17,830
EDUCATION				
Did not graduate from High School	6.5%	236	10.0%	79,751
Graduated High School	25.5%	927	31.4%	250,451
Attended College or Technical School	26.3%	957	28.3%	225,719
Graduated from College or Technical School	41.0%	1491	29.6%	236,081
HOUSEHOLD INCOME				
Less than $15,000	3.8%	138	3.6%	28,798
$15,000-$24,999	7.9%	286	7.7%	61,476
$25,000-$34,999	10.3%	374	9.9%	78,880
$35,000-$49,999	10.3%	374	10.7%	85,224
$50,000-$99,999	25.7%	936	24.2%	192,898
$100,000-$199,999	16.6%	605	17.2%	137,029
$200,000 or more	4.0%	146	4.3%	34,694

This report presents a confidence interval (C.I.), which is the range of estimates within which the actual prevalence can be found, for each prevalence rate estimate. The Delaware Division of Public Health (DPH) defines prevalence as "the percentage of a population that is affected with a particular disease, condition or behavior at a given time, in this case a calendar year" (Delaware BRFS, n.d./e). Prevalence indicates how widely the disease or condition is spread in a population. The C.I. reflects the range of variation in the estimation. The 95 percent C.I. means that if a survey were to be conducted 100 times, 95 of the surveys would have responses within that C.I. range. Conducting a survey at the 95 percent confidence level implies a very high level of confidence that the results are valid (Ibid.). A wide confidence interval reflects a large amount of variability or imprecision. A narrow confidence interval reflects little variability and high precision. Thus, the narrower the confidence interval, the greater the precision (Centers for Disease Control and Prevention, 2013). Additionally, if the C.I. between two estimates does not overlap, this indicates a statistically significant difference, meaning the likelihood that a relationship between two prevalence variables is caused by something other than chance (Delaware BRFS, n.d./e). For example, Table 3 shows the percentage of good or better health conditions among males and females. The difference between males and females is not statistically significant because the C.I. overlaps.

Table 3: Subjective Evaluations of General Health as Good or Better

	Wt.100%	95% C.I.	Est. Pop.
Male	85.7	[83.4, 87.8]	326,389
Female	84.9	[82.7, 86.9]	353,952

Part 3

CORE SECTIONS

Section 1: Health Status

The objective of BRFSS is “to collect uniform state-specific data on health risk, behaviors, chronic diseases and conditions, access to health care, and use of preventive health services related to the leading causes of death and disability in the United States” (Centers for Disease Control and Prevention, 2022c). In 2021, BRFSS assessed a number of factors beginning with the health status. Respondents were asked to assess their general health status choosing among the following options: excellent, very good, good, fair, and poor.

The way Delaware adults perceived their health status was comparable to that of respondents across the nation. While in the United States 19.2 percent of respondents assessed their health as “excellent”, 32.4 percent – as “very good” and 31.9 percent – as “good”, in Delaware the results were 19.5 percent, 33.1 percent, and 32.7 percent respectively. In the U.S., 16.2 percent of respondents assessed their health as “fair” or “poor”, and in Delaware there were 14.6 percent of such respondents (Table 4).

Table 4: Health Status in Delaware and the U.S.

	Delaware Wt. %	U. S. Wt. %
Excellent	19.5	19.2
Very good	33.1	32.4
Good	32.7	31.9
Fair	11.1	12.4
Poor	3.5	3.8
Don’t know/Not sure	0.1	0.2
Refused	0.0	0.1

Although positive subjective evaluation of general health declines with age, still over 80 percent of respondents in Delaware aged 65 or older assessed their health as “good” or “better” (Table 5). The highest rate of “good” or “better” health was in the age group of 18- to 24-year-olds, i.e., the youngest Delawareans surveyed. Over 93 percent of them assessed their health as “good” or “better”. Surprisingly, respondents in the age group of 35–44-year-olds assessed their general health slightly worse than respondents in the two subsequent age groups of 45–54-year-olds and 55–64-year-olds: 83.9 percent vs. 86.1 percent and 84.4 percent, respectively.

Males and females had very similar perceptions of their general health, with the difference comprising only 0.8 percentage points. At 82.3 percent, Hispanic respondents had the smallest share of respondents among them who reported their general health was “good” or “better”, while Other race/non-Hispanic respondents had the largest share of such individuals at 92.8 percent.

Individuals with higher levels of education and those with higher levels of income also tended to perceive their general health as “good” or “better” more often than their peers with lower levels of education and income. For example, 92.6 percent of those who graduated from college or technical school assessed their general health as “good” or “better” vs. 74.3 percent of those who did not graduate from high school. Th difference was statistically significant. At the same time, 93.1 percent of respondents with an income of $200,000 or more perceived their health as “good” or “better” as opposed to 62.4 percent of respondents with an annual income of $15,000 or less. Again, the difference was statistically significant.

Table 5: Subjective Evaluations of General Health						
	"Good" or "Better" health			"Fair" or "Poor" health		
	Wt. %	95% C.I.	Est. Pop.	Wt. %	95% C.I.	Est. Pop.
Total	85.3	[83.7, 86.7]	680,341	14.6	[13.1, 16.2]	116,366
AGE						
18-24	93.6	[88.4, 96.6]	81,646	6.4	[3.4, 11.6]	5,545
25-34	88.9	[84.2, 92.4]	112,640	11.1	[7.6, 15.8]	14,008
35-44	83.9	[78.5, 88.2]	101,031	16.1	[11.8, 21.5]	19,342
45-54	86.1	[82.3, 89.3]	100,509	13.9	[10.7, 17,7]	16,161
55-64	84.4	[80.9, 87.4]	117,379	15.1	[12.2, 18.6]	21,014
65 or older	80.4	[77.3, 83.1]	167,134	19.4	[16.6, 22.5]	40,294
GENDER						
Male	85.7	[83.2, 87.8]	326,389	14.3	[12.1, 16.7]	54,305
Female	84.9	[82.7, 86.9]	353,952	14.9	[13.0, 17.1]	62,061
RACE-ETHNICITY						
White/Non-Hispanic	85.5	[83.9, 87.5]	428,110	14.1	[12.4, 16.0]	70,590
Black/Non-Hispanic	83.7	[79.1, 87.4]	138,702	16.3	[12.6, 20.9]	27,071
Other race/Non-Hispanic	92.8	[86.9, 96.2]	35,070	5.7	[3.1, 10.4]	2,152
Multiracial/Non-Hispanic	85.7	[74.8, 92.3]	9,551	14.3	[7.7, 25.2]	1,595
Hispanic	82.3	[75.0, 87.2]	54,405	17.7	[12.8, 24.0]	11,702
EDUCATION						
Did not graduate from High Sch	74.3	[66.7, 80.7]	59,252	24.9	[18.6, 32.4]	19,839
Graduated High School	82.3	[78.9, 85.2]	206,158	17.6	[14.6, 20.9]	43,974
Attended College or Tech Sch	84.9	[81.9, 87.4]	191,579	15.1	[12.5, 18.1]	34,050
Graduated College or Tech Sch	92.6	[90.8, 94.0]	218,512	7.4	[6.0, 9.1]	17,493
HOUSEHOLD INCOME						
Less than $15,000	62.4	[51.0, 72.6]	17,967	37.3	[27.1, 48.7]	10,740
$15,000-$24,999	71.2	[63.4, 78.0]	43,788	28.6	[21.8, 36.5]	17,581
$25,000-$34,999	82.5	[76.7, 87.1]	65,072	16.8	[12.4, 22.4]	13,254
$35,000-$49,999	79.0	[72.2, 84.5]	67,308	21.0	[15.5, 27.8]	17,915
$50,000-$99,999	89.5	[86.8, 91.8]	172,710	10.5	[8.2, 13.2]	20,188
$100,000-$199,999	94.1	[91.4, 96.0]	128,947	5.9	[4.0, 8.6]	8,081
$200,000 or more	93.1	[85.1, 97.0]	32,301	6.9	[3.0, 14.9]	2,391

Section 2: Healthy Days

In addition to the general health status, respondents were asked questions about their physical and mental health. They were asked for how many days in the past 30 days their physical and mental health was not good. Physical health included illness and injury, whereas mental health included stress, depression, and problems with emotions. Tables 6 and 7 provide the results. As it follows from the tables, a majority of adults in Delaware felt well physically and/or mentally within the past 30 days at the time of the interview. However, over 10 percent of adults did not feel well physically and over 12 percent did not feel well mentally over the same period of time. The numbers in Delaware were comparable to those across the U.S.

Respondents' physical and mental health might have been affected by the COVID-19 pandemic. The results in the 2019 and 2020 BRFSS surveys were similar to the ones in the 2021 survey. However, in 2020, more people reported that they had zero days when their physical or mental health was not good than in 2021(Chen, 2021).

Table 6: Physical health status

	Delaware Wt. %	U.S. Wt. %
Zero days when physical health was not good	67.0	66.5
1-13 days when physical health was not good	20.5	20.7
14+ days when physical health was not good	10.7	10.8
Don't know/Refused/Missing	1.8	2.0

Table 7: Mental health status

	Delaware Wt. %	U.S. Wt. %
Zero days when mental health was not good	61.7	58.4
1-13 days when mental health was not good	23.6	25.5
14+ days when mental health was not good	12.7	14.4
Don't know/Refused/Missing	2.0	1.8

Table 8 presents the results of respondents' answers to the question about the number of days they felt physically or mentally not well according to their socio-demographic characteristics.

Table 8: Physical and Mental Health Status						
	Zero days when physical health was not good			Zero days when mental health was not good		
	Wt. %	95% C.I.	Est. Pop.	Wt. %	95% C.I.	Est. Pop.
Total	67.0	[64.9, 69.1]	534,691	61.7	[59.5, 63.9]	492,450
AGE						
18-24	67.7	[58.5, 75.7]	59,018	44.0	[35.8, 52.4]	38,323
25-34	67.4	[61.1, 73.1]	85,346	47.6	[41.3, 54.0]	60,262
35-44	66.4	[60.4, 71.9]	79,939	59.7	[53.8, 65.3]	71,866
45-54	68.3	[63.5, 72.8]	79,719	65.3	[60.0, 70.2]	76,164
55-64	63.4	[58.7, 67.8]	88,133	64.8	[60.3, 69.1]	90,109
65 or older	68.6	[65.2, 71.8]	142,534	74.9	[71.7, 77.9]	155,723
GENDER						
Male	68.7	[65.6, 71.7]	261,933	67.9	[64.7, 70.8]	258,564
Female	65.4	[62.5, 68.3]	272,758	56.1	[53.1, 59.1]	233,886
RACE-ETHNICITY						
White/Non-Hispanic	66.4	[63.8, 68.9]	331,395	61.2	[58,5, 63.8]	305,375
Black/Non-Hispanic	63.3	[57.8, 68.5]	104,936	61.1	[55.5, 66.3]	101,238
Other race/Non-Hispanic	77.7	[66.4, 86.0]	29,348	64.2	[52.5, 74.4]	24,257
Multiracial/Non-Hispanic	60.3	[46.1, 72.9]	6,719	53.4	[35.7, 66.7]	5,946
Hispanic	75.1	[68.7, 80.5]	49,641	65.3	[58.0, 71.9]	43,172
EDUCATION						
Did not graduate from High Sch	64.4	[56.2, 72.0]	51,398	72.0	[64.3, 78.6]	57,413
Graduated High School	66.3	[62.0, 70.4]	166,122	60.2	[55.8, 64.4]	150,681
Attended College or Tech Sch	63.1	[58.9, 67.0]	142,402	59.2	[55.1, 63.3]	133,682
Graduated College or Tech Sch	72.1	[69.3, 74.9]	170,324	62.1	[58.9, 65.2]	146,618
HOUSEHOLD INCOME						
Less than $15,000	54.2	[42.9, 65.2]	15,612	55.6	[44.3, 66.4]	16,024
$15,000-$24,999	58.8	[50.6, 66.6]	36,154	55.0	[46.6, 63.0]	33,787
$25,000-$34,999	60.1	[53.4, 66.4]	47,393	52.1	[45.4, 58.7]	41,094
$35,000-$49,999	59.9	[52.2, 67.1]	51,028	60.4	[52.9, 67.4]	51,444
$50,000-$99,999	69.0	[64.8, 72.9]	133,064	61.1	[56.7, 65.3]	117,838
$100,000-$199,999	73.2	[68.2, 77.7]	100,324	63.5	[58.2, 68.5]	87,019
$200,000 or more	78.0	[67.9, 85.6]	27,061	72.4	[61.7, 81.0]	25,105

Section 3: Health Care Access

The 2021 BRFSS survey collected information about Delaware adults' health care coverage, including plans purchased through employers or unions, private nongovernmental plans that respondents purchased on their own, Medicare, Medicaid, Children's Health Insurance Program (CHIP), etc. This section reviews how many Delawareans aged 18 and above and 18 to 64 had any form of health insurance in 2021.

Almost 89 percent of Delaware adults aged 18 and above had some form of health insurance in 2021, which was only 1.6 percentage points higher than across the U.S (Table 9). On the contrary, if one only considered adults in the age group between 18 and 64, it was obvious that the extent of health care coverage dropped significantly: 62.6 percent in Delaware and 64.9 percent in the U.S. A considerable number of respondents aged 18 to 64, both in Delaware and the U.S., did not know or refused to answer the question whether they had any health care coverage: 30.6 percent and 27.2 percent respectively.

Table 9: Health Care Coverage in Delaware and the U.S.

	Age 18 and above		Age 18 to 64	
	Delaware Wt. %	U.S. Wt. %	Delaware Wt. %	U.S. Wt. %
Have some form of insurance	88.8	87.2	62.6	64.9
Do not have insurance	6.9	8.2	6.8	7.9
Don't know/ Refused/Missing	4.3	4.7	30.6	27.2

Table 10 provides information on health care coverage for respondents aged 18 and above across various demographic characteristics. In Delaware, in 2021, more women than men had health insurance: 91.3 percent vs. 86.1 percent. As for respondents in different age groups, the older the respondents were, the more of them had health coverage. While in the age group of 18–24-year-olds, 74.2 percent of respondents had health insurance, in the age group of 65-year-olds and older, 95.7 percent had health care coverage.

Among representatives of different race and ethnic groups, Hispanic respondents had the lowest level of coverage. Only 57.8 percent of them had any form of health insurance. At the same time, White/non-Hispanic respondents, and Black/non-Hispanic respondents had the most coverage: 92.8 percent and 91.1 percent, respectively. Respondents' levels of education and income seemed to impact the rates of coverage: the higher the levels of education and income were, the more respondents had some form of health insurance. For example, among respondents who did not graduate from high school, 67.4 percent had health care coverage, while among respondents who graduated from college or technical school, 96.1 percent had health insurance. Among respondents who were making less than $15,000 annually, 71.7 percent were covered as compared to 97.6 percent of respondents whose annual income was $200,000 or more. In every demographic group, the difference between the lowest and the highest levels of coverage was statistically significant.

Numbers for respondents aged 18 to 64 are shown in Table 11. Without the group of respondents aged 64 and above, the rate of access to health care fell from 88.8 percent to 62.6 percent. Nevertheless, women were still slightly better covered than men, and more older people had health insurance than younger people. Hispanic respondents still had the lowest level of access to health care at 53 percent as compared to respondents from other race and ethnic groups. Interestingly, however, White/non-Hispanic, and Black/non-Hispanic respondents turned out to have less access to health care than respondents in the groups of Other race/non-Hispanic and Multiracial/non-Hispanic: 60.0 percent and 71.3 percent vs. 80.7 percent and 74.2 percent. The level of education and income continued to be a factor correlated with the level of health care coverage. That is, the better educated people were or the more money they were making, the larger share of them had health insurance. However, more people with an income of less than $15,000 had health care coverage than people with an income of up to $24,999: 58.3 percent vs. 48.1 percent. The same was true for those who were making between $100,000 and $199,999 and those making $200,000 and more: among the former, 81.0 percent had health insurance, whereas among the latter – 72.6 percent had it.

Table 10: Health Care Access (age 18 and above)			
	Wt. %	95% C.I.	Est. Pop.
Total	88.8	[87.2, 90.2]	708,470
AGE			
18-24	74.2	[66.5, 80.6]	64,693
25-34	81.2	[75.7, 85.7]	102,817
35-44	87.4	[83.2, 90.7]	105,208
45-54	90.2	[86.5, 92.9]	105,189
55-64	94.6	[92.1, 96.4]	131,559
65 and over	95.7	[93.8, 97.0]	199,002
GENDER			
Male	86.1	[83.6, 88.2]	328,041
Female	91.3	[89.2, 92.9]	380,429
RACE-ETHNICITY			
White/Non-Hispanic	92.8	[91.2, 94.2]	463,362
Black/Non-Hispanic	91.1	[87.2, 93.8]	150,950
Other race/Non-Hispanic	89.8	[81.0, 94.8]	33,932
Multiracial/Non-Hispanic	83.5	[67.0, 92.6]	9,303
Hispanic	57.8	[50.3, 65.0]	38,241
EDUCATION			
Did not graduate from High School	67.4	[59.3, 74.6]	53,764
Graduated High School	85.6	[82.4, 88.4]	214,444
Attended College or Technical School	92.8	[90.1, 94.8]	209,483
Graduated College or Technical School	96.1	[94.5, 97.3]	226,928
HOUSEHOLD INCOME			
Less than $15,000	71.7	[59.8, 81.1]	20,641
$15,000-$24,999	80.5	[73.3, 86.1]	49,503
$25,000-$34,999	85.1	[79.4, 89.4]	67,105
$35,000-$49,999	87.1	[80.8, 91.5]	74,218
$50,000-$99,999	95.7	[93.6, 97.1]	184,614
$100,000-$199,999	96.4	[93.4, 98.0]	132,052
$200,000 or more	97.6	[93.3, 99.2]	33,868

Table 11: Health Care Access (age 18 to 64)			
	Wt. %	95% C.I.	Est. Pop.
Total	62.6	[60.6, 64.7]	499,689
AGE			
18-24	74.2	[66.5, 80.6]	64,693
25-34	81.2	[75.7, 85.7]	102,817
35-44	86.9	[82.7, 90.2]	104,623
45-54	85.6	[81.5, 88.9]	99,841
55-64	91.8	[88.4, 94.3]	127,713
65 and over	--	[--]	--
GENDER			
Male	61.1	[58.1, 64.1]	232,936
Female	64.0	[61.1, 66.8]	266,752
RACE-ETHNICITY			
White/Non-Hispanic	60.0	[57.4, 62.4]	299,313
Black/Non-Hispanic	71.3	[66.2, 75.9]	118,226
Other race/Non-Hispanic	80.7	[71.4, 87.5]	30,485
Multiracial/Non-Hispanic	74.2	[59.0, 85.2]	8,272
Hispanic	53.0	[45.6, 60.3]	35,066
EDUCATION			
Did not graduate from High School	49.1	[40.6, 57.7]	39,164
Graduated High School	60.0	[55.9, 63.9]	150,212
Attended College or Technical School	64.9	[61.1, 68.6]	146,519
Graduated College or Technical School	68.2	[65.3, 71.0]	161,046
HOUSEHOLD INCOME			
Less than $15,000	58.3	[46.9, 69.0]	16,795
$15,000-$24,999	48.1	[39.9, 56.5]	29,596
$25,000-$34,999	55.8	[49.2, 62.2]	44,006
$35,000-$49,999	57.1	[50.0, 63.8]	48,620
$50,000-$99,999	69.7	[65.9, 73.3]	134,487
$100,000-$199,999	81.0	[77.1, 84.3]	110,963
$200,000 or more	72.6	[63.5, 80.1]	25,176

Section 4: Exercise

In the next Core Section, respondents were asked whether in the past month they participated in any physical activity or exercises including running, calisthenics, golf, gardening, or walking for exercise. The physical activity was not supposed to include respondents' regular job. The results are presented in Table 12.

As it follows from the table, Delaware adults in the youngest age group exercised the most, and adults in the oldest age group exercised the least: 78.7 percent vs. 66.6 percent. More men exercised than women: 77.5 percent vs. 68.0 percent. Fewer Hispanic respondents exercised than respondents in any other race/ethnic group. The level of education and income again seemed to be correlated with the number of people exercising: the more educated respondents were or the more money they were making, the more of them tended to exercise. As with health care coverage, the difference between the lowest numbers of those who participated in any physical activity and the highest numbers in every demographic group proved to be statistically significant.

Table 12: Exercise (Physical Activity)			
	Had physical activity or exercise during the past month other than their regular job		
	Wt. %	95% C.I.	Est. Pop.
Total	72.5	[70.5, 74.4]	578,552
AGE			
18-24	78.7	[71.2, 84.7]	68,643
25-34	75.2	[69.0, 80.5]	95,216
35-44	77.6	[72.5, 82.0]	93,435
45-54	74.2	[69.1, 78.7]	86,541
55-64	69.2	[64.6, 73.5]	96,210
65 and over	66.6	[63.0, 70.0]	138,504
GENDER			
Male	77.5	[74.7, 80.1]	295,215
Female	68.0	[65.1, 70.7]	283,336
RACE-ETHNICITY			
White/Non-Hispanic	74.3	[72.0, 76.6]	371,140
Black/Non-Hispanic	71.1	[66.1, 75.6]	117,836
Other race/Non-Hispanic	66.1	[52.9, 77.1]	24,955
Multiracial/Non-Hispanic	82.1	[71.5, 89.4]	9,156
Hispanic	61.6	[54.1, 68.6]	40,721
EDUCATION			
Did not graduate from High School	47.7	[39.3, 56.3]	38,038
Graduated High School	68.8	[64.9, 72.5]	172,371
Attended College or Technical School	73.1	[69.5, 76.5]	165,092
Graduated College or Technical School	84.0	[81.5, 86.2]	193,307
HOUSEHOLD INCOME			
Less than $15,000	51.9	[40.6, 63.1]	14,953
$15,000-$24,999	58.4	[49.9, 66.4]	35,889
$25,000-$34,999	60.7	[54.1, 66.9]	47,880
$35,000-$49,999	71.1	[64.4, 77.0]	60,584
$50,000-$99,999	77.6	[73.8, 81.0]	149,656
$100,000-$199,999	85.0	[80.9, 88.3]	116,439
$200,000 or more	88.8	[80.7, 93.7]	30,803

Sections 5 and 6: Hypertension and Cholesterol Awareness

Hypertension, or high blood pressure, is higher than normal blood pressure. Even though blood pressure normally changes during the day, if it stays high for a prolonged period of time, it may lead to health problems and damage one’s heart (Centers for Disease Control and Prevention, 2022i). It may increase the risk of stroke and heart disease, which are considered to be two primary causes of death in the U.S. This condition usually has no symptoms, so it is important to get one’s blood pressure measured regularly (Centers for Disease Control and Prevention, 2022j). Another reason that may increase the probability of heart disease and stroke is too much cholesterol. According to the American Heart Association (2022), almost two in five adults in the U.S. have high cholesterol (Tsao et al., 2022). Just like hypertension, high cholesterol has neither signs, nor symptoms. Therefore, it is as essential to get one’s cholesterol checked on a regular basis as to have one’s blood pressure measured.

In Core Sections 5 and 6, respondents were asked if they had ever been told by a doctor, nurse, or other health professional that their blood pressure or cholesterol was high. The results are presented in Tables 13 through 15. As follows from Tables 13 and 14, in Delaware, fewer people were told by a health professional that they had high blood pressure or high cholesterol than people who were not told that: 36.1 percent vs. 63.5 percent and 37.5 percent vs. 62.0 percent, respectively. The response rates in Delaware were close to the ones in the U.S.: 32.7 percent vs. 66.9 percent and 35.3 percent vs. 63.9 percent, respectively.

The numbers in Table 15 indicate that the older the respondents were, the more often they were told they had high blood pressure or high cholesterol. In the age group of 18- to 24-year-olds, only 8.1 percent of respondents had high blood pressure and 13.9 percent had high cholesterol, whereas in the age group of respondents aged 65 or older, 62.0 percent had high blood pressure and 53.5 percent had high cholesterol. Slightly more males had high blood pressure and high cholesterol than females: 37.5 percent vs. 34.8 percent and 39.5 percent vs. 35.7 percent, respectively. In the race/ethnicity groups, Black/non-Hispanic respondents had the largest share of those who had high blood pressure (42.7 percent), and the largest number of White/non-Hispanic respondents had high cholesterol (40.5 percent).

No obvious correlation was discovered between high blood pressure and high cholesterol and respondents' level of education or income. For example, most respondents with hypertension were among those who graduated from high school or attended college or technical school (37.8 percent and 37.6 percent). At the same time, the largest numbers of respondents with high cholesterol were among college or technical school graduates and among those who did not graduate from high school (39.6 percent and 39.2 percent). As for the income level, the largest numbers of respondents with high blood pressure were among those with the annual income of $25,000-$34,999 and $15,000-$24,999 (40.0 percent and 50.0 percent); whereas respondents with $200,000 or more and $15,000-$24,999 income per year had the largest numbers of those with high cholesterol (40.7 percent and 50.7 percent).

Table 13: Hypertension Awareness

	Delaware Wt. %	U.S. Wt. %
Were not told their pressure was high by health professional	63.5	66.9
Were told their pressure was high by health professional	36.1	32.7
Don't know/Not Sure/Refused/Missing	0.4	0.4

Table 14: Cholesterol Awareness

	Delaware Wt. %	U.S. Wt. %
Had their blood cholesterol checked but were not told it was high	62.0	63.9
Had their blood cholesterol checked and were told it was high	37.5	35.3
Don't know/Not Sure/Refused/Missing	0.6	0.7

Table 15: Hypertension and Cholesterol Awareness

	Were told their pressure was high by health professional			Had their blood cholesterol checked, were told it was high		
	Wt. %	95% C.I.	Est. Pop.	Wt. %	95% C.I.	Est. Pop.
Total	36.1	[34.1, 38.2]	287,949	37.5	[35.3, 39.7]	260,355
AGE						
18-24	8.1	[4.7, 13.6]	7,020	13.9	[7.5, 24.4]	6,729
25-34	13.6	[9.9, 18.5]	17,287	18.1	[13.2, 24.3]	17,113
35-44	26.5	[21.3, 32.4]	31,874	21.8	[17.1, 27.5]	23,664
45-54	32.6	[28.8, 37.6]	38,039	37.6	[32.4, 43.1]	40,983
55-64	46.7	[42.0, 51.3]	64,868	48.3	[43.6, 53.0]	65,658
65 or older	62.0	[58.4, 65.4]	128,857	53.5	[49.8, 57.1]	106,206
GENDER						
Male	37.5	[34.6, 40.5]	142,987	39.5	[36.2, 42.8]	129,415
Female	34.8	[32.0, 37.6]	144,962	35.7	[32.8, 38.7]	130,940
RACE-ETHNICITY						
White/Non-Hispanic	37.6	[35.2, 40.1]	187,707	40.5	[37.9, 43.1]	178,643
Black/Non-Hispanic	42.7	[37.4, 48.1]	70,794	33.6	[28.3, 39.5]	49,970
Other race/Non-Hispanic	28.7	[19.4, 40.3]	10,844	30.9	[21.4, 42.4]	9,821
Multiracial/Non-Hispanic	28.9	[17.7, 43.3]	3,215	38.1	[24.2, 54.1]	3,593
Hispanic	15.6	[11.1, 21.6]	10,333	25.6	[19.0, 33.6]	12,541
EDUCATION						
Did not graduate from High Sch	35.0	[27.5, 43.3]	27,899	39.2	[30.6, 48.4]	25,982
Graduated High School	37.8	[33.9, 41.9]	94,728	34.4	[30.2, 38.9]	71,606
Attended College or Tech Sch	37.6	[33.8, 41.5]	84,806	38.0	[34.0, 42.2]	73,684
Graduated College or Tech Sch	33.7	[30.8, 36.7]	79,581	39.6	[36.5, 42.8]	87,879
HOUSEHOLD INCOME						
Less than $15,000	33.6	[24.1, 44.7]	9,672	35.7	[25.1, 47.9]	8,071
$15,000-$24,999	50.0	[41.7, 58.3]	30,748	50.7	[42.2, 59.2]	25,509
$25,000-$34,999	40.0	[33.8, 46.6]	31,584	33.7	[27.4, 40.6]	20,950
$35,000-$49,999	36.6	[30.2, 43.4]	31,163	37.1	[30.5, 44.3]	26,919
$50,000-$99,999	35.6	[31.7, 39.6]	68,603	38.2	[34.0, 42.6]	67,517
$100,000-$199,999	33.1	[28.5, 38.0]	45,288	35.9	[31.0, 41.0]	45,309
$200,000 or more	33.4	[24.6, 43.6]	11,591	40.7	[31.1, 51.1]	13,039

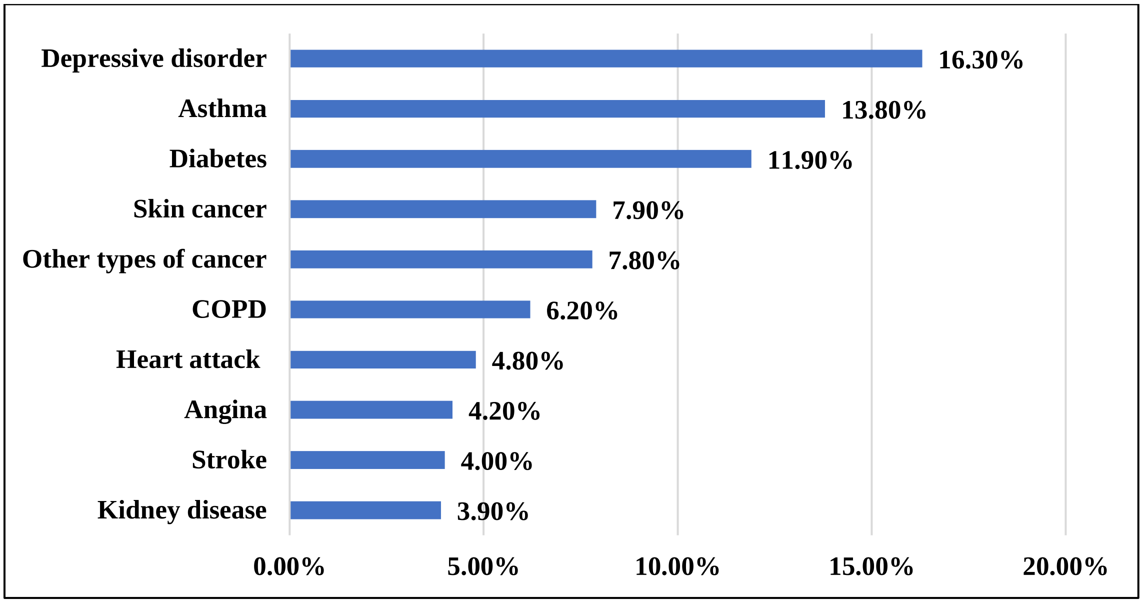
Section 7: Chronic Health Conditions

According to CDC, chronic diseases can be broadly defined as “conditions that last 1 year or more and require ongoing medical attention or limit activities of daily living or both” (Centers for Disease Control and Prevention, 2022k). Chronic diseases like heart disease, stroke, cancer, or diabetes are the leading causes of death and disability in America affecting six out of ten Americans (Centers for Disease Control and Prevention, 2022l). Additionally, chronic diseases take an economic toll. The cost of heart disease and stroke to the health care system, for example, is estimated to be $216 billion per year (Benjamin et al., 2018). The cost of cancer care keeps rising and is estimated to be over $240 billion by 2030 (Mariotto et al., 2020). The total cost of diabetes in medical costs and lost productivity was estimated to be $327 billion in 2017 (American Diabetes Association, 2018).

The chronic health condition section is a core component of BRFSS, and some types of chronic diseases are surveyed every year, while others are included in the questionnaire every other year. In 2021, ten types of chronic diseases were surveyed in Delaware: heart attack, angina, stroke, asthma, skin cancer, other types of cancer, chronic obstructive pulmonary disease (COPD), depressive disorder, kidney disease, and diabetes. Figure 1 presents the chronic disease prevalence rates among Delaware adults in 2021. Depressive disorder stands out as the most prevalent disease in Delaware, with the rate of 16.3 percent.

Figure 1

BRFSS 2021 Chronic Disease Prevalence in Delaware



Source: Centers for Disease Control and Prevention, 2022f.

Table 16 lists the prevalence rates and the estimated populations with chronic conditions in Delaware based on the 2021 BRFSS. The chronic diseases prevalence in Delaware shared a similar pattern with that of the U.S. with respect to all types of chronic conditions. In 2021, depressive disorder, asthma, and diabetes were the three most widely prevalent chronic diseases in Delaware, as well as in the entire nation. In particular, the depressive disorder rate was 16.3 percent in Delaware and 19.4 percent in the U.S.; the rates for asthma were 13.8 percent and 14.6 percent, respectively, whereas for diabetes they were 11.9 percent and 11.4 percent, respectively.

Table 16: Chronic Disease Prevalence				
	Delaware			U.S.
	Wt. %	95% C.I.	Est. Pop.	Wt. %
Heart attack (myocardial infraction)	4.8	[3.9, 5.8]	38,199	4.0
Angina or coronary heart disease	4.2	[3.5, 4.9]	33,146	3.8
Stroke	4.0	[3.2, 4.9]	31,618	3.2
Asthma	13.8	[12.3, 15.5]	110,363	14.6
Skin cancer	7.9	[6.9, 8.9]	62,823	6.1
Other types of cancer	7.8	[6.9, 8.8]	62,072	7.0
C.O.P.D. (chronic obstructive pulmonary disease), emphysema or chronic bronchitis	6.2	[5.3, 7.3]	49,693	6.4
Depressive disorder (including depression, major depression, dysthymia, or minor depression)	16.3	[14.7, 18.0]	129,763	19.4
Kidney disease	3.9	[3.1, 4.8]	30,995	3.1
Diabetes	11.9	[10.6, 13.4]	95,089	11.4

Depressive Disorder

In the 2021 BRFSS, depressive disorder included depression, major depression, dysthymia, and minor depression. CDC maintains that depression is not just feeling down or having a bad day. People may be depressed if their sad mood is long-lasting and interferes with their usual everyday functioning (Centers for Disease Control and Prevention, 2022m). The American Psychiatric Association (2013) provides the following depression symptoms:

- Feeling sad or anxious often or all the time
- Not wanting to do activities that used to be fun
- Feeling irritable, easily frustrated, or restless
- Having trouble falling asleep or staying asleep
- Waking up too early or sleeping too much
- Eating more or less than usual or having no appetite
- Experiencing aches, pains, headaches, or stomach problems that do not improve with treatment
- Having trouble concentrating, remembering details, or making decisions
- Feeling tired, even after sleeping well
- Feeling guilty, worthless, or helpless
- Thinking about suicide or hurting yourself

Depressive disorder is a chronic disease surveyed by BRFSS every year. It was the second most prevalent chronic disease (15.5 percent) in 2020, after arthritis (26.6 percent) (Chen, 2021). In the 2021 BRFSS, arthritis was considered in a separate section; therefore, depressive disorder shifted to the first place in terms of its prevalence among ten chronic diseases surveyed.

As follows from Table 17, in 2021, in Delaware, most respondents suffering from depression were in the age group of 25-34-year-olds (22.3 percent). Many more women were prone to depression than men. The difference was 8.6 percentage points, and it was statistically significant. At 18.7 percent, Multiracial/non-Hispanic respondents had the largest ratio of depressed people among them. As for the level of education and income, a majority of depressed people were in the group of respondents who had attended college or technical school (19.5 percent) and in the group with the lowest annual income of less than $15,000 (28.9 percent).

Table 17: Depressive Disorder			
	Told had depressive disorder		
	Wt. %	95% C.I.	Est. Pop.
Total	16.3	[14,7, 18.0]	129,763
AGE			
18-24	19.2	[13.2, 27.2]	16,769
25-34	22.3	[17.5, 28.0]	28,284
35-44	18.7	[14.5, 23.7]	22,496
45-54	16.2	[12.8, 20.4]	18,941
55-64	17.1	[14.0, 20.8]	23,789
65 and over	9.4	[7.6, 11.4]	19,482
GENDER			
Male	11.8	[9.7, 14.2]	44,853
Female	20.4	[18.1, 22.8]	84,909
RACE-ETHNICITY			
White/Non-Hispanic	18.1	[16.1, 20.2]	90,357
Black/Non-Hispanic	13.3	[9.8, 17.7]	22,043
Other race/Non-Hispanic	15.2	[8.2, 26.5]	5,744
Multiracial/Non-Hispanic	18.7	[10.9, 30.2]	2,082
Hispanic	12.7	[8.3, 18.8]	8,364
EDUCATION			
Did not graduate from High School	15.6	[10.6, 22.4]	12,449
Graduated High School	15.6	[12.9, 18.8]	39,036
Attended College or Technical School	19.5	[16.3, 23.3]	44,074
Graduated College or Technical School	14.4	[12.2, 16.9]	34,030
HOUSEHOLD INCOME			
Less than $15,000	28.9	[19.2, 41.0]	8,326
$15,000-$24,999	25.1	[18.9, 32.5]	15,436
$25,000-$34,999	21.4	[16.3, 27.6]	16,892
$35,000-$49,999	13.8	[10.0, 18.7]	11,749
$50,000-$99,999	17.5	[14.2, 21.4]	33,748
$100,000-$199,999	12.5	[9.1, 16.9]	17,141
$200,000 or more	9.1	[5.0, 15.9]	3,143

Asthma

Asthma is a disease that affects a person's lungs. People with asthma may experience "repeated episodes of wheezing, breathlessness, chest tightness, and nighttime or early morning coughing" (Centers for Disease Control and Prevention, 2022n). Pate et al. (2021) report that between 2006 and 2018, the asthma rates were higher among boys younger than 18, among women of 18 years of age and older, and among non-Hispanic Black, non-Hispanic multiple-race, and Puerto Rican persons. They also found that in spite of certain improvements in asthma outcomes, disparities in asthma indicators still persisted along demographic characteristics, poverty levels, as well as geographic location.

Table 18 presents the survey results for Delaware adults with asthma. The results indicate similar patterns as mentioned by Pate et al. (2021). More women than men had asthma in Delaware in 2021; more non-Hispanic Black and non-Hispanic multiple-race respondents had asthma than representatives of other races or ethnic groups; and respondents with the lowest income had the largest ratio of persons with asthma among them.

Table 18: Asthma			
		Told had asthma	
	Wt. %	95% C.I.	Est. Pop.
Total	13.8	[12.3, 15.5]	110,363
AGE			
18-24	15.9	[10.4, 23.6]	13,843
25-34	14.1	[10.2, 19.1]	17,833
35-44	18.5	[14.0, 23.9]	22,235
45-54	13.3	[10.0, 17.7]	15,565
55-64	13.0	[10.2, 16.5]	18,073
65 and over	11.0	[8.9, 13.5]	22,811
GENDER			
Male	11.4	[9.3, 13.9]	43,375
Female	16.1	[14.0, 18.4]	66,988
RACE-ETHNICITY			
White/Non-Hispanic	12.7	[11.0, 14.6]	63,411
Black/Non-Hispanic	19.3	[15.1, 24.3]	31,944
Other race/Non-Hispanic	11.2	[5.4, 21.5]	4,216
Multiracial/Non-Hispanic	18.5	[10.8, 29.8]	2,060
Hispanic	11.7	[7.7, 17.3]	7,708
EDUCATION			
Did not graduate from High School	16.4	[10.8, 24.1]	13,071
Graduated High School	12.7	[10.0, 16.0]	31,766
Attended College or Technical School	15.5	[12.6, 18.9]	35,031
Graduated College or Technical School	12.7	[10.6, 15.0]	29,873
HOUSEHOLD INCOME			
Less than $15,000	29.5	[19.8, 41.5]	8,949
$15,000-$24,999	18.2	[12.3, 26.0]	11,161
$25,000-$34,999	13.5	[9.7, 18.5]	10,664
$35,000-$49,999	11.6	[8.1, 16.3]	9,867
$50,000-$99,999	16.5	[13.1, 20.7]	31,911
$100,000-$199,999	12.5	[9.2, 16.7]	17,088
$200,000 or more	7.9	[3.9, 15.1]	2,729

Diabetes

Diabetes, also known as hyperglycemia, is a chronic health condition affecting how a person's body turns food into energy. Most of the food people consume is broken down into sugar (glucose) and then released into the bloodstream. When blood sugar is elevated, the pancreas releases insulin, which helps blood sugar get into the body cells to be used as energy. People who have diabetes cannot produce enough insulin or use it the way it is necessary. If there is not enough insulin, excessive amounts of blood sugar remain in the bloodstream. With time, too much blood sugar in one's bloodstream may lead to heart disease, vision loss, and kidney disease (Centers for Disease Control and Prevention, 2022o).

A distinction is made among three types of diabetes. Type 1 diabetes that includes only about 5 percent of all cases, is the type where the pancreas does not produce insulin. Type 2 diabetes (about 90 to 95 percent of all cases) is where not enough insulin is produced by the pancreas. Gestational diabetes occurs in pregnant women between the 24th and 28th weeks of pregnancy and usually resolves after delivery. However, about 50 percent of women who were diagnosed with gestational diabetes are likely to develop Type 2 diabetes later on (Delaware.gov, n.d.).

In 2019, for the first time after almost 20 years of constant growth, a decreased incidence of newly diagnosed cases of diabetes in the United Sates was recorded. If in 2009 the incidence was 9.3 per 1,000 adults, then in 2019 the incidence fell to 5.9 per 1,000 adults (Centers for Disease Control and Prevention, 2022p). Representatives of certain race and ethnic groups were more likely to be diagnosed with diabetes than non-Hispanic White people. For example, the incidence rate among American Indian or Alaska Native was 14.5 percent, among non-Hispanic Black – 12.1 percent, among Hispanic – 11.8 percent, among non-Hispanic Asian – 9.5 percent, whereas among non-Hispanic White it was just 7.4 percent (Ibid.).

Diabetes turned out to be an underlying condition that increased the probability of serious illness during the COVID-19 pandemic. According to Gold et al. (2020), almost 4 in 10 adults who died from COVID in the U.S. also had diabetes (Gold et al., 2020).

Table 19 shows the prevalence of diabetes among Delaware adults in 2021 according to demographic characteristics. Many more respondents aged 65 and over had diabetes than respondents aged 18-24 (28.3 percent vs. 2.1 percent). More men suffered from diabetes than women, and the ratio of persons with diabetes was the highest among Black/Non-Hispanic respondents. Finally, respondents with the lowest level of education had the highest incidence of diabetes among them, as well as respondents with the second lowest level of annual income of $15,000-$24,999.

Table 19: Diabetes

	Told had diabetes		
	Wt. %	95% C.I.	Est. Pop.
Total	11.9	[10.6, 13.4]	95,089
AGE			
18-24	2.1	[0.7, 6.3]	1,849
25-34	1.1	[0.2, 4.6]	1,360
35-44	5.8	[3.3, 10.0]	6,968
45-54	9.6	[7.2, 12.6]	11,143
55-64	18.2	[14.7, 22.3]	25,290
65 and over	23.3	[20.2, 26.7]	48,477
GENDER			
Male	12.1	[10.2, 14.3]	46,153
Female	11.7	[10.0, 13.7]	48,936
RACE-ETHNICITY			
White/Non-Hispanic	11.4	[10.0, 13.1]	57,063
Black/Non-Hispanic	15.1	[11.5, 19.5]	25,000
Other race/Non-Hispanic	11.0	[6.3, 18.8]	4,173
Multiracial/Non-Hispanic	8.2	[3.2, 19.6]	916
Hispanic	9.4	[6.0, 14.5]	6,236
EDUCATION			
Did not graduate from High School	16.0	[10.9, 23.0]	12,765
Graduated High School	12.7	[10.1, 15.9]	31,927
Attended College or Technical School	11.3	[9.3, 13.7]	25,476
Graduated College or Technical School	10.6	[8.9, 12.5]	24,919
HOUSEHOLD INCOME			
Less than $15,000	15.2	[9.1, 24.1]	4,371
$15,000-$24,999	19.0	[13.0, 26.8]	11,663
$25,000-$34,999	12.6	[9.1, 17.1]	9,924
$35,000-$49,999	14.5	[10.3, 20.1]	12,368
$50,000-$99,999	9.8	[7.8, 12.2]	18,899
$100,000-$199,999	8.8	[6.6, 11.6]	12,039
$200,000 or more	11.7	[6.7, 19.8]	4,075

Section 8: Arthritis

Arthritis is a general term that is used to describe more than 100 types of conditions affecting joints and tissues around joints. Most types of arthritis are characterized by pain and stiffness in and around affected joints. Some types of arthritis can also affect the immune system and some internal organs. The most common types of arthritis include osteoarthritis, rheumatoid arthritis, gout, and fibromyalgia. In the U.S., arthritis affects 58.5 million adults. Children can also develop this type of condition (Centers for Disease Control and Prevention, 2021a).

In 2021, over 27 percent of adults in Delaware were diagnosed with some form of arthritis: rheumatoid arthritis, gout, lupus, or fibromyalgia. Many more adults aged 65 and over had arthritis than adults in the youngest age-group of 18–24-year-olds: 48.1 percent vs. 4.1 percent. More women had arthritis than men. Among race/ethnic groups, the highest ratio of people with arthritis was among White/non-Hispanic respondents (31.9 percent). The level of education or income did not seem to be correlated with arthritis.

Table 20: Arthritis			
	Told had arthritis		
	Wt. %	95% C.I.	Est. Pop.
Total	27.2	[25.4, 29.1]	216,781
AGE			
18-24	4.1	[2.1, 7.8]	3,592
25-34	9.7	[6.1, 15.1]	12,278
35-44	15.8	[12.0, 20.6]	19,079
45-54	25.4	[21.1, 30.2]	29,643
55-64	37.5	[33.1, 42.0]	52,078
65 and over	48.1	[44.6, 51.7]	100,109
GENDER			
Male	22.0	[19.6, 24.6]	83,990
Female	31.9	[29.2, 34.6]	132,790
RACE-ETHNICITY			
White/Non-Hispanic	31.9	[29.6, 34.3]	159,437
Black/Non-Hispanic	24.2	[20.1, 28.9]	40,145
Other race/Non-Hispanic	12.8	[7.1, 22.2]	4,852
Multiracial/Non-Hispanic	29.0	[18.3, 42.7]	3,229
Hispanic	6.9	[4.3, 10.9]	4,590
EDUCATION			
Did not graduate from High School	22.6	[16.6, 30.1]	18,048
Graduated High School	29.1	[25.5, 32.9]	72,818
Attended College or Technical School	31.3	[27.8, 35.0]	70,659
Graduated College or Technical School	23.3	[20.9, 25.9]	54,929
HOUSEHOLD INCOME			
Less than $15,000	28.9	[19.9, 39.8]	8,317
$15,000-$24,999	40.6	[32.8, 48.9]	24,963
$25,000-$34,999	27.7	[22.4, 33.8]	21,887
$35,000-$49,999	29.7	[24.0, 36.2]	25,307
$50,000-$99,999	30.0	[26.4, 34.0]	57,928
$100,000-$199,999	20.7	[17.1, 24.8]	28,364
$200,000 or more	17.3	[11.3, 25.6]	6,006

Section 9: Demographics

The demographics section of the survey concerned itself with various questions regarding respondents' demographic characteristics. The characteristics included, for example, respondents' marital status, the highest grade, or year of school they completed, whether they owned or rented their home, the number of children younger than 18 years of age who lived in their household, and the like. The demographic characteristics were not analyzed separately in the given report.

Section 10: Disability

CDC defines disability as "any condition of the body or mind (impairment) that makes it more difficult for the person with the condition to do certain activities (activity limitation) and interact with the world around them (participation restrictions)" (Centers for Disease Control and Prevention, 2020b). Different types of disabilities affect people in different ways. A person may have affected:

- Vision
- Movement
- Thinking
- Remembering
- Learning
- Communicating
- Hearing
- Mental health
- Social relationships (Ibid.).

The World Health Organization identifies three dimensions to disability. Those include *impairment* in an individual's body structure or function, or mental functioning (e.g., loss of a limb, loss of vision, memory loss); *activity limitation* (difficulty seeing, hearing, walking, problem solving); *participation restrictions* in normal daily activities (working, engaging in social and recreational activities, obtaining health care and preventive services) (World Health Organization, 2002).

In 2011, the Secretary of the U.S. Department of Health and Human Services (HHS) issued the *HHS Implementation Guidance on Data Collection Standards,* which established data collection standards for five demographic categories such as race, ethnicity, sex, primary language, and disability status. To gauge disability, major surveys, including BRFSS, use the six-item set of questions, which represent a minimum standard (Centers for Disease Control and Prevention, 2020c). The questions are as follows:

1. Are you deaf, or do you have serious difficulty hearing? (Yes or No)
2. Are you blind, or do you have serious difficulty seeing, even when wearing glasses? (Yes or No)
3. Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions? (Yes or No)
4. Do you have serious difficulty walking or climbing stairs? (Yes or No)
5. Do you have difficulty dressing or bathing? (5 years old or older) (Yes or No)
6. Because of a physical, mental, or emotional condition, do you have difficulty doing errands alone such as visiting a doctor's office or shopping? (15 years old or older) (Yes or No)

Research indicates that people with disabilities are at a greater risk of having poorer overall health; they tend to have less access to adequate health care and are more likely to experience preventable health problems. Therefore, collecting disability data can help "identify barriers to achieving good health, and to design prevention and health promotion programs aimed at reducing health disparities and improving the health of people with disabilities" (Centers for Disease Control and Prevention, 2020d).

According to CDC, 61 million adults in the U.S. live with a disability, i.e., 26 percent (or one in four) of adults in this country have some type of disability. Disability is more common among adults aged 65 and older, women, and minorities (non-Hispanic American Indians/Alaska Natives). In addition, adults who live with disabilities are more likely to be obese, have diabetes and heart desiase, and smoke (Centers for Disease Control and Prevention, 2022q).

Table 21 presents the 2021 BRFSS survey results. In 2021, in Delaware, 5.7 percent of adults had serious difficulty hearing; 4.2 percent were blind or had difficulty seeing; 10.7 percent of adults had concentrating or remembering difficulty; 13.9 percent of adults faced walking or climbing stairs difficulty; 3.7 percent of adults experienced dressing or bathing difficulty; and 6.3 percent had difficulty doing errands alone.

Table 21: Disability

	Delaware Wt. %	U.S. Wt. %
Deaf or do have serious difficulty hearing	5.7	6.9
Blind or difficulty seeing	4.2	5.1
Difficulty concentrating or remembering	10.7	12.4
Difficulty walking or climbing stairs	13.9	13.5
Difficulty dressing or bathing	3.7	3.9
Difficulty doing errands alone	6.3	7.4

Section 11: Tobacco Use

Smoking can have an adverse effect on almost every organ of a person's body and often leads to diseases and disability. Smoking may cause cancer, stroke, heart and lung diseases, diabetes, chronic obstructive pulmonary disease (COPD), including emphysema and chronic bronchitis, as well as erectile dysfunction in males. Additionally, smoking increases the risk of developing tuberculosis, some eye diseases, and problems of the immune system (Centers for Disease Control and Prevention, 2021b). In the U.S., over 480,000 people die every year due to cigarette smoking, which is about 1,300 deaths per day (Ibid.). Smokers also tend to live on average 10 years less than nonsmokers (Jha et. al., 2013). In 2018, the estimated cost of cigarette smoking to the United States was over $600 billion, including more than $240 billion in healthcare spending (Xu et al., 2021; Shrestha et al., 2022).

In 2021, in Delaware, 39.2 percent of adults indicated they had smoked at least 100 cigarettes in their entire life (Table 28). Male adults tended to smoke more than female adults (43.1 percent vs. 35.5 percent). This difference was statistically significant. More White/non-Hispanic respondents had smoked at least 100 cigarettes in their life than Black/non-Hispanic or Hispanic respondents (45.2 percent, 29.5 percent, and 22.3 percent, respectively). The share of Multiracial/non-Hispanic respondents who had smoked so many cigarettes over the course of their life was also very large at 44.9 percent – the second largest after White/non-Hispanic respondents. Education attainment and the level of income seemed to be correlated with smoking in a reverse manner: the better educated and the more affluent respondents were, the fewer of them reported smoking at least 100 cigarettes in their life.

Table 22: Tobacco Use			
	Have smoked at least 100 cigarettes in entire life		
	Wt. %	95% C.I.	Est. Pop.
Total	39.2	[37.0, 41.4]	286,807
AGE			
18-24	8.2	[4.9, 13.6]	6,472
25-34	31.0	[25.2, 37.6]	37,052
35-44	45.6	[39.5, 51.8]	49,280
45-54	40.5	[35.2, 46.1]	42,749
55-64	45.5	[40.8, 50.2]	58,278
65 and over	48.3	[44.6, 52.1]	92,974
GENDER			
Male	43.1	[39.9, 46,4]	152,432
Female	35.5	[32.6, 38.4]	134,374
RACE-ETHNICITY			
White/Non-Hispanic	45.2	[42.5, 47.9]	212,524
Black/Non-Hispanic	29.5	[24.5, 35.1]	42,980
Other race/Non-Hispanic	23.7	[15.1, 35.1]	7,675
Multiracial/Non-Hispanic	44.9	[31.2, 59.5]	4,643
Hispanic	22.3	[16.7, 29.2]	13,173
EDUCATION			
Did not graduate from High School	51.7	[42.6, 60.7]	36,929
Graduated High School	44.5	[40.1, 48.9]	99,836
Attended College or Technical School	41.5	[37.5, 45.7]	86,375
Graduated College or Technical School	27.7	[25.0, 30.7]	61,872
HOUSEHOLD INCOME			
Less than $15,000	48.9	[37.3, 60.7]	13,136
$15,000-$24,999	53.0	[4.,4, 61.5]	31,290
$25,000-$34,999	46.6	[39.9, 53.5]	34,478
$35,000-$49,999	43.9	[36.7, 51.4]	36,012
$50,000-$99,999	41.7	[37.4, 46.0]	76,842
$100,000-$199,999	34.4	[29.6, 39.5]	45,776
$200,000 or more	20.1	[13.5, 28.9]	6,939

In 2021, slightly more than one in five (22.7 percent) Delaware adults smoked cigarettes every day (Table 23). At 41.1 percent, the group of Delawareans aged 18-24, the youngest group in the survey, had the largest share of respondents who smoked every day. More males smoked than females: 23.9 percent vs. 21.4 percent. The race/ethnic group that had most smokers among them was the group of Multiracial/non-Hispanic respondents (38.4 percent). The level of education seemed to be correlated with the smoking rates in reverse: the more educated the respondents were, the fewer of them smoked. For example, 29.5 percent of respondents who did not graduate from high school smoked. Simultaneously, only 12.2 percent of respondents who graduated from college or technical school smoked. As for the income levels, there was no clear correlation between how much money respondents were making and how many of them smoked. However, the most smokers turned out to be in the groups with the lowest annual incomes from less than $15,000 to $34,999, and the lowest number of smokers was in the group with the annual income between $100,000 and $199,999.

Table 23: Tobacco Use (cont.)			
	Smoke cigarettes every day now		
	Wt. %	95% C.I.	Est. Pop.
Total	22.7	[20.0, 25.8]	65,188
AGE			
18-24	41.1	[18.8, 67.7]	2,659
25-34	27.8	[18.2, 39.6]	10,284
35-44	28.9	[21.1, 38.2]	14,242
45-54	27.8	[20.9, 36.0]	11,828
55-64	27.1	[21.6, 33.3]	15,774
65 and over	11.2	[8.3, 14.9]	10,398
GENDER			
Male	23.9	[19.9, 28.4]	36,398
Female	21.4	[17.7, 25.6]	28,790
RACE-ETHNICITY			
White/Non-Hispanic	22.5	[19.3, 26.0]	47,744
Black/Non-Hispanic	22.3	[14.9, 31.9]	9,566
Other race/Non-Hispanic	21.0	[8.6, 43.0]	1,614
Multiracial/Non-Hispanic	38.4	[21.0, 59.3]	1,782
Hispanic	19.0	[9.6, 34.0]	2,497
EDUCATION			
Did not graduate from High School	29.5	[20.3, 40.7]	10,889
Graduated High School	26.5	[21.5, 32.2]	26,503
Attended College or Technical School	23.2	[18.4, 28.7]	20,033
Graduated College or Technical School	12.2	[8.3, 17.6]	7,547
HOUSEHOLD INCOME			
Less than $15,000	36.6	[23.4, 52.3]	4,810
$15,000-$24,999	33.6	[24.8, 43.8]	10,528
$25,000-$34,999	35.4	[26.0, 46.1]	12,201
$35,000-$49,999	16.9	[10.2, 26.6]	6,070
$50,000-$99,999	20.9	[16.2, 26.5]	16,026
$100,000-$199,999	10.7	[6.0, 18.2]	4,881
$200,000 or more	20.5	[7.1, 46.3]	1,421

Section 12: Alcohol Consumption

Drinking too much, whether on a single occasion or over a prolonged period of time, may seriously affect one's health. It can pose short- and long-term risks to an individual from injuries, sexual assault, and alcohol poisoning to various diseases, learning and memory problems, and mental health and social problems (Centers for Disease Control and Prevention, 2022r). The National Institute on Alcohol Abuse and Alcoholism states that alcohol can adversely impact a person's brain, heart, liver, pancreas, and the immune system (National Institute of Alcohol Abuse and Alcoholism, n.d.). The impact of alcohol on the brain may cause changes in mood and behavior; in relation to the heart, it may cause cardiomyopathy, arrhythmias, stroke and high blood pressure; the liver may develop steatosis, or fatty liver, alcoholic hepatitis, fibrosis or cirrhosis; in the pancreas, alcohol causes the production of toxic substances leading to pancreatitis – a dangerous condition that prevents proper digestion; finally, alcohol can weaken a person's immune system making him or her more susceptible to pneumonia and tuberculosis, for example (Ibid.).

According to the National Cancer Institute, there exists a strong scientific consensus that alcohol consumption may lead to certain types of cancer (National Cancer Institute, 2021). Alcohol drinking is strongly correlated with such types of cancer as head and neck cancer (oral cavity, pharynx (throat), and larynx (voice box)), esophageal cancer (esophageal squamous cell carcinoma), liver cancer (hepatocellular carcinoma and intrahepatic cholangiocarcinoma), breast cancer, and colorectal cancer.

Drinking can be divided into moderate and excessive (Centers for Disease Control and Prevention, 2022r). Moderate drinking means that adults of legal drinking age can choose not to drink at all, or to drink in moderate quantities. Drinking in moderation means limiting the amount of consumed alcohol to 2 drinks or less in a day for men or 1 drink of less in a day for women. According to CDC, a standard drink contains 0.6 ounces (14.0 grams or 1.2 tablespoons) of pure alcohol, which corresponds, for example, to 12-ounces of beer (5% alcohol content), or 8-ounces of malt liquor (7% alcohol content), or 5-ounces of wine (12% alcohol content).

Excessive drinking includes binge and heavy drinking and also refers to any drinking by pregnant women or people younger than age 21. Binge drinking is defined as consuming 4 or more drinks on a single occasion for women, and 5 or more drinks on a single occasion for men. Heavy drinking refers to consuming 8 or more drinks per week for women, and 15 or more drinks per week for men. Some people who should not drink alcohol at all, according to CDC, include those who are:

- Younger than age 21.
- Pregnant or may be pregnant.
- Driving, planning to drive, or participating in other activities requiring skill, coordination, and alertness.
- Taking certain prescriptions or over-the-counter medications that can interact with alcohol.
- Suffering from certain medical conditions.
- Recovering from alcoholism or are unable to control the amount they drink (Centers for Disease Control and Prevention, 2022r).

Table 24 provides data on heavy drinking and binge drinking among different demographic groups of Delawareans in 2021. The data for the table were retrieved from the CDC page *BRFSS Prevalence & Trends Data* for the *Alcohol Consumption* topic (Centers for Disease Control and Prevention, 2015). Some data, especially for the part of the table describing heavy drinking prevalence rates, were missing. It follows from the table, that most binge drinkers were in the group of the youngest Delawareans aged 18-24 (20 percent), and the lowest number of binge drinkers was discovered among the oldest respondents in the group of 65 and older (6.6 percent). More males than females reported being binge drinkers (16.4 percent vs. 9.7 percent). Among the race/ethnic groups for which the data were available, most binge drinkers were among White/non-Hispanic respondents followed by Hispanic and Black/non-Hispanic respondents: 14.1 percent, 13.1 percent, and 9.6 percent respectively. No obvious correlation was revealed between the prevalence rates of binge drinkers and respondents' level of education or income.

As for heavy drinking, since a lot of information was missing, it is hard to draw any meaningful conclusions about the prevalence rates of heavy drinkers among Delawareans. The largest numbers of heavy drinkers were found in the age groups of 35-44- and 45–54-year-olds, and there were one percentage point more of heavy drinkers among men than women. Fewer college and technical school graduates were heavy drinkers than those who graduated from high school or attended college or technical school but did not graduate.

Table 24: Alcohol Use						
	*Heavy drinking			^Binge drinking		
	%	95% C.I.	N	%	95% C.I.	N
AGE						
18-24	N/A	[N/A]	N/A	20.0	[13.0, 26.9]	37
25-34	5.2	[2.7,7.8]	23	19.3	[14.3, 24.3]	65
35-44	6.5	[3.7, 9.3]	32	16.5	[11.6, 21.3]	68
45-54	6.2	[3.0, 9.4]	25	12.7	[8.9, 16.6]	60
55-64	4.2	[2.5, 6.0]	34	8.9	[6.4, 11.5]	65
65 and over	4.6	[3.1, 6.2]	51	6.6	[4.7, 8.5]	66
GENDER						
Male	5.5	[4.0, 6.9]	81	16.4	[13.9, 18.9]	216
Female	4.5	[3.3, 5.8]	89	9.7	[7.7, 11.6]	145
RACE-ETHNICITY						
White/Non-Hispanic	6.0	[4.8, 7.3]	139	14.1	[12.1, 16.0]	269
Black/Non-Hispanic	N/A	[N/A]	N/A	9.6	[5.9, 13.3]	34
Other race/Non-Hispanic	N/A	[N/A]	N/A	N/A	[N/A]	N/A
Multiracial/Non-Hispanic	N/A	[N/A]	N/A	N/A	[N/A]	N/A
Hispanic	N/A	[N/A]	N/A	13.3	[7.9, 18.8]	36
EDUCATION						
Did not graduate from HS	N/A	[N/A]	N/A	10.8	[5.6, 15.9]	21
Graduated High School	5.5	[3.5, 7.6]	46	14.8	[11.4, 18.1]	103
Attended College or Tech Sch	5.5	[3.6, 7.4]	50	14.0	[10.9, 17.0]	104
Graduated College or Tech Sch	4.6	[3.4, 5.9]	69	10.9	[8.7, 13.1]	133
HOUSEHOLD INCOME						
Less than $15,000	N/A	[N/A]	N/A	N/A	[N/A]	N/A
$15,000-$24,999	8.0	[3.6, 12.5]	18	10.8	[6.4, 15.2]	31
$25,000-$34,999	N/A	[N/A]	N/A	14.8	[9.3, 20.3]	39
$35,000-$49,999	N/A	[N/A]	N/A	12.0	[7.2, 16.8]	35
$50,000 or more	5.2	[3.5, 7.0]	51	14.0	[10.8, 17.3]	103
$100,000-$199,999	6.7	[4.0, 9.4]	43	16.2	[12.1, 20.2]	84
$200,000 or more	N/A	[N/A]	N/A	14.7	[7.0, 22.4]	17

Source: Centers for Disease Control and Prevention, 2017

*Heavy drinking: heavy drinkers – adult men having more than 14 drinks per week and adult women having more than 7 drinks per week (variable calculated from one or more BRFSS questions).

^Binge drinking: binge drinkers – males having five or more drinks on one occasion, females having four or more drinks on one occasion (variable calculated from one or more BRFSS questions).

One drink is equivalent to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor (BRFSS. (2022). *2021 BRFSS Questionnaire*, (p. 39))

Measure Definitions

% = Percent

CI = 95% Confidence Interval

N = "Sample Size". Translates to the number of adult respondents who answered this question or were assigned to this category based on question responses for a calculated variable, or the number of states included for a median.

Section 13: Immunization

According to the U.S. Department of Health & Human Services, vaccines play a major role in keeping everyone healthy. They help save lives by protecting people from such serious diseases as COVID-19, measles, whooping cough, etc. (HHS.gov, n.d.). In the 2021 BRFSS, respondents were asked whether in the past 12 months they had had either a flu vaccine that had been sprayed in their nose, or a flu shot that had been injected into their arm, and whether they had ever had a pneumonia shot also known as a pneumococcal vaccine.

Influenza or flu is a contagious respiratory illness. It is caused by influenza viruses infecting the nose, throat, and lungs. Some people, such as those 65 years of age and older, young children, people with asthma, heart disease, stroke, diabetes, chronic kidney disease, and pregnant women are at higher risk of developing serious flu complications if they become sick with flu. Seasonal flu epidemics happen each year due to two main types of influenza viruses (A and B) that are regularly spread in people. CDC states that getting vaccinated is the best way to reduce the risk of flu and possible serious complications (Centers for Disease Control and Prevention, 2022s).

Pneumococcal disease commonly occurs in young children, but it is older adults who run the greatest risks of becoming seriously ill and dying because of it. There are two kinds of vaccines available in the U.S. that help prevent pneumococcal disease: pneumococcal conjugate vaccines (PCV13, PCV15, and PCV20) and pneumococcal polysaccharide vaccine (PPSV23). It is recommended that the vaccines be administered to all children who are younger than 5 years old and all adults who are 65 years old and older (Centers for Disease Control and Prevention, 2022t).

Table 25 indicates that in Delaware more adults received flu shots and pneumonia shots than in general in the United States. For example, in 2021, almost half of adult Delawareans (49.5 percent) received flu shots during the past 12 months vs. 44.6 percent nationwide. As for the pneumococcal vaccine, 32 percent of Delaware adults ever had it administered to them, whereas nationwide the number was 28.5 percent.

Table 25: Immunization in Delaware and the U.S.		
	Delaware Wt. %	U. S. Wt. %
Have ever had flu shot/spray during the past 12 months	49.5	44.6
Have ever had pneumococcal vaccine	32.0	28.5

Table 26 shows that many more Delawareans aged 65 and older have been vaccinated for flu and pneumonia than adults in the youngest age group of 18–24-year-olds: 73.1 percent vs. 31.0 percent, and 71.2 percent vs. 16.0 percent, respectively. More females than males were vaccinated for both types of disease. White/non-Hispanic respondents had the largest ratio of people among them who had received vaccines for flu and pneumonia: 55.0 percent and 37.5 percent, respectively. Hispanic respondents had the lowest numbers of vaccinated people: 32.9 percent for flu and 9.6 percent for pneumonia. The level of education and income correlated with flu vaccination: the better educated and the more affluent respondents were, the more of them were vaccinated. However, no correlation was detected with respect to pneumonia shots depending on respondents' levels of education or income.

Table 26: Immunization

	Flu shot/spray in past 12 months			Ever had pneumonia shot		
	Wt. %	95% C.I.	Est. Pop.	Wt. %	95% C.I.	Est. Pop.
Total	49.5	[47.2, 51.8]	354,191	32.0	[30.0, 34.1]	226,670
AGE						
18-24	31.0	[23.6, 39.5]	23,933	16.0	[10.4, 23.8]	12,173
25-34	31.5	[25.8, 37.8]	37,511	15.1	[10.7, 20.8]	17,776
35-44	35.5	[29.8, 41.7]	36,992	10.1	[7.0, 14.3]	10,359
45-54	43.5	[38.0, 49.1]	43,797	20.1	[15.6, 25.5]	20,109
55-64	58.7	[53.9, 63.4]	72,888	26.0	[22.2, 30.3]	32,121
65 and over	73.1	[69.7, 76.3]	139,067	71.2	[67.7, 74.5]	134,130
GENDER						
Male	44.8	[41.6, 48.1]	154,489	31.2	[28.2, 34.4]	106,571
Female	53.9	[50.6, 57.1]	199,702	32.7	[30.0, 35.6]	120,099
RACE-ETHNICITY						
White/Non-Hispanic	55.0	[52.2, 57.7]	252,796	37.5	[34.9, 40.1]	171,610
Black/Non-Hispanic	40.6	[35.0, 46.4]	57,623	28.4	[23.4, 34.0]	39,306
Other race/Non-Hispanic	46.0	[33.9, 58.5]	14,898	12.8	[7.3, 21.6]	4,056
Multiracial/Non-Hispanic	41.9	[28.4, 56.7]	4,332	23.3	[14.0, 36.0]	2,404
Hispanic	32.9	[25.9, 40.7]	18,922	9.6	[6.4, 14.0]	5,421
EDUCATION						
Did not graduate from High Sch	32.2	[24.3, 41.3]	22,299	27.3	[19.7, 36.4]	18,746
Graduated High School	43.0	[38.7, 47.5]	94,661	29.4	[25.7, 33.5]	63,785
Attended College or Tech Sch	50.3	[46.0, 54.7]	102,166	36.6	[32.6, 40.7]	73,838
Graduated College or Tech Sch	60.9	[57.6, 64.1]	133,285	32.2	[29.3, 35.2]	69,620
HOUSEHOLD INCOME						
Less than $15,000	30.2	[20.8, 41.6]	8,114	23.7	[15.7, 34.2]	6,377
$15,000-$24,999	44.5	[36.4, 53.0]	24,958	37.1	[29.4, 45.4]	20,620
$25,000-$34,999	48.1	[41.2, 54.9]	35,328	35.5	[29.3, 42.2]	25,893
$35,000-$49,999	45.9	[38.6, 53.4]	37,018	35.1	[28.8, 42.0]	27,448
$50,000-$99,999	52.3	[47.9, 56.7]	94,417	33.5	[29.5, 37.8]	60,083
$100,000-$199,999	53.7	[48.1, 59.1]	70,269	26.0	[21.7, 30.8]	33,964
$200,000 or more	59.8	[49.6, 69.2]	20,136	28.4	[20.5, 37.9]	9,479

Section 14: HIV/AIDS

HIV stands for human immunodeficiency virus. This virus affects the body's immune system and can lead to AIDS (acquired immunodeficiency syndrome) if not treated. At the moment, there is no effective cure for the virus, but it can be controlled if patients get proper medical care (Centers for Disease Control and Prevention, 2022u).

Most people develop flu-like symptoms within 2 to 4 weeks after infection, but some do not have any symptoms at all. Therefore, getting tested is the only way to know for sure if someone has HIV. People with untreated HIV usually progress through three stages: acute HIV infection when there is a large amount of HIV in one's blood, and the person is very contagious (Stage 1), chronic HIV infection (Stage 2), and AIDS – the most severe stage of IHV infection (Stage 3) (Centers for Disease Control and Prevention, 2022u).

According to CDC, in 2020, 30,635 people were diagnosed with HIV in the United States. The same year, in Delaware, the number of diagnoses among people aged 13 and older was 93 at the rate of 11.2 per 100,000 population. Between 2016 and 2019, the annual number of people in the country who received an HIV diagnosis decreased 8%. In 2019, it was estimated that in the United States, 1,189,700 people had HIV (Centers for Disease Control and Prevention, 2022v).

People with HIV who know they are infected can get proper treatment and remain healthy for many years. Therefore, CDC recommends that everyone between the ages of 13 and 64 should get tested for HIV at least once as part of routine health care. CDC also advises routine HIV screening for adults, adolescents, and pregnant women in the U.S. health care settings and calls for reducing barriers for HIV testing (Centers for Disease Control and Prevention, 2022w).

In addition, CDC recommends that some groups of people with certain risk factors get tested at least once a year (Centers for Disease Control and Prevention, 2022x). These groups include the following:

- Males who have had sex with other males.
- People who have had anal or vaginal sex with someone who has HIV.
- People who have had more than one sex partner since their last HIV test.

- People who have shared needles, syringes, or other drug injection equipment (for example, cookers).
- People who have exchanged sex for drugs or money.
- People who have been diagnosed with or treated for another sexually transmitted disease.
- People who have been diagnosed with or treated for hepatitis or tuberculosis (TB).
- People who have had sex with someone who has done anything listed above or with someone whose sexual history they don't know.

In Delaware, about 40 percent of adults were tested for HIV (Table 27). Most respondents who were tested found themselves in the middle-age groups: from 25 to 54 years old. The lowest number of respondents who were tested for HIV was in the oldest age group of 65 and over: 20.6 percent, whereas, for example, in the age group of 35–44-year-olds, 57.7 percent of respondents were tested. The number of males and females who were tested turned out to be almost the same: 40.0 percent vs. 39.9 percent. The highest number of respondents who ever got tested was in the Black/non-Hispanic group at 56.3 percent. White/non-Hispanic respondents had the lowest number of people among them who were tested – 34.9 percent. The levels of respondents' education or income did not reveal any correlation with the rates of HIV testing.

Table 27: HIV Testing			
	Ever tested for H.I.V. Not including tests as part of blood donation		
	Wt. %	95% C.I.	Est. Pop.
Total	39.9	[37.7, 42.3]	282,250
AGE			
18-24	32.0	[24.3, 40.8]	24,272
25-34	52.6	[46.0, 59.2]	61,907
35-44	57.7	[51.6, 63.7]	59,129
45-54	51.8	[46.1, 57.4]	51,656
55-64	37.9	[33.3, 42.8]	46,610
65 and over	20.6	[17.8, 23.7]	38,674
GENDER			
Male	40.0	[36.7, 43.3]	136,284
Female	39.9	[36.7, 43.1]	145,965
RACE-ETHNICITY			
White/Non-Hispanic	34.9	[32.3, 37.6]	159,625
Black/Non-Hispanic	56.3	[50.4, 62.0]	77,789
Other race/Non-Hispanic	38.3	[26.8, 51.2]	12,053
Multiracial/Non-Hispanic	54.2	[39.5, 68.2]	5,603
Hispanic	41.5	[33.8, 49.7]	23,539
EDUCATION			
Did not graduate from High School	42.5	[33.5, 51.9]	29,210
Graduated High School	38.0	[33.6, 42.5]	82,021
Attended College or Technical School	41.7	[37.4, 46.1]	84,023
Graduated College or Technical School	39.8	[36.6, 43.2]	86,088
HOUSEHOLD INCOME			
Less than $15,000	41.2	[30.3, 52.9]	11,059
$15,000-$24,999	44.2	[36.2, 52.6]	24,415
$25,000-$34,999	47.0	[40.1, 53.9]	34,280
$35,000-$49,999	38.0	[30.9, 45.6]	29,660
$50,000-$99,999	41.5	[37.1, 45.9]	74,359
$100,000-$199,999	40.2	[34.8, 45.8]	52,247
$200,000 or more	39.7	[30.0, 50.2]	13,235

Section 15: Fruits and Vegetables

CDC's Division of Nutrition, Physical Activity, and Obesity states that a diet rich in fruits and vegetables can help reduce the risk of such causes of illness and death as cardiovascular disease, type 2 diabetes, certain cancers, and obesity (Centers for Disease Control and Prevention, 2021c). CDC recommends that adults should consume 1.5-2 cup-equivalents of fruits and 2-3 cup-equivalents of vegetables daily (Centers for Disease Control and Prevention, 2022y; USDA, n.d./a; USDA, n.d./b). In spite of all the benefits a healthy diet may provide, few adults in the U.S. meet these recommendations (Centers for Disease Control and Prevention, 2021c).

CDC points out that there exist barriers to fruit and vegetable consumption. Research finds that such factors as high cost, limited availability, and access, as well as perceived lack of cooking and preparation time may become barriers to fruit and vegetable consumption (Ibid.). In 2011, CDC issued a *Guide to Strategies to Increase the Consumption of Fruits and Vegetables* (Centers for Disease Control and Prevention, 2011). The *Guide* offered ten different strategies, including promotion of food policy councils as a way to improve the food environment at state and local levels, improvement of access to retail stores that sell high-quality fruits and vegetables, providing access to fruits and vegetables at workplace meetings and events, and establishing policies to incorporate fruit and vegetable activities into schools as a way to increase consumption.

In 2021, over 25 percent of adults in Delaware ate fruits at least once a day, and less than 3 percent did not eat fruits at all (Table 28). The numbers were comparable to those in the U.S.: 26 percent of adults nationwide ate fruits once a day and 2.8 percent did not eat fruits. Considerably fewer adults in Delaware were drinking 100 percent fruit juice every day: 11.6 percent did, and 38.5 percent did not (Table 29). In the U.S., 10.4 percent of adults drank 100 percent fruit juice every day, while 38.9 percent did not. Fewer than 15 percent of respondents ate a green salad every day in Delaware, similarly to the number of people nationwide (14.8 percent) (Table 30). Very few respondents reported eating any kind of fried potatoes every day: 1.8 percent in Delaware, and 2.8 percent in the U.S. (Table 31).

When answers to the same questions were considered along demographic characteristics, the results proved to be mixed. More older people ate fruits and vegetables and drank 100 percent fruit juice every day than younger people: 28.0 percent and 15.8 percent in the age group of 65 and older, and 19.3 percent and 9.2 percent in the age group of 18–24-year-olds (Table 32). More women ate fruits every day, while more men drank 100 percent fruit juice. Among race-ethnic groups, the lowest level of fruit consumption was detected in the group of Black/non-Hispanic respondents (21.1 percent), while the lowest number of people who drank 100 percent fruit juice every day turned out to be among Multiracial/non-Hispanic respondents (4.2 percent). The level of education somewhat correlated with fruit consumption but was almost reversed with respect to drinking 100 percent fruit juice. No obvious correlation was found regarding the consumption of fruit and fruit juices depending on respondents' level of income.

Table 28: Ate fruits during the past 30 days

	Delaware Wt. %	U.S. Wt. %
Once a day	25.6	26.0
Once a week	4.5	3.3
Once a month	1.0	1.2
Never	2.8	2.8

Table 29: Drank 100% fruit juice (apple, orange) during the past 30 days

	Delaware Wt. %	U.S. Wt. %
Once a day	11.6	10.4
Once a week	7.2	7.2
Once a month	4.6	5.2
Never	38.5	38.9

Table 30: Ate a green salad (with or without other vegetables) during the past 30 days

	Delaware Wt. %	U.S. Wt. %
Once a day	14.6	14.8
Once a week	13.7	10.4
Once a month	3.2	3.0
Never	8.1	7.9

Table 31: Ate any kind of fried potatoes during the past 30 days	Delaware Wt. %	U.S. Wt. %
Once a day	1.8	2.8
Once a week	19.6	18.0
Once a month	8.9	9.0
Never	12.4	12.9

Table 32: Fruits and Vegetables (once a day during the past 30 days)	Ate fruits			Drank 100% fruit juice (apple, orange)		
	Wt. %	95% C.I.	Est. Pop.	Wt. %	95% C.I.	Est. Pop.
Total	25.6	[23.6, 27.6]	177,340	11.6	[10.1, 13.2]	79,726
AGE						
18-24	19.3	[13.6, 26.7]	14,408	9.2	[4.9, 16.4]	6,786
25-34	27.8	[22.2, 34.1]	31,778	11.5	[7.7, 16.9]	13,157
35-44	22.5	[17.6, 28.2]	22,469	8.7	[5.8, 12.7]	8,592
45-54	24.4	[20.0, 29.4]	23,966	9.9	[6.6, 14.7]	9,738
55-64	27.0	[22.8, 31.7]	32,569	10.2	[7,5, 13.7]	12,047
65 and over	28.0	[24.7, 31.6]	52,147	15.8	[13.2, 18.9]	29,403
GENDER						
Male	24.4	[21.7, 27.3]	81,990	12.3	[10.4, 14.6]	41,296
Female	26.7	[23.9, 29.6]	95,349	10.8	[8.8, 13.2]	38,429
RACE-ETHNICITY						
White/Non-Hispanic	26.0	[23.7, 28.5]	117,608	10.8	[9.1, 12.6]	48,506
Black/Non-Hispanic	21.1	[16.9, 26.1]	28,613	13.7	[10.2, 18.2]	18,386
Other race/Non-Hispanic	33.6	[23.3, 45.7]	10,102	8.1	[3.2, 19.1]	2,337
Multiracial/Non-Hispanic	32.1	[19.7, 47.8]	3,247	4.2	[1.2, 14.1]	424
Hispanic	26.8	[20.2, 34.7]	14,689	15.7	[9.8, 24.1]	8,577
EDUCATION						
Did not graduate from High Sch	25.2	[17.9, 34.3]	16,851	14.5	[8.9, 22.7]	9,528
Graduated High School	23.1	[19.6, 27.0]	48,684	12.5	[9.8, 15.9]	26,199
Attended College or Tech Sch	25.7	[22.1, 29.7]	51,162	13.3	[10.5, 16.7]	26,397
Graduated College or Tech Sch	27.9	[25.0, 31.0]	59,595	8.3	[6.7, 10.2]	17,600
HOUSEHOLD INCOME						
Less than $15,000	26.3	[17.0, 38.3]	7,035	8.2	[4.3, 15.2]	2,205
$15,000-$24,999	20.5	[15.1, 27.2]	10,935	9.7	[5.6, 16.5]	5,183
$25,000-$34,999	23.2	[17.7, 29.7]	16,335	10.6	[6.8, 16.2]	7,411
$35,000-$49,999	23.5	[17.9, 30.3]	18,170	15.0	[10.6, 20.8]	11,410
$50,000-$99,999	26.0	[22.3, 30.1]	46,054	10.6	[8.3, 13.5]	18,638
$100,000-$199,999	24.2	[20.0, 28.9]	31,227	9.5	[6.5, 13.6]	12,201
$200,000 or more	32.7	[23.9,42.9]	10,814	13.4	[8.1, 21.4]	4,439

Table 33 provides information on how many Delawareans ate a green salad or any kind of fried potatoes once a day along demographic characteristics. Once again, more people in the oldest age group ate a green salad daily than people in the youngest age group: 16.9 percent vs. 10.7 percent. As for fried potatoes, fewer older people than younger people consumed this type of food regularly: 1.3 percent vs. 4.8 percent. Women tended to have a healthier diet than men: more women than men ate a green salad (17.8 percent vs. 11.2 percent) and fewer women ate fried potatoes (1.0 percent vs. 2.7 percent). People who identified as Other race/non-Hispanic ranked first with respect to eating a green salad daily among all other race/ethnic groups (20.6 percent), and more Black/non-Hispanic respondents ate some type of fried potatoes daily than respondents of other races/ethnicities (2.3 percent). Finally, people with the highest level of education and income had the largest numbers of respondents among them who consumed a green salad every day (17.1 percent, and 20.9 percent). However, the richest people with the annual income of $200,000 and more ranked second in the daily consumption of fried potatoes after those who were making between $25,000 and $34,999 a year (3.1 percent and 4.4 percent, respectively).

Table 33: Fruits and Vegetables (once a day during the past 30 days) (cont.)						
	Ate a green salad (with or without other vegetables)			Ate any kind of fried potatoes		
	Wt. %	95% C.I.	Est. Pop.	Wt. %	95% C.I.	Est. Pop.
Total	14.6	[13.1, 16.3]	100,116	1.8	[1.3, 2.5]	12,478
AGE						
18-24	10.7	[5.5, 19.9]	7,901	4.8	[2.3, 9.8]	3,538
25-34	11.5	[8.0, 16.3]	13,018	1.8	[0.6, 4.8]	1,992
35-44	13.6	[10.0, 18.4]	13,524	1.3	[0.4, 4.1]	1,287
45-54	15.1	[11.5, 19.5]	14,690	2.0	[1.0, 3.8]	1,909
55-64	16.9	[13.6, 20.8]	19,829	1.1	[0.6, 2.0]	1,282
65 and over	16.9	[14.4, 19.7]	341.152	1.3	[0.8, 2.3]	2,467
GENDER						
Male	11.2	[9.5, 13.2]	37,165	2.7	[1.8, 4.1]	8,914
Female	17.8	[15.4, 20.5]	62,950	1.0	[0.6, 1.7]	3,563
RACE-ETHNICITY						
White/Non-Hispanic	15.5	[13.6, 17.6]	69,294	1.8	[1.3, 2.7]	8,213
Black/Non-Hispanic	11.4	[8.5, 15.1]	15,267	2.3	[1.0, 5.2]	3,066
Other race/Non-Hispanic	20.6	[12.2, 32.7]	5,852	1.3	[0.3, 5.0]	356
Multiracial/Non-Hispanic	21.4	[10.4, 39.0]	2,162	--	[--]	--
Hispanic	11.4	[7.4, 17.3f]	6,231	0.6	[0.2, 2.0]	336
EDUCATION						
Did not graduate from High Sch	5.7	[3.1, 10.3]	3,751	1.4	[04, 4.6]	925
Graduated High School	13.9	[10.8, 17.8]	29,058	2.9	[1.7, 4.9]	5,970
Attended College or Tech Sch	15.4	[12.7, 18.6]	30,409	1.3	[0.6, 2.7]	2,613
Graduated College or Tech Sch	17.1	[14.8, 19.7]	36,176	1.2	[0.7, 2.0]	2,511
HOUSEHOLD INCOME						
Less than $15,000	7.1	[3.7, 13.0]	1,894	1.9	[0.7, 5.1]	498
$15,000-$24,999	13.0	[8.6, 19.2]	6,936	2.8	[1.0, 7.6]	1,497
$25,000-$34,999	11.3	[7.5, 16.5]	7,875	4.4	[2.0, 9.2]	3,016
$35,000-$49,999	16.5	[10.5, 24.8]	12,371	1.1	[0.4, 2.8]	817
$50,000-$99,999	16.8	[13.9, 20.2]	29,532	1.5	[0.7, 3.1]	2,622
$100,000-$199,999	13.2	[10.3, 16.8]	16,869	0.4	[0.1, 1.0]	459
$200,000 or more	20.9	[13.9, 30.1]	6,725	3.1	[1.1, 8.2]	987

Part 4

OPTIONAL MODULES

Module 1: Pre-Diabetes

Pre-diabetes is a serious health condition which is characterized by higher-than-normal blood sugar levels. However, the blood sugar levels are not high enough yet for a person to be diagnosed with type 2 diabetes. In the United States, more than 1 in 3 adults (about 96 million people) have this condition, and 80% of them do not know they have it. Pre-diabetes may develop into type 2 diabetes and also cause heart disease and stroke (Centers for Disease Control and Prevention, 2021d).

Since pre-diabetes may go for years without any clear symptoms, it is important to have one's blood sugar tested. CDC recommends the test to those who have any of the following risk factors:

- Being overweight
- Being 45 years or older
- Having a parent, brother, or sister with type 2 diabetes
- Being physically active less than 3 times a week
- Ever having gestational diabetes (diabetes during pregnancy) or giving birth to a baby who weighed more than 9 pounds
- Having polycystic ovary syndrome

CDC additionally recommends that African Americans, Hispanic/Latino Americans, American Indians, Pacific Islanders, and some Asian Americans should have their blood sugar tested as representatives of these groups are at a higher risk of having pre-diabetes (Centers for Disease Control and Prevention, 2021d).

It is possible to prevent or delay prediabetes from turning into type 2 diabetes. The risk decreases with a loss of even a modest amount of weight and getting regular physical activity. For example, the loss of 5 percent to 7 percent of weight, which equals to 10 to 14 pounds for a 200-pound person, may already decrease the risk of prediabetes developing into diabetes. A brisk 30-minutes' daily walk may be as beneficial for one's health (Centers for Disease Control and Prevention, 2022z).

In the 2021 BRFSS, respondents were asked two questions about pre-diabetes. They were asked whether they had had a test for high blood sugar or diabetes in the past three years, and if they had ever been told by a doctor or other health professional that they had pre-diabetes or borderline diabetes. Table 34 shows that in 2021, slightly over 50 percent of adults in Delaware as well as in the USA, indicated that they had had a test for high blood sugar or diabetes within the past three years: 51.0 percent and 50.6 percent. Only 12.5 percent of respondents in Delaware and 11.8 percent of respondents nationwide have ever been told by a doctor or other health professional that they have pre-diabetes or borderline diabetes (Table 35).

Table 34: Had a test for high blood sugar or diabetes in the past three years?

	Delaware Wt. %	U.S. Wt. %
Yes	51.0	50.6
No	45.3	45.1
Don't know/ Not sure	3.7	4.3
Refused	0.1	0.1

Table 35: Ever been told by a doctor or other health professional that you have pre-diabetes or borderline diabetes?

	Delaware Wt. %	U.S. Wt. %
Yes	12.5	11.8
Yes, during pregnancy	0.8	1.2
No	86.1	86.4
Don't know/ Not sure	0.4	0.5
Refused	0.1	0.1

Table 36 presents the outcomes of respondents answering the question about whether they have ever been told they had pre-diabetes or borderline diabetes according to their socio-demographic characteristics. As mentioned above, being 45 years old and older increases the risk of getting pre-diabetes. As it follows from Table 36, the older the respondents were, the more of them had prediabetes. For example, in the group of 18–24-year-olds, only 3.4 percent of individuals had ever been told they had diabetes or borderline diabetes, whereas in the group of 45–54-year-olds – 12.7 percent, in the group of 55-64-year-olds – 18.5 percent, and in the group of 65 and older – 20.0 percent. Males and females had approximately the same number of people diagnosed with pre-diabetes or borderline diabetes: 12.2 percent vs. 12.8 percent.

However, even though CDC avers that Hispanic/Latino Americans are among the race/ethnic groups that are at a higher risk of having pre-diabetes, in Delaware, in 2021, Hispanic respondents had the smallest number of people among them who had pre-diabetes or borderline diabetes: 10.1 percent. White and Black/non-Hispanic Delawareans ranked second with the same 12.8 percent of people among them having either pre-diabetes or borderline diabetes. The group that had the largest ratio of respondents with the conditions was that of Other race/non-Hispanic with 14.1 percent. Finally, no clear pattern was detected between the numbers of respondents with pre-diabetes and borderline diabetes and their level of education, although some correlation was revealed between the level of income and the ratios of respondents with the conditions. In general, the wealthier the respondents were, the fewer of them had either pre-diabetes or diabetes. The only exception was the group with the annual income between $50,000 and $99,999. There were more respondents with the conditions in this group (12.2 percent) than respondents in either the preceding or the following groups: 10.9 percent and 10.6 percent, respectively.

Table 36: Pre-Diabetes			
	Have you ever been told you have pre-diabetes or borderline diabetes? Yes.		
	Wt. %	95% C.I.	Est. Pop.
Total	12.5	[11.1, 14.0]	84,868
AGE			
18-24	3.4	[1.3, 8.6]	2,730
25-34	5.4	[3.2, 9.1]	6,561
35-44	10.2	[7.0, 14.7]	11,070
45-54	12.7	[9.6, 16.7]	13,066
55-64	18.5	[14.9, 22.7]	20,310
65 and over	20.0	[17.0, 23.4]	31,128
GENDER			
Male	12.2	[10.2, 14.5]	38,995
Female	12.8	[11.0, 14.9]	45,872
RACE-ETHNICITY			
White/Non-Hispanic	12.8	[11.2, 14.7]	54,590
Black/Non-Hispanic	12.8	[9.7, 16.7]	17,399
Other race/Non-Hispanic	14.1	[7.0, 26.4]	4,541
Multiracial/Non-Hispanic	11.8	[4.7, 26.6]	1,062
Hispanic	10.1	[6.4, 16.7]	5,971
EDUCATION			
Did not graduate from High School	12.2	[7.4, 19.4]	7,959
Graduated High School	13.7	[11.0, 16.9]	28,856
Attended College or Technical School	13.2	[10.6, 16.2]	25,240
Graduated College or Technical School	10.9	[9.1, 12.9]	22,178
HOUSEHOLD INCOME			
Less than $15,000	17.2	[9.9, 28.3]	3,827
$15,000-$24,999	17.2	[11.6, 24.8]	8,249
$25,000-$34,999	12.3	[8.5, 17.5]	8,147
$35,000-$49,999	10.9	[7.5, 15.5]	7,662
$50,000-$99,999	12.2	[9.6, 15.4]	20,6676
$100,000-$199,999	10.6	[7.8, 14.1]	12,677
$200,000 or more	10.4	[5.8, 17.7]	3,050

Module 2: Diabetes

Adult diabetes prevalence in Delaware was considered in detail in *Section 7: Chronic Health Conditions*. Table 37 demonstrates how the prevalence changed in the state and nationwide within the last ten years. Between 2011 and 2021, the fluctuation was not considerable, even though a slight growth occurred between 2011 and 2020. In 2021, the number of people diagnosed with diabetes in Delaware decreased by 0.5 percentage points, while nationwide it increased 0.3 percentage points.

Table 37: Adult Diabetes Prevalence in Delaware and the U.S.

Year	Delaware Wt. %	U.S. Wt. %
2011	9.7	9.8
2012	9.6	10.2
2013	11.1	10.3
2014	11.1	10.5
2015	11.5	10.5
2016	10.6	10.8
2017	11.3	10.9
2018	11.9	11.4
2019	12.8	11.1
2020	12.4	11.1
2021	11.9	11.4

The 2021 BRFSS also surveyed respondents on questions concerning receiving recommended care. According to Table 38, approximately the same numbers of respondents aged 18 and older diagnosed with diabetes in Delaware and nationwide were taking insulin, told that their eyes were affected by diabetes, or took a class in diabetes management.

Table 38: Percentage of Delaware Adults Aged 18 or Older with Diagnosed Diabetes who Reported Receiving Recommended Care

	Delaware Wt. %	U.S. Wt. %
1. Now taking insulin	30.3	33.0
2. Have ever been told that diabetes has affected eyes	16.3	19.1
3. Have ever taken a class in diabetes management	51.1	50.8

Module 5: HPV Vaccination

Human papillomavirus, or HPV, is the most common sexually transmitted infection (STI) in the U.S. According to CDC, in 2018, there were approximately 43 million HPV infections, mostly among very young people: those in their late teens and early 20s. There are different types of HPV, and some can lead to serious health problems such as cancer. HPV is transmitted mostly during sexual intercourse but can also be spread through close skin-to-skin touching during sex (Centers for Disease Control and Prevention, 2022aa).

In most cases, HPV disappears on its own within two years without causing any problems. However, if it does not go away, it may cause genital warts and different types of cancer, including cervical. To avoid HPV and related health problems, it is important to get vaccinated and get screened for cervical cancer. This routine screening is recommended for women between the ages of 21 and 65. Sexually active people should use condoms or try to be in a mutually monogamous relationship (Centers for Disease Control and Prevention, 2022aa).

HPV vaccines have been found to work extremely well with the potential of preventing over 90 percent of cancers attributed to the virus. CDC recommends that all children aged 11-12 should get vaccinated and receive two doses of HPV vaccine 6 to 12 months apart. Additionally, teens and young adults through age 26 who did not start or finish the HPV vaccine series at the recommended age of 11-12, also need HPV vaccination (Centers for Disease Control and Prevention, 2021e).

In the 2021 BRFSS, respondents were asked if they had ever had an HPV vaccination. Table 39 shows that more people in Delaware than nationwide have ever had an HPV vaccine administered to them: 23.9 percent vs. 20.7 percent.

Table 39: HPV Vaccination

	Delaware Wt. %	U.S. Wt. %
Have you ever had an H.P.V. vaccination?	23.9	20.7

Table 40 presents respondents' answers to the question depending on their socio-demographic characteristics. In Delaware, many more younger people have been vaccinated than people in the older age groups. For example, 38.0 percent of 18–24-year-olds have been vaccinated, while only 3.7 percent of 45–54-year-olds have received vaccination. The data for the age groups of 55–64-year-olds and 65 and older was not available. Many more women than men have had an HPV vaccination: 28.5 percent vs. 19.4 percent, and the difference was statistically significant. White/non-Hispanic respondents had the largest ratio of vaccinated individuals among them followed by Black/non-Hispanic and Hispanic respondents: 25.5 percent, 25.1 percent, and 21.4 percent, respectively. The levels of education and income did not reveal any specific patterns with respect to the numbers of respondents who have ever had an HPV vaccination.

Table 40: HPV Vaccination (cont.)			
	Have you ever had an H.P.V. vaccination?		
	Wt. %	95% C.I.	Est. Pop.
Total	23.9	[20.6, 27.5]	73,304
AGE			
18-24	38.0	[29.3, 47.6]	25,887
25-34	33.3	[27.3, 40.0]	35,878
35-44	11.1	[7.2, 16.8]	10,210
45-54	3.7	[1.9, 7.3]	1,328
55-64	--	[--]	--
65 and over	--	[--]	--
GENDER			
Male	19.4	[15.3, 24.3]	30,371
Female	28.5	[23.6, 33.9]	42,932
RACE-ETHNICITY			
White/Non-Hispanic	25.5	[21.2, 30.5]	44,093
Black/Non-Hispanic	25.1	[17.9, 34.1]	15,856
Other race/Non-Hispanic	13.7	[5.6, 29.6]	2,320
Multiracial/Non-Hispanic	19.5	[8.9, 37.7]	1,071
Hispanic	21.4	[14.5, 30.4]	9,375
EDUCATION			
Did not graduate from High School	11.4	[5.2, 23.0]	4,001
Graduated High School	23.1	[17.4, 29.9]	22,754
Attended College or Technical School	30.2	[23.1, 38.3]	24,429
Graduated College or Technical School	24.7	[19.9, 30.2]	22,119
HOUSEHOLD INCOME			
Less than $15,000	10.4	[3.7, 25.9]	1,435
$15,000-$24,999	31.9	[19.6, 47.4]	6,537
$25,000-$34,999	29.9	[20.1, 41.9]	9,687
$35,000-$49,999	24.5	[15.5, 36.4]	8,832
$50,000-$99,999	29.3	[22.9, 36.5]	21,966
$100,000-$199,999	19.1	[12.9, 27.4]	12,364
$200,000 or more	28.6	[12.7, 52.4]	3,269

Module 13: Cancer Survivorship – Type of Cancer

Cancers are diseases in which abnormal cells divide out of control and become capable of invading other tissues. Cancerous cells can spread to other parts of the body via the blood and lymph systems. A distinction is made among more than 100 types of cancer. Most of them are named for the organ or type of cell in which they start. For example, lung cancer begins in the lung and laryngeal cancer – in the larynx, or voice box (Centers for Disease Control and Prevention, 2021f).

Cancer symptoms can include the following:

- A thickening or lump in any part of the body
- Weight loss or gain with no known reason
- A sore that does not heal
- Hoarseness or a cough that does not go away
- A hard time swallowing
- Discomfort after eating
- Changes in bowel or bladder habits
- Unusual bleeding or discharge
- Feeling weak or very tired (Ibid.).

Table 41 provides information on how many different types of cancer respondents who were diagnosed with cancer had. Most people in Delaware and in the U.S. who were diagnosed with cancer had only one type of the disease: 75.2 percent in Delaware and 78.4 percent nationwide. Slightly over one fifth of respondents with cancer in Delaware had two types of cancer (20.1 percent), while in the U.S., 16.3 percent had two types of cancer. A much smaller percentage of respondents in Delaware and nationwide had three or more types of cancer: 2.9 percent and 3.5 percent, respectively.

Table 41: Types of Cancer in Delaware and the U.S.		
	Delaware Wt. %	U. S. Wt. %
Only one	75.2	78.4
Two	20.1	16.3
Three or more	2.9	3.5
Don't know/Not sure	0.7	1.1
Refused	1.1	0.8

Table 42 presents data on the ratios of different types of cancer in Delaware and in the whole country. In Delaware, the most widely spread type of cancer was melanoma – a type of skin cancer, at 16.9 percent. It was followed by breast cancer (13.7 percent), and prostate cancer (10.1 percent). Nationwide, breast cancer ranked first at 14.4 percent, followed by melanoma (13.2 percent), and prostate cancer (8.3 percent).

Table 42: Types of Cancer in Delaware and the U.S. (cont.)		
	Delaware Wt. %	U. S. Wt. %
Breast cancer	13.7	14.4
Cervical cancer	2.6	3.7
Endometrial cancer	1.2	2.2
Ovarian cancer	0.5	1.1
Head and neck cancer	0.1	0.3
Oral cancer	0.1	0.2
Pharyngeal (throat) cancer	--	0.4
Thyroid	1.6	2.9
Larynx	--	0.1
Colon (intestine) cancer	2.5	3.2
Esophageal (esophagus)	--	0.3
Liver cancer	0.0	0.7
Pancreatic (pancreas) cancer	0.0	0.2
Rectal (rectum) cancer	0.3	0.3
Stomach	0.4	0.2
Hodgkin´s Lymphoma (Hodgkin’s disease)	1.5	1.1
Leukemia (blood) cancer	1.5	1.9
Non-Hodgkin´s Lymphoma	0.7	1.5
Prostate cancer	10.1	8.3
Testicular cancer	0.3	0.8
Melanoma	16.9	13.2
Other skin cancer	32.3	26.9
Heart	--	0.0
Lung	2.1	2.1
Bladder cancer	2.8	1.9
Renal (kidney) cancer	1.4	1.4
Bone	--	0.4
Brain	0.2	0.3
Neuroblastoma	--	0.0
Other	4.2	4.1

Module 14: Cancer Survivorship – Course of Treatment

After a person is diagnosed with cancer, he or she receives recommendations about certain kinds of treatment. The best cancer treatment for an individual depends on the type of cancer they have and the stage of the disease, i.e., how far the cancer has spread in the body. In some cases, treatment is meant to cure the cancer, while in others the goal is to stop it from spreading further. Another type of treatment called *palliative care* may be provided to reduce side effects of other treatments and make the patient more comfortable. Palliative care can be given regardless of the stage of cancer, and even in cases when the cancer is treatable (Centers for Disease Control and Prevention, 2022bb).

Common types of cancer treatment include the following

- **Surgery:** An operation where doctors cut out tissue with cancer cells.
- **Chemotherapy:** Special medicines that shrink or kill cancer cells.
- **Radiation therapy:** Using high-energy rays (similar to X-rays) to kill cancer cells.
- **Hormone therapy:** Blocks cancer cells from getting the hormones they need to grow.
- **Immunotherapy:** A treatment that works with your body's immune system to help it fight cancer cells or to control side effects from other cancer treatments.
- **Stem cell transplant (bone marrow transplant):** Replace bone marrow cells lost due to very high doses of chemotherapy or radiation therapy. Most commonly used to treat blood cancers and cancers in lymph nodes (Ibid.).

The 2021 BRFSS asked respondents with cancer different questions concerning their cancer course of treatment. First, respondents were asked if they were receiving treatment of cancer at the moment. Then, among others, there were questions about whether any health professional ever gave respondents a written summary of all the cancer treatments that they had received, about instructions for getting routine check-ups after completing treatment of cancer, whether the instructions were written down or printed on paper, whether respondents' health insurance paid for all or part of their cancer treatment, and whether they had participated in a clinical trial as part of their cancer treatment.

Table 43 presents the outcomes of respondents' answers to these questions. It follows from the table, that in Delaware and nationwide, approximately the same number of people were receiving treatment for cancer, got instructions from health professionals about the necessary check-ups after completing cancer treatment, had their health insurance paid for all or part of their cancer treatment, etc. For example, 15.0 percent of respondents in Delaware were receiving cancer treatment at the time of conducting the 2021 BRFSS, and 14.5 percent – nationwide. Almost 82 percent of respondents in the state received instructions concerning follow-up check-ups vs. 78.4 percent in the U.S. Over 98 percent of respondents in Delaware had their insurance cover all or part of their cancer treatment as compared to 95 percent in the U.S.

Table 43: Cancer Course of Treatment in Delaware and the U.S.

	Delaware Wt. %	U. S. Wt. %
Currently receiving treatment of cancer	15.0	14.5
Received a summary of cancer treatments	50.2	47.8
Ever receive instructions from a doctor for follow-up check-ups	81.8	78.4
Instructions were written down or printed on paper	74.7	73.0
Health insurance paid for all or part of cancer treatment	98.2	95.1
Participated in a clinical trial as part of cancer treatment	6.8	6.4

Module 15: Cancer Survivorship – Pain Management

Cancer itself as well as treatments used for it may cause pain. Therefore, pain control is an important part of a patient's cancer treatment plan (Centers for Disease Control and Prevention, 2022cc).

According to the National Cancer Institute, pain can be controlled either with pain medicine or with non-drug approaches (National Cancer Institute, 2022). Common types of pain in people with cancer include the following:

- *Acute pain*, which may feel sharp and come on quickly. It often lasts for only a short time.
- *Breakthrough pain*, which may come on suddenly, is pain that may occur while you are taking medicine to manage chronic pain. It usually lasts for a short time and may be intense. Breakthrough pain may happen even when you're taking the correct amount of pain medicine, if the current medicine is wearing off, for example.
- *Chronic pain*, also called persistent pain, is pain that usually lasts more than three months. It may be mild or severe. Chronic pain may come and go or be constant. Chronic pain levels may also stay the same, or get worse, over time (Ibid.).

The doctor develops a plan to control the patient's pain based on the description of the pain provided by the patient, his or her symptoms, physical exam, and, if necessary, imaging tests. In the 2021 BRFSS, people with cancer were asked if they experienced physical pain at the moment that was caused by their cancer or cancer treatment, and if their pain was under control. Fifteen percent of respondents with cancer in Delaware and 14.5 percent of respondents in the U.S., indicated they had physical pain that was the result of their cancer or cancer treatment (Table 44).

As for the question about having one's pain under control, more respondents nationwide said they had their pain under control with medication or treatment than in Delaware: 43.1 percent vs. 32.5 percent (Table 45). Slightly more respondents in the U.S. than in Delaware had their pain under control without any medication or treatment: 31.6 percent vs. 29.8 precent. However, many more respondents in Delaware than in the U.S. indicated that their pain was not under control, and that they had no medication or treatment for their pain: 20.0 percent vs. 14.1 percent.

Table 44: Cancer Survivorship: Pain Management		
	Delaware Wt. %	U. S. Wt. %
Do you currently have physical pain caused by your cancer or cancer treatment	15.0	14.5

Table 45: Cancer Survivorship: Pain Management (cont.) Would you say your pain is currently under control…?		
	Delaware Wt. %	U. S. Wt. %
With medication or treatment	32.5	43.1
Without medication or treatment	29.8	31.6
Not under control, with medication or treatment	10.1	9.4
Not under control, without medication or treatment	20.0	14.1

Module 16: Home/Self-Measured Blood Pressure

High blood pressure or hypertension is a health condition that may lead to serious consequences and contributes to almost half a million deaths in the United States annually. Around 108 million people in this country have high blood pressure, whereas only 1 in 4 of those people have the condition under control. High blood pressure, however, is preventable and treatable (Centers for Disease Control and Prevention, 2022dd).

The cost of high blood pressure to the nation ranges from $134 to $198 billion a year (Kirkland et al., 2018), which includes the cost of health care and services, medication to treat the condition, and productivity loss due to premature death (Centers for Disease Control and Prevention, 2022dd).

The following risk factors may contribute to high blood pressure:

- Having elevated blood pressure (120-129/<80 mm Hg)
- Having diabetes
- Eating foods high in sodium
- Not getting enough physical activity
- Having obesity
- Drinking too much alcohol (Ibid.)

There are some evidence-based interventions that help people monitor and control their blood pressure. One of them is self-measured blood pressure monitoring, or SMBP. It is the regular measurement of blood pressure by a patient taken either at his/her home or somewhere else outside of a clinical setting. A personal blood measurement device is often used for the purpose (Centers for Disease Control and Prevention, 2021g). The Community Preventive Services Task Force reported the following findings:

- Strong evidence that SMBP interventions, when combined with additional support like patient counseling, education, or web-based support, are effective in improving blood pressure outcomes in patients with high blood pressure (The Community Guide, 2020a).

- Sufficient evidence that SMBP interventions, when used alone, are effective in improving blood pressure outcomes in patients with high blood pressure (The Community Guide, 2020b).
- Additionally, SMBP interventions are cost-effective when used with either additional support or within team-based care. The return on investment is from $7.50 to $19.34 per dollar in the long run (10 years) (Arrieta et al, 2014).

In 2021, 29.4 percent of Delawareans indicated that they had been recommended to check their blood pressure outside of the healthcare professional's office or at home as compared to 29.1 percent of respondents nationwide (Table 46). Also, 30.1 percent of respondents in Delaware regularly checked their blood pressure outside of the healthcare professional's office or at home, while 29.4 percent of respondents in the country did that.

Table 46: Home/Self-Measured Blood Pressure

	Delaware Wt. %	U. S. Wt. %
Have been recommended to check blood pressure outside of the healthcare professional's office or at home	29.4	29.1
Regularly check blood pressure outside of the healthcare professional's office or at home	30.1	29.4

Module 19: Caregiver

According to CDC, caregiving for family and friends is a public health issue. It affects the quality of life for millions of people (Centers for Disease Control and Prevention, 2019). Caregivers are individuals who provide assistance to another person by attending to their social or health needs. The needs may include help with bathing, dressing, paying bills, shopping, etc., or emotional support for someone suffering from a chronic disease or disability. Providing care to someone else may adversely affect the caregiver's life in many ways. For example, it may negatively impact one's ability to work, engage in social interactions or relationships, and maintain good health, physical as well as mental (Talley & Crews, 2007). Informal caregivers provide regular care or assistance to a friend or family member with a health problem or disability and their assistance can be unpaid (Hoffman & Zucker, 2016).

In the words of Hoffman and Zucker (2016), since the population ages and disability increases, it is imperative that we realize the physical and mental health burden placed on caregivers, the diversity of tasks they may have to perform, and the impact that long-term diseases and disability exert on society and economy (Ibid.). Talley and Crews (2007), state that it is important to gather information on these topics in order to plan for public health approaches to be able to help individuals and communities and maintain the health of both caregivers and those they care for.

In 2021, 18.5 percent of respondents in Delaware provided regular care to a friend or family member who had a health problem or some disability over the period of 30 days, whereas in the U.S., a little over 20 percent of respondents did the same (Table 47). Slightly more respondents nationwide than in Delaware cared for a person who also had Alzheimer's, dementia, or other cognitive impairment disorder: 13.7 percent vs. 13.0 percent. More respondents in Delaware than in the U.S. expected to provide care to a friend or family member with a health problem or disability in the next two years: 15.8 percent vs. 13.6 percent.

Table 47: Caregiver		
	Delaware Wt. %	U. S. Wt. %
Provided regular care to a friend or family member with a health problem or disability during the past 30 days	18.5	20.1
The person you care for also has Alzheimer's, dementia, other cognitive impairment disorder	13.0	13.7
Expect to provide care to a friend or family member with a health problem or disability in the next 2 years	15.8	13.6

Table 48 presents information regarding the main health problems or disabilities the person a caregiver cared for had. As it follows from the table, most people who needed assistance of a caregiver needed it because of their old age or infirmity/frailty: 11.3 percent in Delaware and 13.1 percent in the U.S. This group was followed by those who suffered from Alzheimer's, dementia, or other cognitive impairment disorder: 8.8 percent in Delaware and 9.3 percent nationwide. However, the health problem or disability that ranked third, turned out to be different in Delaware and in the U.S. In Delaware, it was cancer at 7.6 percent, and in the whole country it was heart disease, hypertension, and stroke – 8.0 percent.

Table 48: Caregiver (cont.) Main health problem or disability the person cared for has		
	Delaware Wt. %	U. S. Wt. %
Arthritis/rheumatism	4.7	4.0
Asthma	0.7	0.5
Cancer	7.6	7.2
Chronic respiratory conditions such as emphysema or COPD	2.1	3.6
Alzheimer's, dementia, or other cognitive impairment disorder	8.8	9.3
Developmental disabilities such as autism, Down's Syndrome	3.4	4.4
Diabetes	4.5	5.8
Heart disease, hypertension, stroke	6.4	8.0
Human Immunodeficiency Virus Infection (H.I.V.)	0.2	0.2
Mental illnesses, such as anxiety, depression, or schizophrenia	3.0	4.6
Other organ failure or diseases such as kidney or liver problems	2.3	2.7
Substance abuse or addiction disorders	0.4	0.4
Injuries, including broken bones	5.6	5.7
Old age/ infirmity/frailty	11.3	13.1
Other	33.8	24.7

Module 21: Marijuana Use

Marijuana (also known as cannabis, weed, pot or dope) refers to the dried flowers, leaves, stems, and seeds of the cannabis plant, which contains more than 100 compounds (or cannabinoids). The compounds are divided into two groups: tetrahydrocannabinol (THC), which is impairing, and cannabinol (CBD), which is not impairing, meaning a person does not get "high" when using it (Centers for Disease Control and Prevention, 2021h).

Marijuana may have various effects on the brain and body. The use of marijuana by adolescents or young adults may adversely affect how their brain builds connections for such functions as attention, memory, and learning. These effects may be long-term or even permanent. The use of marijuana within 24 hours may negatively impact the parts of one's brain that are responsible for decision-making, coordination, emotions, and reaction. Smoking marijuana may damage one's lungs, increase risk of bronchitis, stroke, heart disease and other vascular diseases. Additionally, the use of marijuana can make the symptoms of social anxiety and depression more severe, and it has been linked to suicide and schizophrenia. Inhaling or eating marijuana is also associated with certain health risks (Ibid.).

Even though the Food and Drug Administration (FDA) has approved one plant-based marijuana drug and two medications made from synthetic chemicals that have similar effects to THC, at the federal level marijuana remains illegal. At the same time, over 50 percent of states, the District of Columbia and some U.S. territories have legalized marijuana for medical use (Centers for Disease Control and Prevention, 2021h).

In Delaware, House Bill (HB) 39 took effect in 2015, which eliminated the threat of arrest and jail time for adults who possessed a small amount of marijuana. In 2019, Governor John Carney signed Senate Bill (SB) 45 into law, which further decriminalized the use of marijuana by those under 21. Thus, under Delaware law, possession, or private use of small amounts of marijuana (one ounce or less) is no longer considered to be a criminal offense but is rather qualified as civil violation (MPP.org, 2022).

In addition, according to the Delaware Medical Marijuana Act, "a registered qualifying patient shall not be subject to arrest, prosecution, or denial of any right or privilege, including but not limited to civil penalty or disciplinary action by a court or occupational or professional licensing board or bureau, for the medical use of marijuana pursuant to this chapter, if the registered qualifying patient does not possess more than 6 ounces of usable marijuana" (The Delaware Code Online, n.d.). Finally, subparagraph (f) of paragraph 4901A of the Delaware Medical Marijuana Act reads as follows: "States are not required to enforce federal law or prosecute people for engaging in activities prohibited by federal law. Therefore, compliance with this chapter does not put the State of Delaware in violation of federal law" (Ibid.).

In the 2021 BRFSS, respondents were asked on how many days they had used marijuana or cannabis during the past 30 days, in what way they had used marijuana most often (i.e., whether they had smoked, eaten, drunk, vaporized, or dabbed it), and the reasons for which respondents had used marijuana, including medical, non-medical, or both.

Table 49 presents the outcomes of respondents' answers to the question about the reasons for which they used marijuana. According to the table, more respondents in Delaware than in the U.S. used marijuana for either medical or non-medical reasons: 30.8 percent vs. 24.3 percent and 40.5 percent vs. 35.0 percent, respectively. However, many more respondents nationwide used marijuana for both medical and non-medical reasons than in Delaware, the difference being slightly more than 11 percentage points.

Table 49: Marijuana use in Delaware and the U.S. during the past 30 days

	Delaware Wt. %	U. S. Wt. %
Used marijuana for medical reasons	30.8	24.3
Used marijuana for non-medical reasons	40.5	35.0
Used marijuana for both medical and non-medical reasons	28.6	39.7

Module 22: Tobacco Cessation

CDC reports that commercial tobacco use is the leading cause of preventable disease, disability, and death in the United States. Every day, approximately 1,600 minors nationwide try their first cigarette. Other statistical data show that almost 31 million adults in the United States smoke, over 3 million middle and high school students use tobacco products, 1 in 4 people who do not smoke are exposed to secondhand smoking, and more than $240 billion is spent annually on treatment of smoking-related diseases (Centers for Disease Control and Prevention, 2022ee).

Smoking can have harmful effects on nearly every organ of the body. It causes several forms of cancer, heart disease, stroke, lung disease, and puts smokers at a 30 to 40 percent higher risk of developing type 2 diabetes than non-smokers. Smoking during pregnancy increases the risk of pregnancy complications, such as premature birth, low birth weight, certain birth defects and sudden infant death syndrome or SIDS (Ibid.).

CDC spends millions of dollars to support comprehensive tobacco control programs. In FY 2021, for example, CDC provided more than $96 million to support states, territories, tribal organizations, etc. in their efforts to reduce tobacco-related diseases and death. Recipients of the funds use the money on evidence-based strategies that help:

- Prevent young people from using tobacco products.
- Help people quit using tobacco products.
- Eliminate exposure to secondhand smoke.
- Advance health equity by identifying and eliminating tobacco-related disparities (Centers for Disease Control and Prevention, 2022ee).

CDC promotes free support services to help people quit using tobacco and provides state tobacco control programs with access to cessation-related materials, which include information about best practices, clinical guidelines, and health insurance coverage (Centers for Disease Control and Prevention, 2022ff).

In the 2021 BRFSS survey, respondents were asked how long it was since they last had smoked a cigarette, even one or two puffs, and whether during the past 12 months they had stopped smoking for one day or longer because they had been trying to quit smoking. The figures in table 50 indicates that in 2021, almost 50 percent of respondents in Delaware and more than 51 percent of respondents in the U.S. stopped smoking for one day or longer within the period of 12 months because they were trying to quit.

Table 50: Tobacco Cessation

	Delaware Wt. %	U. S. Wt. %
Have stopped smoking for one day or longer due to trying to quit smoking during the past 12 months	49.6	51.6

Part 5

CONCLUSION

The 2021 Behavioral Risk Factor Surveillance System (BRFSS) collected information from 3,640 Delaware adults aged 18 and older via a random-sample telephone survey. The CDC-provided weighting variable was utilized in this study to generalize the prevalence rates of health issues, health care access, chronic diseases, and some behavioral risk factors among the population. The following are the key findings from the 2021 BRFSS analysis.

[1] Health Status

- In 2021, in Delaware, 85.3 percent of respondents reported that they evaluated their general health as “good” or “better”, while 14.6 percent evaluated their general health as “fair” or “poor”.

- The impact of COVID-19 on respondents’ physical and mental health might have started manifesting itself, since in 2021, fewer individuals in Delaware reported that they had had zero days when their physical and mental health status was not good for the past 30 days at the time of the interview than in 2020.

- Close to 90 percent of respondents aged 18 and above had health care coverage in Delaware in 2021, while almost 7 percent did not have insurance. At the same time, if one took into consideration only respondents aged 18 to 64, the ratio of individuals with health care coverage dropped 26.2 percentage points to 62.6 percent.

- Hispanic respondents had the largest ratio of individuals among them who evaluated their general health as “fair” or “poor” and had the lowest rate of health care coverage among all race-ethnic groups. For example, among those aged 18 and over, the difference in health care coverage between Hispanic and White/non-Hispanic respondents was 35 percentage points, and among those aged 18 to 64, the difference between Hispanic and Other race/non-Hispanic respondents was 27.7 percentage points.

[2] Chronic Health Conditions

- In 2021, ten types of chronic health diseases were surveyed in Delaware. The three most prevalent chronic diseases were depressive disorder, asthma, and diabetes. The prevalence of depressive disorder among Delaware adults was 16.3 percent, of asthma – 13.8 percent, and of diabetes – 11.9 percent.

[3] Behavioral Risk Factors

- Below are some highlights of the risk factors that the 2021 BRFSS inquired about:

  - *Exercise*: 72.5 percent of respondents in Delaware participated in some physical activity or exercise in the past month. The rates of participation correlated with the levels of education and income, i.e., the better educated respondents were or the more affluent they were, the higher was the ratio of individuals who participated in physical activity or exercise. More males participated than females, the difference equaling almost 10 percentage points. Hispanic respondents participated the least among representatives of all race/ethnic groups of respondents.

  - *Tobacco use*: When respondents were asked whether they had smoked at least 100 cigarettes in their entire life, the difference between the youngest and the oldest respondents was slightly over 40 percentage points (8.2 percent vs. 48.3 percent). However, when asked if they currently smoked every day, 41.1 percent of 18–24-year-olds said “yes”, while only 11.2 percent of those 65 and over reported daily smoking. The more educated respondents were, the fewer among them reported daily smoking. The level of income, on the contrary, did not seem to correlate with smoking.

- *Alcohol consumption*: The largest share of binge drinkers turned out to be in the group of the youngest Delawareans aged 18-24 (20 percent), while the group of respondents aged 65 and older had the smallest number of binge drinkers among them (6.6 percent). More males engaged in binge drinking than females (16.4 percent vs. 9.7 percent). No obvious correlation was detected between the prevalence rates of binge drinkers and respondents' level of education or income.

- *Immunization*: Almost 50 percent of adult Delawareans had a flu shot or spray during the past 12 months, while 32 percent ever received a pneumococcal vaccine.

- *HIV/AIDS*: Almost 40 percent of Delawareans were tested for HIV. Most people who were tested were in the middle age groups: 25-34, 35-44, and 45–54-year-olds. Among race/ethnic groups, Black/non-Hispanic respondents had the largest share of individuals who were tested for HIV.

- *HPV Vaccination*: Less than 24 percent of adult Delawareans ever had vaccination for human papillomavirus, or HPV. Most respondents who were vaccinated were in the youngest age-group of 18–24-year-olds. No correlation was detected between the rate of vaccination and respondents' level of education or income.

- *Marijuana Use*: In Delaware, in 2021, 30.8 percent of respondents used marijuana for medical reasons, 40.5 percent – for non-medical reasons, and 28.6 percent – for both medical and non-medical reasons.

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