Health in Iowa 2019 BRFSS Annual Report

From the Iowa 2019 Annual Behavioral Risk Factor Surveillance System Survey

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BRFSS

IDPH

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Protecting and Improving the Health of Iowans

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Executive Summary

The Iowa Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing telephone survey conducted in partnership with the State of Iowa and the Centers for Disease Control and Prevention (CDC). In 2019, BRFSS collected 9,803 telephone interviews from residents, age 18 and older, living in private residences or college housing regarding health conditions, health-related behaviors, attitudes, and awareness of major contributors to illness, disability, and premature death. BRFSS also monitors the prevalence of these indicators over time statewide. Health-related issues analyzed include general health status, health care access, hypertension, cholesterol, body weight, physical activity, nutrition, diabetes, respiratory conditions, immunizations, tobacco use, alcohol consumption, HIV/AIDS testing, mental health and adverse childhood experiences. Comparisons are made to other states and to Healthy People 2020 and Healthy Iowans goals.

FACT

BRFSS is the nation's premier state-based system of health-related telephone surveys.

Significant findings for 2019 include:

- Over 1/3 of adult Iowans with a household income level of less than $15,000 per year reported fair or poor health status.
- General health status continued to decline.
- The prevalence rate for those 18-24 who have had high blood pressure has doubled since 2015.
- 33.4% of Iowans aged 20 and older have been told that they have high cholesterol, which is far from the Healthy People 2020 goal of 13.5%
- Iowa was no longer one of the states with an obesity prevalence rate of 35% or higher, at a rate of 33.9%.
- There was a decline in binge drinking and heavy drinking rates from 2018. Heavy drinking prevalence rates were the lowest reported rates since 2016.
- In 2018, Iowa had the 4th highest prevalence rate of heavy drinking, but in 2019, Iowa was no longer among even the top 10 states with the highest rates of heavy drinking.
- The upward trend for current e-cigarette use continued, especially for 18-24 year olds – this trend has tripled for this age group since 2016 and doubled since 2017.

- Current cigar use doubled since 2018.
- There was a 39% increase in the number of Iowans who currently smoke tobacco in a water pipe or hookah from 2018.
- Iowa had the 4th lowest rate of current asthma in the nation.
- Although they had the lowest percentage out of all age groups, the percentage of 18-24 year olds who had received a flu vaccine rose 14% from 2018 to 2019.
- The number of new HIV/AIDS diagnoses continued to decrease in Iowa, from 136 in 2016 to 98 in 2019.
- Iowa's rate of ever having an HIV test increased from 2018, but was the 2nd lowest testing rate in the United States.
- The rate of ever having a depressive disorder stayed relatively stable from 2018 and has remained much lower than the reported rate in 2017.
- Women experienced depression at almost double the rate of men.
- 10% fewer Iowans reported having a positive experience during childhood (resilience) than in 2018.

Glossary

95% confidence interval: a range of values in which there is a 95% chance of the true value.

Anxiety: excessive worry about everyday events.

Arthritis: a group of over 100 different rheumatic diseases and conditions that result in pain and reduction of functionality in and around the joints.

Asthma: a chronic inflammatory disease of the lungs in which the airways become blocked or narrowed, causing breathing difficulty.

Binge Drinking: drinking too much at one time; five drinks for men or four drinks for women.

Cancer: a group of cells that grows out of control and has the ability to invade normal tissue.

Cervix: the lower part of the uterus (womb).

Coefficient of Variability: a standardized measure of dispersion defined as the ratio of the standard deviation to the mean.

Diastolic Pressure: the bottom number in blood pressure recorded as the heart relaxes between beats.

Depression: a state of low mood and an aversion to activity.

Diabetes Mellitus: a group of diseases characterized by high levels of blood glucose resulting from defects in insulin production, insulin action or both.

Disability: an umbrella term for impairments, activity limitations and participation restrictions.

Frequent Mental Distress: having 14 or more of the last 30 days in which mental health was not good.

Health-Related Quality of Life: an individual's or group's perceived physical and mental health over time.

Hypertension: a chronic medical condition in which the blood pressure in the arteries is constantly elevated.

Influenza or "flu": a contagious respiratory illness caused by viruses that infect the nose, throat and lungs.

Impairment: any loss or abnormality of psychological, physiological or anatomical structure or function.

Partial Complete: an interview that was terminated before it was complete, but sufficient data had been collected to use for most measures.

Pneumonia: a lung disease caused by bacteria, viruses and other infectious agents such as fungi.

Population: the complete set of objects of interest; for instance, all adult Iowans would be a population.

Prevalence: the degree to which a characteristic or condition exists.

Sample: a set of observations used to represent a larger set of things.

Sampling Frame: a list of all those within a population who can be sampled.

Standard Deviation: a measure of the variability of observations around their mean.

Stratum: a set of things into which a larger set can be divided based on some common characteristic.

Systolic Pressure: the top number in blood pressure recorded as the heart beats.

FACT

BRFSS collects data on health-related risk behaviors, use of clinical preventive practices and health care access related to chronic health conditions and injury.

List of Acronyms

ACEs: Adverse Childhood Experiences

ADLs: Activities of Daily Living

AIDS: Acquired Immunodeficiency Syndrome

ATDs: Assistive Technology Devices

BMI: Body Mass Index

BRFSS: Behavioral Risk Factor Surveillance System

CATI: Computer-Aided Telephone Interviewing

CDC: Centers for Disease Control and Prevention

CHC: Coronary Heart Disease

CI: Confidence Interval

COPD: Chronic Obstructive Pulmonary Disease

CVD: Cardiovascular Disease

DSS: Disproportionate Stratified Sampling

FMD: Frequent Mental Distress

HIV: Human Immunodeficiency Virus

HRQOL: Health-Related Quality Of Life

IDPH: Iowa Department of Public Health

MI: Myocardial Infarction

NRT: Nicotine Replacement Therapy

SHS: Secondhand Smoke

SIDS: Sudden Infant Death Syndrome

TLC: Therapeutic Lifestyle Changes

FACT

Adults 18 years or older are randomly selected to participate in the survey and participation is voluntary.

History

In 1984, the Centers for Disease Control and Prevention (CDC) launched the Behavioral Risk Factor Surveillance System (BRFSS), working in an ongoing fashion with several states to assess the health status and health risk behaviors of their citizens. In 1988, Iowa began full participation in the BRFSS. The BRFSS is now conducted in all 50 states, the District of Columbia and a few American territories.

Nature of the Survey

The Iowa BRFSS is an ongoing telephone survey. It is financially and technically supported by the CDC with further financial support from public and private sources.

The BRFSS is designed to collect information from residents age 18 and over living in private residences or college housing on health conditions, health-related behaviors, attitudes and awareness. It also monitors the prevalence of these indicators over time. The indicators surveyed are major contributors to illness, disability and premature death.

This report focuses on the data collected during calendar year 2019. Some of the health-related issues discussed are general health status, health insurance, hypertension and cholesterol awareness, obesity and diabetes, cardiovascular diseases, physical activity, diet and nutrition, respiratory diseases, cancer, tobacco and alcohol, disability, immunization, HIV/AIDS and mental health.

Objectives
The objectives of the BRFSS are:
1. To determine the state specific prevalence of personal health behaviors related to the leading causes of premature death.
2. To develop the capacity of state health departments to conduct credible telephone surveys.
3. To advance the understanding that certain health-related behaviors are critical indicators of health.

Use of BRFSS Data

The CDC developed the BRFSS to help states assess health risks and monitor trends. Comparable surveillance methods are used in all states. This allows for comparisons among states and for the assessment of geographic patterns of risk factor prevalence.

The BRFSS information is used to design, implement and support public health activities. These activities are designed to reduce the premature death and disability of Iowa residents. State public health departments are responsible for planning, implementing and evaluating disease prevention programs.

Many of these programs involve health risk behavior modification. Examples of health risk behavior modification programs in Iowa are the Diabetes Prevention and Control program, nutrition and physical activity campaigns, tobacco cessation and counter-marketing campaigns, campaigns encouraging flu vaccination, and campaigns to increase health screenings and checkups.

One way to assess program effectiveness is to monitor the prevalence of risk factors in the population. Comparing different times, demographic groups or geographic areas may be quite useful in developing, implementing and evaluating intervention programs.

FACT

The BRFSS information is used to design, implement and support public health activities to reduce the premature death and disability of Iowa residents.

Questionnaire Design

The BRFSS questionnaire is updated each calendar year by the CDC and by each participating state. The questionnaire consists of three sections: 1) the core questions required of all states participating in BRFSS; 2) a set of standardized modules developed by the CDC which states may opt to include in their survey; and 3) state-added questions which are designed and administered by individual states to address locally identified health problems. Changes in core and optional module questions were discussed and determinations were made whether to offer them at an annual national BRFSS meeting. They have been previously tested. A group of interested individuals from the Iowa Department of Public Health, guided by the state coordinator, met to discuss which optional modules and state-added questions to include in the coming year. The emerging survey plan was reviewed by the Iowa BRFSS Advisory Committee.

Participation by Iowans in the BRFSS survey is random, anonymous, voluntary and confidential. Survey participants are requested to provide such demographic information as age, sex, race, marital and employment status, annual household income, educational level, and location of residence by county and ZIP code. Information that could possibly be used to identify the respondent, such as location, is suppressed in public use data.

Sampling Process

Two sampling frames are used in the BRFSS. One is for landline telephones, while the other is for cell phones. Only adults age 18 years and older were interviewed in both samples. People residing in group homes or institutions were not sampled.

In the landline sample, one person residing in a household was interviewed. Households were selected using list-assisted random-digit dialing. This method provides a list of randomly chosen phone numbers from the pool of all existing landline phone numbers. These numbers are not drawn in a simple random fashion, but use what is known as the disproportionate stratified sampling technique (DSS). This sampling methodology was designed to produce a random sample of Iowa telephone numbers, including unlisted numbers and new subscribers, in an efficient fashion.

The DSS method divides landline phone numbers into two strata. The first stratum is residential but unlisted. The second stratum is composed of residential listed numbers. Each stratum was sampled at a different rate. The listed residential numbers were sampled at the highest rate. Some numbers were marked by the list provider as not to be called because they have been predetermined to be nonresidential or nonworking. There was no set number to be sampled per group and completed interviews were not thrown out.

The landline sample was also stratified into six geographic regions. These regions are the same regions used by health resource and emergency planning groups within the state.

> **All information collected through BRFSS interviews is confidential. No names or addresses are collected during the interview.**

Geographic regions were represented at the same proportion as their population within the state. A seventh stratum was drawn from census tracts throughout the state containing a relatively high percentage of African American or Hispanic residents in an effort to better represent minority groups in Iowa.

Increasingly, many people, including the young, single, ethnic minorities and renters, are opting not to use traditional landline telephone service in favor of cell phones (AAPOR Cell Phone Task Force 2010; Blumberg & Luke 2017). Therefore, another sampling frame was added devoted to households having cell phones. Iowans were interviewed on whichever phone type they were reached. The number of cell phone interviews was set large enough that more than 25.0% of the sample should be users of cell phones only. The cell phone sample was also geographically stratified into the six regions. The oversample strata were not done, since it is not possible to determine such specific geography for cell phones. Since the cell phone is more an individual appliance than a household appliance, the selection of one person per household was not done. College housing was included in the cell phone sample. These respondents were also asked some extra questions; for instance, they were asked if they were doing anything that would make it unsafe to conduct the interview, and if so, were not interviewed. Because of mobility of cell phone use, there were occasions when cell phone interviews were done involving people

living in other states. The number of cell phone interviews in our sample is, therefore, larger than the number called by our data collection contractor. Cell phone interviews from other states only contained responses to the core questions, since there was no way for them to know which modules we were using or our state added questions.

Approximately equal numbers of interviews per month were conducted from January through December in 2018 2019 for a total sample size of 9,803. Of these, 2,505 were landline and 7,298 were cell phone. Interviews were conducted in both English and Spanish.

Interviewers made multiple attempts to reach a number to complete an interview before replacing that number. If the person selected to take the survey was not available, an appointment was made to complete the interview at another date and time. If the person was not available during the interview period, or if the person refused to participate, no other person was interviewed at that number. Attempts were made to convert initial refusals into participants.

The Interview Process

The interviews were conducted daytime, evenings and weekends with appointments as needed to schedule or complete interviews. The average time to complete an interview was 25.5 minutes for landline and 24.9 minutes for cell phone. The response rate, defined as completed interviews + partial completes divided by all eligible households called, was 57.2% for landline and 59.7% for cell phones. Although the response rates seem rather low and have been declining in recent years, they are better than most states produce.

Not all interviews were fully completed. A partial complete is an interview that was terminated before it was complete, but sufficient data had been collected to use for most measures. This means that results from questions later in the questionnaire are determined from a somewhat smaller sample than earlier questions, even when not restricted to some sub-sample such as a particular age group. See Appendix for the questions and their order.

A Computer Aided Telephone Interviewing (CATI) system was used. The CATI system not only assists interviewers in presenting the questionnaire and recording the responses, it also helps keep track of appointments and callback attempts, and reports statistics of call dispositions.

Advantages and Limitations

Telephone interviews provide a means to conduct affordable surveys to monitor the prevalence of behavioral risk factors. Surveys based on telephone interviews are much faster to complete than surveys based on in-person interviews. In one hour, an experienced telephone interviewer can handle busy numbers, calls not answered and refusals to participate, and still successfully complete one and one-half interviews. In contrast, in one day of in-person interviewing, many miles of travel may be required with few interviews completed.

Another advantage of telephone surveys is the much higher response rate compared to self-administered surveys, such as mail surveys.

Supervision and administration are simpler for telephone interviews than for in-person interviews. All calls can be made from one central location and supervisors can monitor interviewers for quality control.

One main limitation to telephone surveys is that all Iowans are not reachable by telephone. Some do not live in households, but are in institutions such as nursing homes or prisons. Some households do not have telephones. Persons of low socioeconomic status are less likely than persons of higher socioeconomic status to have uninterrupted telephone service and are therefore under-sampled. Furthermore, the percentage of households with a telephone varies by region. Telephone technology such as caller I.D. and call blockers that block telemarketers also pose problems for telephone surveys.

Furthermore, some inaccuracy is expected from any survey based on self-reported information. For example, respondents are known to under-report their weight and inaccurately recall socially undesirable habits. People's memories may also fail or play tricks on them. The potential for bias must always be kept in mind when interpreting self-reported data.

> Iowa had a **66.8%** landline **89.6%** cell phone interview completion rate among eligible respondents in 2019.

Despite these limitations, prevalence estimates from the BRFSS correspond well with findings from surveys based on in-person interviews and actual physical measurements, including studies conducted by the National Center for Health Statistics and the American Heart Association.

Analysis of the data

Unless everyone in the state was asked questions about their health, there would be no way to know exactly what these answers would be. When analyzing BRFSS data, conclusions are to be drawn about the entire adult population of the state of Iowa based on only a sample of randomly chosen people. The true prevalence in the population can only be estimated.

The judgment of the value of prevalence in a population, such as the state based on the prevalence within a sample, always involves educated guesswork. The prevalence values from the survey and the true state population prevalence values may differ by some amount, but a range of state values that are probably true can be determined with a high degree of confidence from the prevalence in the sample.

Most tables in this report will indicate a range of values in which there is a 95% percent chance of the true Iowa value falling. This range is referred to as a 95.0% confidence interval (CI), and the value in the population is probably somewhere within the range. When the CIs of two or more groups do not overlap, their population values can be considered truly or significantly different.

An important factor in determining how well we can judge the response of all Iowans from the survey sample is the number of responses to the questions. The smaller the number of responses, the poorer is our ability to draw a conclusion about the whole state. Analyzing the data by such categories as age, sex, income, level of education and especially race/ethnicity means there are a smaller number of interviews in each

The data collected in the BRFSS are obtained through a complex sample design. The direct application of standard statistical analysis methods for variance estimation and hypothesis testing may yield misleading results.

particular group than in the whole survey. Furthermore, many questions are only answered depending on the answer to previous questions. For instance, a person would only be asked at what age they were diagnosed with diabetes if they answer "yes" to whether they have ever been told they had diabetes. These smaller numbers decrease the ability to determine statistically significant differences. Some data may not be reported as significant solely due to small sample sizes. In general, data in which the number of responses is less than 50 or the variability is too large (coefficient of variability greater than 30.0%) will not be reported since this data is considered highly unreliable.

Some people refuse to answer select questions, but choose to respond to the majority of the questions. Those interviews were still used in the final count for the total sample size. However, they were not counted on the specific questions they refused. Unless otherwise indicated, prevalence measures do not include those who refused to answer a question or said they did not know.

Weighting of the data

Generally, the best guess for how many Iowa adults would answer a question a certain way would be the same as how many adults in the sample answer that way. This is true, however, only if everyone in the state had an equal chance of being in the sample. This is not the case. The number of adults per household and the number of phone numbers per household influence a person's likelihood of being included in the survey. Furthermore, certain demographic groups may be over or under-represented in the sample based on their ease of being reached and willingness to respond. For instance, about half the adult Iowa population is male, but typically only about 40.0% of the sample interviewed is male. To address these problems, the data in the sample is weighted to the state population. That means several of the above factors are used to give each interview a weight that represents a certain distinct number of people in the state population.

A landline telephone is seen as a household appliance, while a cell phone is more frequently seen as an individual possession. This means adults per household and phone numbers per household become irrelevant for cell phones. These two factors are not used in determining weights for cell phone interviews.

A large number of factors are considered in the weighting process. Age, gender, race/ethnicity, marital status, education level, home ownership, geographic region and cell vs. landline telephone are all considered. Preliminary weights from the ratio of sampled phone numbers to all numbers are adjusted recursively by these factors until a stable weight is produced.

This weighting method has been in place since 2011. Trend information in this report will only be determined from 2012 forward. Comparisons of pre-2011 data against post-2011 may be unsound data due to the change in data collection methodology for the Core section of the questionnaire. For optional module and state added questions, 2012 was the first year cell phone interviews were included in the research design.

References:
1. AAPOR Cell Phone Task Force (2010). New Considerations for Survey Researchers When Planning and Conducting RDD Telephone Surveys in the U.S. with Respondents Reached via Cell Phone Numbers.
2. Blumberg, S.J. & Luke, J.V. (2017). Wireless Substitution: Early Release of Estimates from the National Health Interview Survey: July–December 2016.

FACT

Since 2011, the BRFSS has used iterative proportional fitting (IPF), also known as raking, to weight data.

Demographics of the BRFSS Respondents

In 2019, 9,803 respondents including 4,583 males and 5,220 females of 18 years or older completed the BRFSS survey interview. The following tables present the distribution of this respondent sample by

1) age and gender;
2) race/ethnicity;
3) level of education; and
4) annual household income.

Table 3.1: Distribution of Iowa Survey Respondents by Age and Gender for Survey Year, 2019

Age	Male		Female		Total	
	#	%	#	%	#	%
18-24	419	4.3	297	2.8	716	7.3
25-34	571	5.8	524	5.3	1,095	11.2
35-44	600	6.1	640	7.0	1,240	12.7
45-54	666	6.8	696	7.5	1,362	13.9
55-64	869	8.9	1,046	10.4	1,915	19.5
65-74	846	8.6	1,064	10.2	1,910	19.5
75+	568	5.8	869	8.1	1,437	14.7
Unknown[1]	44	0.5	84	0.9	128	1.3
Total	4,583	46.8	5,220	52.3	9,803	100

[1]Unknown includes participants who responded with "Don't Know" or refused to answer

Table 3.2: Distribution of Iowa Survey Respondents by Race/Ethnicity for Survey Year, 2019

Race/Ethnicity[2]	# of Total Respondents	% of Total Respondents
White/Non-Hispanic	8,787	89.6
Black/Non-Hispanic	183	1.9
Other/Non-Hispanic[3]	233	2.4
Hispanic	464	4.7
Unknown/Refused	136	1.4
Total	9,803	100.0

[2]Since 2013, the race and ethnicity class was broken down into much finer categories for use in the BRFSS. Due to small numbers in various racial and ethnic groups in Iowa, we continue to display the same categories used in the past.
[3]Multiracial is combined with Other Non-Hispanic.

Table 3.3: Distribution of Iowa Survey Respondents by Level of Education for Survey Year, 2019

Level of Education	# of Total Respondents	% of Total Respondents
Less than High School	539	5.5
High School Grad. or GED	3,051	31.1
Some College/Tech. School	3,042	31.0
College Graduate	3,146	32.1
Unknown/Refused	25	0.3
Total	9,803	100.0

Table 3.4: Distribution of Iowa Survey Respondents by Annual Household Income for Survey Year, 2019

Household Income	# of Total Respondents	% of Total Respondents[2]
Less than $15,000	564	5.8
$15,000 - $24,999	1,118	11.6
$25,000 - $34,999	799	8.3
$35,000 - $49,999	1,169	12.1
$50,000 - $74,999	1,541	16.0
$75,000+	2,968	30.7
Unknown/Refused	1,504	15.6
Total	9,803	100.0

Background

General health status defined by responding to a single question such as "How is your health, in general?" has been found to be a significant predictor of mortality, though it may predict mortality less-well for racial/ethnic groups other than Non-Hispanic Whites (Woo & Zajacova, 2017). Researchers who gathered data from multiple studies using self-rated health to predict mortality found that the risk of mortality is 1.74 times greater for those who reported "poor" health compared to those who indicated "excellent" health, even after adjusting for the existence of other diseases (DeSalvo, Bloser, Reynolds, He, & Muntner, 2006). Additionally, research shows that worse general self-rated health is associated with an increased risk of mortality, even adjusting for depression, cognitive function, ability to function on a day-to-day basis, and socioeconomic status (DeSalvo et al., 2006).

The Centers for Disease Control and Prevention (CDC) has defined health-related quality of life (HRQOL) as "an individual's or group's perceived physical and mental health over time" (Centers for Disease Control, 2018). Tracking health-related quality of life in different populations can identify subgroups with poor physical or mental health so that policies or interventions can be targeted to improve their health.

General Health Status Results

In 2019, when asked how their health was in general, 15.6% of Iowans reported that it was excellent, which continues the downward trend since 2016, when the rate was 17.8%. Another 36.4% rated their health as very good. Additionally, 33.6% of Iowans reported their health to be good while 14.4% rated their health as fair or poor, a very slight increase from 2018, when 14.3% of Iowans rated their health as fair or poor (see Figure 4.1).

Age, education, household income and race/ethnicity all had a significant impact on reported health status (see Table 4.1). The prevalence of reporting fair or poor health increased with lower levels of education and household income levels. Over one-third (34.6%) of adult Iowans with a household income level of less than $15,000 per year reported fair or poor general health status, which was the highest prevalence rate within the demographic groups examined. On the other hand, only 5.6% of those from households earning $75,000 or more per year reported fair or poor health.

Table 4.1: Percentage of Self-Reported General Health Status, 2019

Demographic Groups	General Health Status			
	Good or Better		Fair or Poor	
	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)
Total	85.6	(84.9-86.4)	14.4	(13.6-15.1)
Sex				
Male	85.3	(84.1-86.4)	14.7	(13.6-15.9)
Female	86.0	(84.9-87.1)	14.0	(12.9-15.1)
Race/Ethnicity				
White Non-Hisp.	86.3	(85.5-87.1)	13.7	(12.9-14.5)
Black Non-Hisp.	84.3	(78.7-89.8)	15.7	(10.2-21.3)
Other Non-Hisp.	86.0	(81.2-90.8)	14.0	(9.2-18.8)
Hispanic	77.2	(72.9-81.5)	22.8	(18.5-27.1)
Age				
18-24	92.5	(90.3-94.6)	7.5	(5.4-9.7)
25-34	91.3	(89.5-93.1)	8.7	(6.9-10.5)
35-44	87.0	(85.0-89.1)	13.0	(10.9-15.0)
45-54	85.9	(83.9-87.9)	14.1	(12.1-16.1)
55-64	82.2	(80.1-84.3)	20.0	(18.0-22.1)
65-74	80.0	(77.9-82.0)	17.8	(15.7-19.9)
75+	78.5	(75.9-81.1)	21.5	(18.9-24.1)
Education				
Less Than H.S.	68.3	(63.9-72.6)	31.7	(27.4-36.1)
H.S. or G.E.D.	83.0	(81.6-84.5)	17.0	(15.5-18.4)
Some Post-H.S.	86.7	(83.4-88.0)	13.3	(12.0-14.6)
College Graduate	93.2	(92.2-94.1)	6.8	(5.9-7.8)
Household Income				
<$15,000	65.4	(60.8-70.1)	34.6	(29.9-39.2)
$15,000- 24,999	73.5	(70.4-76.5)	26.5	(23.5-29.6)
$25,000- 34,999	81.7	(78.5-85.0)	18.3	(15.0-21.5)
$35,000- 49,999	84.8	(82.5-87.2)	15.2	(12.8-17.5)
$50,000- 74,999	89.6	(87.8-91.4)	10.4	(8.6-12.2)
$75,000+	94.4	(93.5-95.3)	5.6	(4.7-6.5)

Poor Self-Reported Health

Since January 1993, the BRFSS questionnaire has included four health-related quality-of-life (HRQOL) questions. Four measures of poor health – low general health, frequent physical distress, frequent mental distress and frequent activity limitation are derived from data collected through these questions.

In response to the general physical health question, "Now thinking about your physical health, how many days during the past 30 days was your physical health not good?",

Figure 4.1: Percentage of Self-Reported General Health Status by Year, 2013 – 2019

Year	2013	2014	2015	2016	2017	2018	2019
Status	14.4	13.6	13.0	13.9	15.4	14.3	14.4
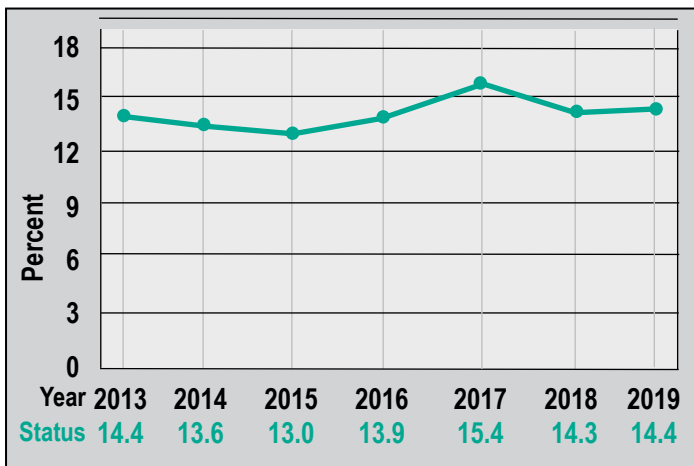
persons who reported that their physical health was not good for greater than or equal to 14 of the preceding 30 days were defined as having frequent physical distress (FPD). In 2019, 9.9% of Iowans reported experiencing FPD, which was slightly higher than the prevalence rate in 2018 (9.6%), but still lower than the prevalence rate in 2017 (10.3%). Over one-quarter, 26.3%, of Iowans with house-hold incomes of less than $15,000 reported having 14 or more bad physical health days. On the other end, 4.6% of those with household incomes of $75,000 or more reported experiencing FPD in the 30 days preceding the interview. As shown in Table 4.1, more females, Iowans 55 and over, those with lower education and those with lower household incomes reported having FPD. Frequent physical distress was especially prevalent for those Iowans with an annual household income of less than $25,000.

In response to the general mental health question: "Now thinking about your mental health, which includes stress, depression and problems with emotions, for how many days during the past 30 days was your mental health not good?", persons who reported that their mental health was not good for greater than or equal to 14 of the preceding 30 days were defined as having frequent mental distress (FMD). In 2019, 12.3% of Iowans reported experiencing FMD, which is the highest rate reported to date, and a significant increase from 2018. Similar to the prevalence trends for FPD, women, those with lower education and those with lower annual household income levels had a higher rate of FMD. Importantly, we see an opposite trend, in terms of age, between those reporting FPD and FMD. More specifically, younger people reported higher levels of FMD, but older people reported higher levels of FPD.

Table 4.2: Percentage of Self-Reported Days of Poor Physical and Mental Health in Past 30 Days, 2019

Demographic Groups	14 - 30 Days of Poor Physical Health		14 - 30 Days of Poor Mental Health	
	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)
Total	9.9	(9.3-10.6)	12.3	(11.5-13.2)
Sex				
Male	8.9	(8.0-9.9)	9.8	(8.7-10.9)
Female	10.9	(9.9-11.9)	14.8	(13.5-16.0)
Race/Ethnicity				
White/Non-Hisp.	9.9	(9.2-10.6)	11.8	(10.9-12.6)
Black/Non-Hisp	10.4	(5.7-15.2)	18.1	(11.6-24.5)
Other/Non-Hisp	10.2	(5.4-15.0)	23.0	(16.4-29.5)
Hispanic	9.9	(6.9-12.9)	9.8	(6.7-12.8)
Age Group				
18-24	4.9	(3.0-6.7)	20.5	(17.1-23.9)
25-34	6.2	(4.7-7.8)	15.4	(12.9-17.8)
35-44	8.0	(6.4-9.7)	14.0	(11.8-16.1)
45-54	10.6	(8.9-12.4)	11.2	(9.3-13.0)
55-64	14.6	(12.8-16.5)	11.4	(9.7-13.1)
65-74	13.3	(11.5-15.1)	6.8	(5.5-8.2)
75+	12.7	(10.7-14.8)	4.4	(3.1-5.7)
Education				
Less than H.S.	16.4	(12.8-20.0)	17.2	(13.4-21.1)
H.S. or G.E.D.	10.8	(9.6-12.0)	13.7	(12.1-15.2)
Some Post-H.S.	10.3	(9.1-11.5)	13.5	(12.0-15.0)
College Grad.	6.4	(5.5-7.3)	7.5	(6.4-8.6)
Household Income				
< $15,000	26.3	(21.9-30.8)	27.4	(22.6-32.1)
$15,000- 24,999	19.2	(16.4-22.0)	20.4	(17.3-23.4)
$25,000- 34,999	9.9	(7.5-12.3)	13.0	(10.0-16.1)
$35,000- 49,999	9.1	(7.2-10.9)	12.3	(9.9-14.7)
$50,000- 74,999	8.2	(6.6-9.8)	11.8	(9.7-13.8)
$75,000+	4.6	(3.8-5.4)	6.9	(5.8-8.1)

References
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2. Woo, H. & Zajacova, A. (2017). Predictive strength of self-rated health for mortality risk among older adults in the United States: does it differ by race and ethnicity? *Research on Aging, 39*(7), 879-905. doi: 10.1177/016402751663.
3. Centers for Disease Control and Prevention. (2018). Health Related Quality of Life (HRQOL). Available at https://www.cdc.gov/hrqol/index.htm.

Background

Access to comprehensive, quality health care services is important for promoting and maintaining health, preventing and managing disease, reducing unnecessary disability and premature death, and achieving health equity for all people (Office of Disease Prevention and Health Promotion, 2020). Access to health services means the timely use of personal health services to achieve the best health outcomes. Access to health care usually requires distinct steps:

- Entry into the health care system usually through insurance coverage
- Identifying a primary health care provider whom the patient trusts and can communicate effectively with on an ongoing basis
- The ability to access health care services as soon as they are needed in a viable geographic location

Access to health care impacts one's overall physical, social and mental health status as well as quality of life. Americans experience variable access to care based on race, ethnicity, socioeconomic status, age, sex, disability status, sexual orientation, gender identity, and residential location. Barriers to health services such as the high cost, lack of availability of services or culturally knowledgeable care, or inadequate/ no insurance coverage can lead to unmet health needs, financial burdens, the inability to receive preventative care, and delays in receiving the appropriate kind of care (Office of Disease Prevention and Health Promotion, 2020).

Insurance Coverage and Access to Healthcare Results

The percentage of people without health insurance coverage plummeted due to the Affordable Care Act having taken effect in 2010. For adult Iowans, in 2016, this downward trend shifted, such that there was an increasing number of people who indicated that they were not covered by any type of health insurance. This trend continues to climb upwards, such that in 2018, 7.7% of all adult Iowans reported they had no health insurance, which parallels the percentage in 2014.

Since 2016, though, an increasing number of Iowans aged 18 to 99 have indicated that they were not covered by any type of health insurance. This held true in 2019, when 7.9% of all adult Iowans reported they had no health insurance,

which is an increase from the 7.7% of Iowans between the ages of 18 and 99 with no health insurance in 2018. All remaining findings for coverage are for this age group, since almost everyone 65 years and older is covered by Medicare.

Figure 5.1: No Health Insurance Trend 2012 – 2019 Iowans Age 18-64

Year	2012	2013	2014	2015	2016	2017	2018	2019
Percent	13.4	12.7	9.6	7.8	7.8	8.6	9.4	9.6
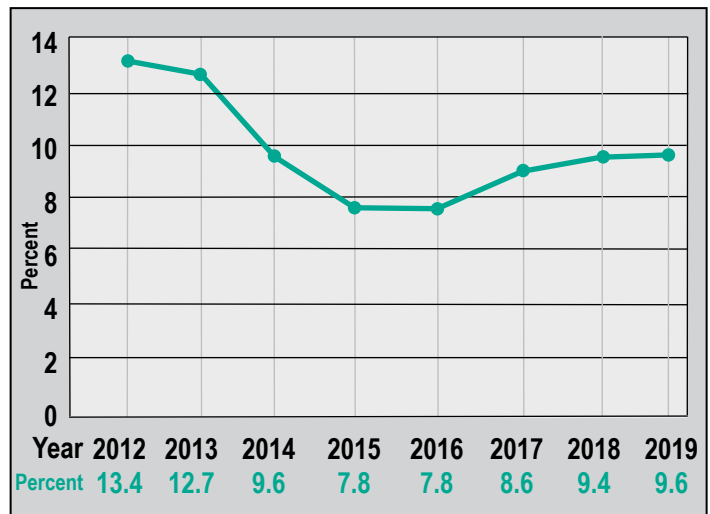
Table 5.1 shows that for people between ages 18 and 64 years old, those without health care coverage tended to be male, young, less educated and have household incomes of less than $75,000 per year. Additionally, Hispanic Iowans lacked health care coverage at the highest rate compared to those who were White/Non-Hispanic, Black/Non-Hispanic, and Other/ Non-Hispanic (40.4%). The prevalence rate of uninsured Hispanic Iowans between the ages of 18 and 64 has continued to rise. More Hispanic Iowans are uninsured than any other racial or ethnic group in Iowa with 2 out of every 5 Hispanic Iowans between the ages of 18 and 64 not having health insurance. People with less than a high school education and those who were Hispanic had the highest percentages of individuals without health care coverage (36.2% and 40.4% respectively). College graduates had 2.8% with no coverage which was a lower rate than any other education level, followed closely by those Iowans with an annual household income level of $75,000 or more (3.2%; see Table 5.1).

Table 5.1: Percentage of Uninsured Iowans Age 18-64, 2019

Demographic Groups	Prevalence Rate (%)	C.I. (95%)
Total	9.6	(8.7-10.5)
Sex		
Male	11.4	(10.1-12.8)
Female	7.7	(6.6-8.8)
Race/Ethnicity		
White/Non-Hispanic	7.1	(6.2-7.9)
Black/Non-Hispanic	12.6	(6.7-18.4)
Other/Non-Hispanic	9.2	(4.5-14.0)
Hispanic	40.4	(35.1-45.6)
Age Group		
18-24	11.0	(8.6-13.5)
25-34	11.6	(9.5-13.7)
35-44	11.9	(9.9-14.0)
45-54	7.6	(6.0-9.2)
55-64	6.1	(4.8-7.5)
Education		
Less Than H.S.	36.2	(30.6-41.8)
H.S. or G.E.D.	11.6	(9.9-13.3)
Some Post-H.S.	6.7	(5.6-7.9)
College Graduate	2.8	(2.0-3.5)
Household Income		
Less than $15,000	15.5	(11.1-20.0)
$15,000- 24,999	20.7	(16.9-24.4)
$25,000- 34,999	14.7	(11.2-18.3)
$35,000- 49,999	10.8	(8.2-13.3)
$50,000- 74,999	7.0	(5.2-8.9)
$75,000+	3.2	(2.3-4.2)

Two other demographic variables that had an impact on health care coverage for those under the age of 65 were employment status and marital status. In 2019, 16.8% of those not covered by health insurance were unemployed (an increase from 2018), while 8.0% were employed or self-employed (a decrease from 2018). Unemployed excludes people who are retired or unable to work. People who were married tended to be covered by health insurance compared to those who were unmarried, such that 12.5% percent of unmarried respondents lacked health insurance, while only 7.0% of married respondents lacked coverage. These figures have remained relatively stable since 2018.

When asked if there was a time in the past 12 months when they needed to see a doctor but could not because of the cost, 8.5% of all adult Iowans said that there was (see Table 5.2). The percentage was higher for younger people, people with less education, people with lower incomes and racial and ethnic minorities. The lowest percentages were found in people with annual household incomes of $75,000 or more, people age 65 and over. These had around 4% not covered. The highest percentages were found in Hispanic adult Iowans with 19.2% not seeking care due to the cost. Iowans who have earned less than a high school diploma are at disproportionately higher rates of not seeking medical care due to the cost than those with higher levels of education. Similarly, those who have an annual household income of $75,000 or more have the lowest rates of not seeking medical care due to the cost.

FACT

The percentage of uninsured Iowans age 18 to 64 has continued to increase since 2016.

Table 5.2: Percentage of Responses to Health Care Access Related Questions in Iowa, 2019

Demographic Groups	Time Couldn't Afford Care		Have One Person as Health Provider		Had Checkup in Past Year	
	%	C.I. (95%)	%	C.I. (95%)	%	C.I. (95%)
Total	8.5	(7.8-9.2)	76.8	(75.8-77.8)	78.6	(77.6-79.6)
Sex						
Male	8.8	(7.8-9.8)	69.7	(68.2-71.3)	73.1	(71.6-74.6)
Female	8.2	(7.3-9.1)	83.6	(82.4-84.9)	84.0	(82.7-85.2)
Race/Ethnicity						
White/Non-Hispanic	7.5	(6.8-8.2)	79.3	(78.2-80.3)	79.2	(78.2-80.2)
Black/Non-Hispanic	9.9	(4.7-15.0)	69.0	(61.5-76.4)	86.3	(81.1-91.6)
Other/Non-Hispanic	14.2	(8.5-19.9)	63.1	(55.6-70.5)	73.9	(67.1-80.6)
Hispanic	19.2	(15.2-23.2)	53.5	(48.4-58.6)	68.5	(63.7-73.2)
Age Group						
18-24	8.9	(6.6-11.3)	67.3	(63.6-71.1)	74.6	(71.2-78.0)
25-34	11.7	(9.6-13.8)	63.2	(60.1-66.4)	65.8	(62.7-68.8)
35-44	10.5	(8.6-12.4)	74.3	(71.6-77.1)	70.7	(67.9-73.5)
45-54	9.4	(7.7-11.0)	79.0	(76.6-81.4)	78.2	(75.8-80.6)
55-64	8.9	(7.4-10.4)	82.7	(80.7-84.6)	83.6	(81.7-85.5)
65+	4.1	(3.0-5.3)	87.7	(86.4-89.1)	91.9	(90.7-93.1)
Education						
Less Than H.S.	15.9	(12.2-19.6)	63.7	(59.0-68.5)	76.0	(71.7-80.2)
H.S. or G.E.D.	9.3	(8.0-10.6)	75.8	(73.9-77.6)	79.3	(77.5-81.0)
Some Post-H.S.	8.6	(7.4-9.7)	77.1	(75.3-78.9)	77.7	(75.9-79.4)
College Graduate	4.9	(4.1-5.8)	82.0	(80.5-83.6)	80.1	(78.4-81.8)
Household Income						
Less than $15,000	12.5	(9.1-15.8)	73.0	(68.3-77.7)	78.4	(74.0-82.8)
$15,000- 24,999	15.8	(13.0-18.5)	73.1	(69.9-76.3)	82.8	(80.1-85.5)
$25,000- 34,999	13.1	(10.1-16.0)	73.5	(69.8-77.2)	76.4	(72.9-80.0)
$35,000- 49,999	11.3	(9.1-13.4)	74.5	(71.4-77.5)	73.7	(70.5-76.8)
$50,000- 74,999	7.0	(5.5-8.6)	78.9	(76.4-81.4)	75.6	(73.0-78.2)
$75,000+	4.0	(3.1-4.9)	81.3	(79.6-83.0)	79.3	(77.6-81.1)

FACT

Over 3 out of 4 adult Iowans had one regular health care provider in 2019.

Since it is important that care be coordinated, respondents were asked if they had one person they thought of as their personal doctor or health care provider. A positive reply was given by 76.8% of adult Iowans, which continues the increasing trend since 2017. Women, Non-Hispanic Whites, older people, people with more education and people with higher household incomes reported having one regular provider. Hispanics had the lowest rates of having one regular provider (53.5%), while those age 65 years old and older had the highest rate (87.7%).

When asked how long it had been since their last regular checkup, 78.6% reported that it had been within the past year which is the highest percentage reported. On the other end, 0.5% of adult Iowans indicated that they had never had a checkup, which is a decrease from 2017, but a slight increase from what was reported in 2018 (0.4%). More females than males had a checkup within the past year. Iowans who were 65 years old or older had the highest rates of having a recent checkup (91.9%), while those aged 25-34 had the lowest rate of having a checkup within the past year (65.8%).

Comparison with Other States
In the 50 states and District of Columbia, the percentage of non-elderly people without health insurance ranged from 7.1% to 28.4%. Iowa remains one of the states with the lowest rates of uninsured adults age 18-64 at 9.6%. There are only four states that have lower rates of uninsured adults aged 18-64: North Dakota, Vermont, Massachusetts and Washington D.C. The median for states and the District of Columbia was 13.6% which is the highest since 2014 and continues the upward trend in uninsured adults under the age of 65 since 2016.

The median rate for not being able to see a doctor due to cost in the 50 states and the District of Columbia was 12.4%. Iowa's rate of 8.5% is lower than the median, and is the second lowest rate in the United States and the District of Columbia. Hawaii had the lowest rate in 2019, with 8.2% needing to see a doctor but were unable due to cost.

Notably, western-most states had the lowest rates of having a recent checkup (within the past year). Iowa's rate of 78.6% having seen a provider for a checkup in the past year was slightly above the median of 77.6% for the 50 states and the District of Columbia. There were 0.5% of adult Iowans who had never visited a doctor for a routine checkup in 2019. Iowa's rate is better than the median percentage of 0.7%.

Health Objectives for Iowa and the Nation
The Healthy People 2020 and Healthy Iowans goals for health insurance coverage are to see increases in the proportion of people who are covered by health insurance so that all people will be covered by some form of health insurance. In Iowa, only 90.4% of non-elderly adults reported coverage in 2019. For all adults the figure was 92.1%. These percentages continue a trend in the opposite direction than the proposed goals and ultimately fall short.

There are separate goals for people age 18 to 64 and people 65 and over in terms of having a specific source of ongoing care. The goal for age 18 to 64 is 89.4%, while the goal for age 65 and over is 100%. The percentage of Iowans indicating they had one person as a health provider was 73.5% (18-64 year olds) and 87.7% (65 years and older), thus, neither goal have been met. The Healthy Iowans goal for all adults was 82%. The obtained prevalence continues to increase, but still falls short at 76.8%.

Healthy Iowans also has a goal of decreasing the percentage of adults who are not able to see a doctor because of the cost to 7.0%. With 8.5% of adult Iowans indicating they could not afford to see a doctor due to the cost, the state has not made progress since 2018 in reaching the goal. Healthy Iowans also has a goal of increasing the percentage of adults who have had a routine check-up in the past year to 76%. Iowa continues to meet this goal with 78.6% of adults having one in the past year.

References
1. Office of Disease Prevention and Health Promotion. (2020). HealthyPeople.gov: 2020 Topics & Objectives: Access to Health Services. Available at https://www.healthypeople.gov/2020/topics-objectives/topic/Access-to-Health-Services.

FACT

Iowa is the 5th leading state for the percentage of insured adults but is moving in the opposite direction of state and national goals.

Background

Blood pressure is the force of blood against the walls of arteries. If this pressure rises and stays high over time, it can damage the body in many ways. High blood pressure (HBP), also known as hypertension, is a serious condition that can lead to coronary heart disease, heart failure, stroke, kidney failure and other health problems if not controlled or lowered (Centers for Disease Control and Prevention, 2020; National Heart, Lung, and Blood Institute, 2020).

Blood pressure is typically recorded as two numbers – the systolic pressure (as the heart beats) over the diastolic pressure (as the heart relaxes between beats). High blood pressure is defined as a consistent reading of systolic blood pressure at or above 130 mm Hg or diastolic blood pressure at or above 80 mm Hg. Those with systolic blood pressure of 120-129 mm Hg or diastolic blood pressure of less than 80 mm Hg are now classified as pre-hypertensive, requiring health-promoting lifestyle modifications to prevent cardiovascular disease (Centers for Disease Control and Prevention, 2020).

High blood pressure, which often has no symptoms, is a major risk factor for heart disease and stroke. Almost 500,000 deaths in the United States are linked to HBP as either a primary or a contributing cause (Centers for Disease Control and Prevention, 2020). Epidemiological data suggest that if we could lower the average systolic blood pressure among Americans by 5 mm Hg, we'd see a 14.0% decrease in deaths from stroke, a 9.0% drop in heart disease deaths, and a 7.0% drop in overall mortality. A reduction as small as 2 mm Hg in the average American's systolic blood pressure could save more than 70,000 lives per year (Havas, Roccella, & Lenfant, 2004).

People who have high blood pressure can take steps to control it and reduce their risks for related health problems. The population-based lifestyle intervention recommendations are weight loss, dietary sodium restrictions, increased physical activity, smoking cessation, moderation of alcohol consumption, adequate good quality sleep, stress management, and a heart-healthy diet rich in fiber, with increased potassium from fruit and vegetables and low in saturated and total fat (National Heart, Lung, and Blood Institute, 2020). Other key steps include taking medication, and following the treatment plan that your doctor may prescribe.

Hypertension Awareness Results

In 2019, 31.8%, or approximately 773,938, of adult Iowans reported ever being told they had high blood pressure. An additional 0.9% (21,060 adult Iowans) reported being told they had borderline or pre-hypertension.

The prevalence of reporting a high blood pressure diagnosis was greater for males, adult Iowans with lower levels of education and with lower levels of household income. Non-Hispanic Blacks and Non-Hispanic Whites experienced higher rates of high blood pressure than adult Iowans of Other/Non-Hispanic or Hispanic race and ethnicity (see Table 6.1). Rates for the former two race/ethnicity groups were well above 30.0%, while rates for the latter two were well under 30.0%.

Age had the greatest impact on the percentage of respondents reporting high blood pressure. The highest percentage was 61.8% among respondents age 75 years and older, while the lowest was among those age 18 to 24 (8.4%; see Figure 6.1). This being said, the prevalence rate for those aged 18 to 24 has doubled since 2015, when 4.2% had experienced high blood pressure.

Figure 6.1: Iowans Ever Told Blood Pressure is High by Age, 2019

Ages	18-24	25-34	35-44	45-54	55-64	65-74	75+
Percent	8.4	11.7	20.7	30.0	45.9	55.3	61.8
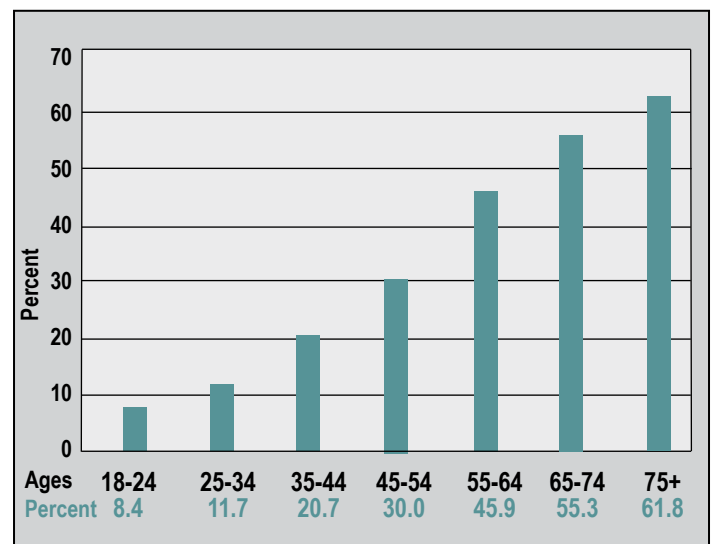
FACT

The prevalence rate for high blood pressure in 18-24 year olds has doubled since 2015.

Of those reporting high blood pressure, 78.0% reported taking medication for their condition. As with high blood pressure, this percentage increases steadily with age reaching a high of 94.3% for those 75 years old and over. Although males reported being told they had high blood pressure at a higher rate than females, females reported higher rates of taking blood pressure medicine than males (82.8% vs. 73.7%). Education and income showed no systematic relation to use of blood pressure medication.

Comparison with Other States

Among all the states and the District of Columbia prevalence of reported hypertension ranged from 25.8% to 43.8%. The prevalence for Iowa of 31.8% was slightly better than the median of 32.3%.

Health Objectives for Iowa and the Nation

According to Healthy People 2020 objectives, the target for high blood pressure is that only 26.9% of the adult population should report having high blood pressure. Iowa fails to meet this goal, as of 2019. Another Healthy People 2020 goal is for 77.4% of people with high blood pressure to be taking medication to lower it. The Healthy Iowans goal for this is a rate of 75%. Iowa's figure was 78.0%. Iowa meets the Healthy People 2020 goal and the Healthy Iowans goal for taking blood pressure medication to manage high blood pressure.

References
1. Centers for Disease Control and Prevention. (2020). High Blood Pressure Symptoms and Causes. Available at https://www.cdc.gov/bloodpressure/about.htm.
2. National Heart, Lung, and Blood Institute. (2020). High Blood Pressure. Available at https://www.nhlbi.nih.gov/health-topics/high-blood-pressure.
3. Havas, S., Roccella, E. J., & Lenfant, C. (2004). Reducing the public health burden from elevated blood pressure levels in the United States by lowering intake of dietary sodium. *American Journal of Public Health, 94*(1). doi: 10.2105/ajph.94.1.19
4. Centers for Disease Control and Prevention. (2020). Cost-Effectiveness of High Blood Pressure Interventions. Available at https://www.cdc.gov/chronicdisease/programs-impact/pop/high-blood-pressure.htm.

Table 6.1: Percentage of Iowans Told Blood Pressure Is High, 2019

Demographic Groups	Prevalence Rate (%)	C.I. (95%)
Total	31.8	(30.8-32.9)
Sex		
Male	34.0	(32.5-35.6)
Female	29.7	(28.3-31.1)
Race/Ethnicity		
White/Non-Hispanic	33.0	(32.0-34.1)
Black/Non-Hispanic	37.9	(30.2-45.6)
Other/Non-Hispanic	20.7	(14.8-26.5)
Hispanic	17.3	(13.7-21.0)
Age Group		
18-24	8.4	(6.1-10.7)
25-34	11.7	(9.6-13.7)
35-44	20.7	(18.3-23.2)
45-54	30.0	(27.3-32.7)
55-64	45.9	(43.4-48.4)
65-74	55.3	(52.8-57.9)
75+	61.8	(58.8-64.9)
Education		
Less than H.S.	34.0	(29.5-38.5)
H.S. or G.E.D.	37.6	(35.7-39.5)
Some Post-H.S.	30.4	(28.6-32.1)
College Graduate	26.3	(24.6-27.9)
Household Income		
Less than $15,000	37.5	(32.7-42.3)
$15,000- 24,999	40.2	(36.9-43.6)
$25,000- 34,999	33.5	(29.8-37.2)
$35,000- 49,999	34.6	(31.5-37.6)
$50,000- 74,999	30.4	(27.9-33.0)
$75,000	34.1	(31.4-36.8)

Cholesterol Awareness

Background

High blood cholesterol is one of the major risk factors for heart disease. The higher your blood cholesterol level, the greater your risk is for developing heart disease or having a heart attack.

Cholesterol is a waxy, fat-like substance that is found in all cells of the body. Cholesterol travels through your blood within small packages called lipoproteins. When there is too much cholesterol, it builds up in the walls of your arteries. Over time, this buildup causes "hardening of the arteries" so that arteries become narrowed and blood flow to the heart is slowed down or blocked. The blood carries oxygen to the heart, and if enough blood and oxygen cannot reach your heart, you may suffer chest pain. If the blood supply to a portion of the heart is completely cut off by a blockage, the result is a heart attack (National Heart, Lung, and Blood Institute, 2021).

High blood cholesterol itself does not cause symptoms; so many people are unaware that their cholesterol level is too high. It is important to find out what your cholesterol numbers are because lowering cholesterol levels that are too high lessens the risk for developing heart disease and reduces the chance of a heart attack or dying of heart disease, even if you already have it.

Lowering cholesterol is important for everyone: younger, middle-aged, and older adults; women and men; and people with or without heart disease. Everyone aged 20 and older should have their cholesterol measured at least once every 5 years.

High cholesterol means a total cholesterol level greater than or equal to 200 milligrams per deciliter (mg/dl). Not all cholesterol increases the risk of heart disease. The cholesterol carried by low-density lipoproteins (LDL), "bad cholesterol", increases the risk; levels of LDL should be less than 100 mg/dl. The cholesterol carried by high-density lipoproteins (HDL), "good cholesterol", lowers the risk and is beneficial; levels of HDL are recommended to be greater than or equal to 60 mg/dl. Cholesterol standards are more stringent for those people at high risk of heart attack due to other factors such as diabetes or coronary heart disease (Centers for Disease Control and Prevention, 2020).

The main goal of cholesterol-lowering prevention and treatment is to lower your LDL (bad) cholesterol level enough to reduce your risk of developing heart disease or having a heart attack. Methods include:

- DASH Eating Plan: a flexible and balanced eating plan that creates a heart-healthy eating style for life that recommends eating vegetables, fruits, and whole grains, including fat-free or low-fat dairy products, fish, poultry, nuts, beans, and vegetable oils, limiting food foods that are high in saturated fats and limiting sugar-sweetened beverages and sweets (National Heart, Lung, and Blood Institute, 2021).
- Maintaining a healthy weight
- Getting regular physical activity
- Smoking cessation
- Limiting the consumption of alcohol
- Checking your cholesterol regularly
- Medication: if cholesterol-lowering medicines are needed, they should be used as directed along with healthy lifestyle changes (Centers for Disease Control and Prevention, 2017)

Cholesterol Awareness Results

In 2019, when asked whether they had their blood cholesterol checked during the past five years, 85.8% of respondents reported having done so. Women, respondents in older age groups, people with more education and higher household income had higher prevalence rates of having a blood cholesterol test within the last five years. White Non-Hispanics had higher rates of having their blood cholesterol checked in the last five years than Hispanics or those of Other Non-Hispanic race/ethnicity, while Non-Hispanic Blacks had a higher rate of having a blood cholesterol test in the past five years than those of Other Non-Hispanic race/ethnicity (see Table 7.1).

Of the respondents who had their cholesterol tested in the past five years, 33.4% reported that they had ever been told by a doctor or other health professional that their blood cholesterol was high. Non-Hispanic Whites had the highest rate (34.7%) compared to other racial/ethnic groups. Adult Iowans who were college graduates reported high cholesterol at a lower rate than those with a high school diploma/G.E.D. or some post high school education. A similar trend was seen with household income as well, with

Table 7.1: Blood Cholesterol in Iowans, 2019

Demographic Groups	Had Blood Cholesterol Checked in Past Five Years		Ever Been Told Blood Cholesterol High	
	%	C.I. (95%)	%	C.I. (95%)
Total	85.8	(84.8-86.7)	33.4	(32.2-34.5)
Sex				
Male	83.7	(82.3-85.1)	34.4	(32.7-36.1)
Female	87.8	(86.5-89.1)	32.4	(30.9-33.9)
Race/Ethnicity				
White/Non-Hisp.	86.8	(85.8-87.7)	34.7	(33.5-35.9)
Black/Non-Hisp.	87.6	(81.5-93.7)	24.5	(16.6-32.3)
Other/Non-Hisp.	71.6	(63.8-79.3)	18.3	(11.9-24.7)
Hispanic	77.1	(72.5-81.6)	26.0	(20.8-31.3)
Age Group				
18-24	59.8	(55.1-64.4)	6.0	(3.1-8.8)
25-34	73.4	(70.2-76.6)	11.0	(8.5-13.5)
35-44	83.7	(81.3-86.1)	20.9	(18.2-23.7)
45-54	90.2	(88.4-91.9)	33.6	(30.7-36.5)
55-64	93.9	(92.6-95.2)	44.2	(41.7-46.8)
65-74	96.2	(95.0-97.4)	51.0	(48.4-53.7)
75+	97.3	(96.3-98.4)	49.1	(45.9-52.4)
Education				
Less than H.S.	77.6	(73.0-82.2)	35.2	(30.0-40.5)
H.S. or G.E.D.	83.8	(82.0-85.6)	36.7	(34.6-38.8)
Some Post-H.S.	85.1	(83.4-86.8)	33.5	(31.4-35.5)
College Graduate	91.3	(90.1-92.5)	29.4	(27.5-31.2)
Household Income				
Less than $15,000	76.5	(71.5-81.5)	38.9	(33.3-44.6)
$15,000- 24,999	82.7	(79.6-85.8)	39.1	(35.4-42.8)
$25,000- 34,999	83.3	(79.9-86.8)	33.0	(28.8-37.1)
$35,000- 49,999	83.8	(81.1-86.6)	33.6	(30.3-37.0)
$50,000- 74,999	86.3	(84.1-88.6)	35.8	(32.9-38.7)
$75,000+	89.8	(88.3-91.3)	29.2	(27.4-31.1)

those earning a higher income reporting high cholesterol at lower rates. For example, 38.9% of adult Iowans earning less than $15,000 per year reported high cholesterol, while only 29.2% of adult Iowans earning $75,000 or more reported high cholesterol. Age made a considerable difference in reporting high cholesterol. Among 18 to 24 year olds, 6.0% reported high cholesterol, while 51.0% percent of those age 65 to 74 reported high cholesterol (see Table 7.1).

Comparison with Other States
The percentage of people having their cholesterol checked within the past five years among all the states and the District of Columbia ranged from 79.3% to 92.2%. Iowa's value of 85.8% was below the national median of 86.6%.

Of those tested across the United States, the range being told their cholesterol was high was from 28.1% to 39.5%. Iowa's value of 33.4% was slightly higher than the national median of 33.1%.

Health Objectives for the Nation
Based on the national health objectives, by the year 2020, 82.1% of adults should have their blood cholesterol checked within the past five years. In 2019, 85.8% of Iowans age 18 and older had their blood cholesterol checked within the past five years, which meets and exceeds this goal. High cholesterol should be experienced by only 13.5% of all people over age 20 according to the Healthy People 2020 goals. Iowa is nowhere near meeting this goal, with the rate more than doubling that amount at 30.9% of Iowans aged 20 years and older reporting high cholesterol.

References
1. National Heart, Lung, and Blood Institute. (2021). Blood Cholesterol. Available at https://www.nhlbi.nih.gov/health-topics/blood-cholesterol.
2. Centers for Disease Control and Prevention. (2020). Getting Your Cholesterol Checked. Available at https://www.cdc.gov/cholesterol/cholesterol_screening.htm.
3. National Heart, Lung, and Blood Institute. (2021). DASH Eating Plan. Available at https://www.nhlbi.nih.gov/health-topics/dash-eating-plan.
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Background

Overweight and obesity status reflect both individual and society-level aspects that consist of inherited, environmental, cultural and socioeconomic factors. Contributing individual factors include behavior and genetics, as well as dietary patterns, physical activity and inactivity, medication use and other exposures. Community level factors such as food and physical activity environment; education and skills; and food marketing and promotion play an important role in overweight and obesity prevalence rates (Centers for Disease Control and Prevention, 2020).

Obesity is a serious public health concern, and compared to those with a normal or healthy weight, those with obesity are at a higher risk for many diseases and health conditions, as well as premature death. The physical conditions include but are not limited to: high blood pressure, type 2 diabetes, coronary heart disease, stroke, sleep apnea and breathing problems, some cancers and gallbladder disease. Those who are obese are also at an increased risk of reporting a low quality of life and mental illnesses such as depression and anxiety (Centers for Disease Prevention and Control, 2020).

Strategies to combat obesity would seek to advance policies that:
- Increase the availability of affordable healthy foods in all communities;
- Increase the frequency, intensity and duration of physical activity;
- Improve access to safe and healthy places to live, work, learn and play;
- Limit screen time;
- Decrease stress; and
- Encourage employers to provide workplace wellness programs.

Overweight and obesity status are often estimated from weight standards that are adjusted for body height. Body mass index (BMI) is the most frequently used measure to determine the appropriateness of weight for a person's height. BMI is defined as a person's body weight in kilograms divided by their height in meters squared [weight (kg)/height (m2)] (Centers for Disease Control and Prevention, 2020). Estimations of the prevalence of overweight and obesity in this report are based on BMI determined from self-reported weight and height. In adults,

overweight is considered to be a BMI value greater than or equal to 25 and less than 30, while obesity is considered to be a BMI greater than or equal to 30. This self-reported method is likely to result in an underestimation of the actual extent of obesity. However, comparisons among demographic groups, states, and years are likely to be valid. Furthermore, this is the only measure of overweight and obesity available at the state level.

Overweight and Obesity Results

In 2019, 34.4% of non-pregnant adult Iowans were overweight and 33.9% were obese, based on BMI. The combined percentage of individuals who were overweight or obese was 68.3%, which continues the downward trend for the combined percentage since 2017. This combined downward trend is likely due to the rate of overweight status decreasing and the rate of obesity increasing. Since 2017, the percentage of overweight adult Iowans has increased, while the percentage of obese Iowans has decreased (see Figure 8.1).

Figure 8.1: Overweight and Obesity by Year, 2013 – 2019

	2013	2014	2015	2016	2017	2018	2019
Overweight	34.3	36.0	34.5	36.7	33.7	34.1	34.4
Obesity	31.3	30.9	32.1	32.0	36.4	35.3	33.9
Combined	67.0	66.9	66.6	68.7	70.1	69.4	68.3
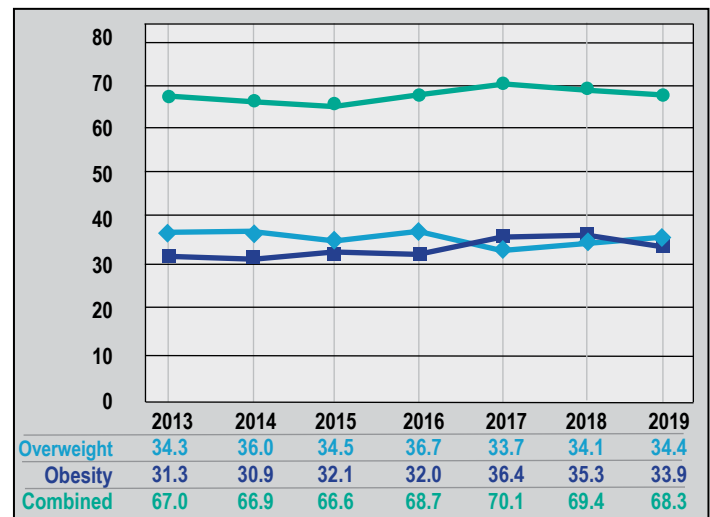
Compared to 2017 and 2018, trends in obesity are similar in each age category except for those aged 35-44. In 2017 and 2018, slightly more females than males were obese in this age group, while in 2019, the prevalence rate for males surpassed that of females. In 2019, males had higher rates of obesity than females after age 35. From the age of 35, males had higher rates of obesity than females, with the biggest difference being in individuals aged 45-54 even more so than what was reported in 2018 for those aged 75 and older (see Figure 8.2).

Figure 8.2: Obesity by Age and Sex, 2019

Ages	18-24	25-34	35-44	45-54	55-64	65-74	75+
Male	15.7	28.6	39.5	47.2	42.8	39.1	30.3
Female	19.9	35.4	38.3	35.6	39.1	38.2	23.7
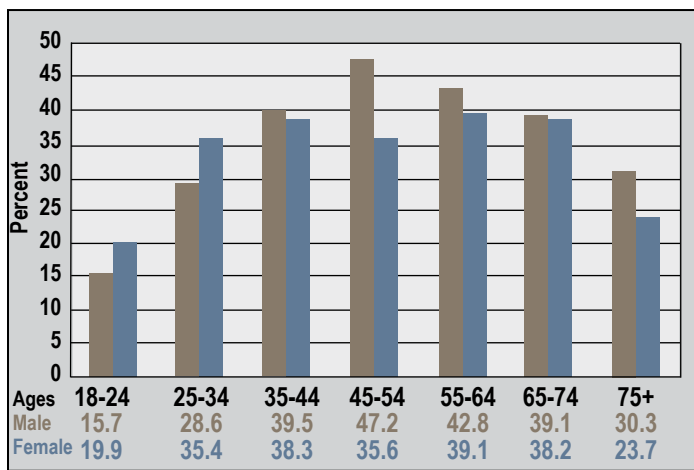
Although rates of overweight and obese Iowans differed slightly in 2019 compared to 2018, there were no statistically significant differences, meaning that rates stayed relatively stable in each demographic group analyzed between 2018 and 2019. Prevalence of overweight increases steadily with age, while a decline in obesity is seen after age 55 with the most pronounced decline seen after age 75. The effects of education and income are different for overweight and obesity as well. Education seemed to have little systematic effect on overweight rates. If anything, those with some post-secondary education tended to have a higher prevalence of being overweight than those with a high school diploma or G.E.D. The percentage of overweight tended to be lowest for those who reported lower incomes while a different trend was observed for obesity in Iowa. The highest rates of obesity occurred for adults in middle adulthood (ages 45-54; 41.6%), followed by those with a household income of $15,000 to $24,999 With certainty, obesity prevalence was lowest in those aged 18 to 24 years old at 17.7%. The prevalence rate increases significantly from age 18 to age 44. For example, there are significant consecutive increases in obesity rates for 18-24 year olds (17.7%), 25-34 year olds (31.7%), and 35-44 year olds (38.9%).

Table 8.1: Overweight and Obesity Based on BMI, 2019

Demographic Groups	Overweight		Obese	
	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)
Total	34.4	(33.2-35.5)	33.9	(32.8-35.1)
Sex				
Male	38.6	(37.0-40.3)	35.2	(33.6-36.8)
Female	29.8	(28.3-31.4)	32.6	(31.0-34.2)
Race/Ethnicity				
White/Non-Hisp.	34.4	(33.2-35.5)	34.2	(33.0-35.4)
Black/Non-Hisp.	34.8	(26.4-43.3)	41.1	(32.5-49.6)
Other/Non-Hisp.	29.5	(22.3-36.7)	21.4	(15.3-27.6)
Hispanic	36.7	(31.1-42.3)	35.7	(30.2-41.2)
Age Group				
18 - 24	25.0	(21.4-28.5)	17.7	(14.5-20.8)
25 - 34	34.6	(31.3-37.8)	31.7	(28.6-34.9)
35 - 44	36.3	(33.2-39.3)	38.9	(35.9-42.0)
45 - 54	35.4	(32.5-38.3)	41.6	(38.7-44.6)
55 - 64	35.6	(33.1-38.1)	39.1	(36.5-41.6)
65-74	36.5	(33.9-39.1)	38.4	(35.3-41.5)
75+	38.4	(35.3-41.5)	26.4	(23.6-29.3)
Education				
Less than H.S.	31.1	(26.2-36.0)	35.9	(30.9-40.9)
H.S. or G.E.D.	32.7	(30.7-34.7)	35.4	(33.3-37.4)
Some Post-H.S.	34.7	(32.7-36.7)	35.3	(33.3-37.3)
College Grad.	36.7	(34.7-38.7)	30.0	(28.2-31.9)
Household Income				
Less than $15,000	24.9	(20.5-29.3)	36.1	(31.1-41.0)
$15,000- 24,999	29.6	(26.3-32.9)	40.9	(37.3-44.5)
$25,000- 34,999	30.8	(27.0-34.7)	36.1	(32.1-40.1)
$35,000- 49,999	32.9	(29.7-36.1)	36.2	(32.9-39.4)
$50,000- 74,999	36.8	(34.0-39.7)	34.7	(32.0-37.5)
$75,000+	39.0	(36.9-41.0)	31.8	(29.9-33.7)

Comparison to other states

In 2019, Iowa's rate of overweight individuals was 34.4%. The range of prevalence rates in the 50 states and the District of Columbia was 31.9% to 37.9%. The national median was 34.4%, which is the same reported prevalence rate in Iowa. In 2019, the prevalence of obesity across the 50 states and the District of Columbia ranged from 23.8% to 40.8%. Iowa's rate of 33.9% is above the national median of 32.1%.

Health Objectives for Iowa and the nation

The national Healthy People 2020 objectives call for increasing the prevalence of healthy weight (neither over-weight nor obese) to 33.9% among adults age 20 years and older. Iowa is below this target having 28.5% of its adult population at healthy weight, which continues the trend in the opposite direction of the goal. The Healthy People 2020 goal for obesity in those aged 20 years and older is 30.6%. With an adult obesity prevalence of 35.1% in that age group, Iowa fails to achieve that goal as well.

In 2012, all states had an obesity prevalence rate lower than **35%**. In 2019, 12 states reported over **35%** obese, but Iowa was not one of these.

References
1. Centers for Disease Control and Prevention. (2020). Adult Overweight and Obesity: Adult Obesity Causes and Consequences. Available at https://www.cdc.gov/obesity/adult/causes.html.
2. Centers for Disease Control and Prevention. (2020). Adult Overweight and Obesity: Defining Adult Obesity. Available at https://www.cdc.gov/obesity/adult/defining.html.

Background

Diabetes mellitus is a long-lasting health condition that essentially affects how the body turns food into energy (Centers for Disease Control and Prevention, 2020). People who have type 1 diabetes are not able to produce insulin. Type 2 diabetes is most common (90% - 95% of all diagnosed cases) and is a condition that occurs when your body does not use insulin properly resulting in insulin resistance (American Diabetes Association, 2021; Centers for Disease Control and Prevention, 2020).

Diabetes is the 7th leading cause of death in the United States. In the last 2 decades, as the population has aged and become more overweight or obese, the number of U.S. adults diagnosed with diabetes has more than doubled (Centers for Disease Control and Prevention, 2020). Currently, 34.2 million U.S. adults have diabetes and over 88 million have pre-diabetes. The majority of those who have prediabetes likely are unaware of their condition, and in many cases, pre-diabetes develops into full diabetes.

Notably, research studies have found that positive lifestyle changes can prevent or delay the onset of type 2 diabetes among high-risk adults. Lifestyle interventions including diet modification, weight loss and regular physical activity, such as walking for 150 minutes each week, are recommended to delay diabetes onset in high-risk populations.

The complications of diabetes are many and severe. The complications of diabetes are many and severe. These can include heart disease, stroke, high blood pressure, kidney disease, blindness, diseases of the nervous system diseases of the mouth, complications during pregnancy, lower-limb amputations and lower resistance to other diseases. However, complications can be minimized when

diabetes is diagnosed early and patients are taught to self-manage their disease through blood glucose control, weight control, taking medications appropriately, decreasing unhealthy behaviors such as smoking and implementing healthy lifestyle interventions (Centers for Disease Control and Prevention, 2020).

The state of Iowa is part of a national effort for health promotion and chronic disease prevention and management. In terms of diabetes prevention and control, the Iowa Department of Public Health collaborates with private and public agencies throughout Iowa to train health care providers on diabetes prevention and control through promotion and education. Through the Health Promotion and Chronic Disease Control Partnership, i.e. the Partnership, the IDPH provides educational materials for communities, health care providers, as well as certified outpatient diabetes education programs. Among other efforts, the IDPH is involved in certifying community-based outpatient diabetes education programs, maintaining involvement with diabetes care providers and educators across the state, and monitoring, evaluating and reporting diabetes-related data (Iowa Department of Public Health, 2021).

Diabetes Results

In 2019, 10.3% of Iowans had ever been told by a physician that they have diabetes, excluding women told only during pregnancy. This extends the increasing trend of Iowans having diabetes, and continues to be the highest percentage over the last 7 years (see Figure 9.1).

Diabetes may affect persons of all ages, although prevalence increases with age. Table 9.1 below shows that the rate of diabetes is much higher for Iowans who are older, less educated and have a lower household income. In 2019, the demographic group with the highest percentage of diagnosed diabetics was those over 75 years of age, at 20.9%, followed closely by those 65-74 years of age (20.4%). This continues the downward trend of 75+ year olds ever having been diagnosed with diabetes, as the figure has decreased from the 22.6% reported in 2017. In 2019, 18-24 year olds had the lowest diabetes prevalence at 1.5%, which was different from 2018 when 25-34 year olds reported the lowest prevalence rate (1.7%).

Table 9.1: Iowans Ever Told They Had Diabetes, 2019

Demographic Groups	Prevalence Rate	C.I. (95%)
Total	10.3	(9.6-10.9)
Sex		
Male	11.1	(10.1-12.0)
Female	9.5	(8.6-10.3)
Race/Ethnicity		
White/Non-Hispanic	10.4	(9.8-11.1)
Black/Non-Hispanic	15.2	(9.6-20.8)
Other/Non-Hispanic	8.1	(4.4-11.8)
Hispanic	6.3	(4.1-8.6)
Age Group		
18-24	1.5	(0.4-2.5)
25-34	2.7	(1.5-3.8)
35-44	4.3	(3.1-5.6)
45-54	10.0	(8.2-11.7)
55-64	16.4	(14.5-18.2)
65-74	20.4	(18.3-22.4)
75+	20.9	(18.4-23.4)
Education		
Less Than H.S.	13.1	(10.1-16.0)
H.S. or G.E.D.	12.8	(11.6-14.1)
Some Post-H.S.	10.4	(9.2-11.5)
College Graduate	6.2	(5.4-7.1)
Household Income		
Less than $15,000	18.7	(15.0-22.4)
$15,000- 24,999	17.2	(14.8-19.7)
$25,000- 34,999	13.8	(11.1-16.4)
$35,000- 49,999	11.0	(9.1-12.9)
$50,000- 74,999	9.3	(7.8-10.9)
$75,000+	5.5	(4.6-6.3)
Age diabetes diagnosed		
1-15 years old	3.6	(2.2-5.1)
16-30 years old	9.9	(7.6-12.2)
31-45 years old	26.4	(23.4-29.5)
46-60 years old	39.4	(36.1-42.6)
61+ years old	20.6	(18.1-23.2)

> **Race and ethnicity are factors in developing diabetes. African Americans, Hispanic/Latino Americans, American Indians, Pacific Islanders and some Asian Americans are at higher risk of developing diabetes.**

Among adult Iowans who had been told they had diabetes, almost 2 out of 5 Iowans (39.4%) reported being first diagnosed at age 46 to 60 years old. Further, 3.6% of those ever diagnosed with diabetes reported their first time being diagnosed under the age of 16.

Figure 9.1: Percent of Iowans Diagnosed with Diabetes per Year, 2012 – 2019

Year	2012	2013	2014	2015	2016	2017	2018	2019
%	9.7	9.3	9.5	8.8	9.3	9.6	10.0	10.3
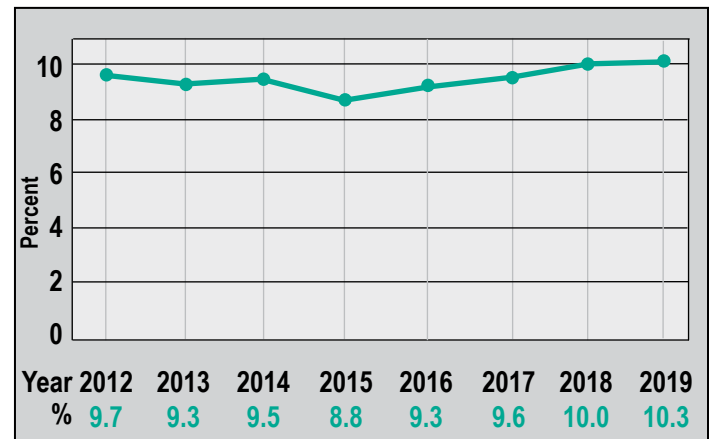
Comparison to other states

The prevalence rate of diagnosed diabetes for the 50 states and the District of Columbia was 10.7% in 2019, with Iowa's prevalence of 10.3% being slightly better than the median. Prevalence across the U.S ranged from 7.0% to 15.7%. The highest rates were reported in the central southwestern states.

References
1. American Diabetes Association (2021). Overview. Available at https://www.diabetes.org/diabetes.
2. Centers for Disease Control and Prevention. (2020). About Diabetes. Available at https://www.cdc.gov/diabetes/basics/diabetes.html.
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Cardiovascular Diseases

Background

Cardiovascular disease (CVD) refers to any or all of the many disorders that can affect the circulatory system and is the leading cause of death in the United States. CVD most often means heart disease, heart attack or stroke. Heart disease includes coronary heart disease (CHD) or heart attack, also known as myocardial infarction (MI). CHD is related to a condition known as atherosclerosis, which occurs when plaque builds up on the walls of the arteries narrowing the channel for blood to flow through. This can cause a heart attack or stroke if a blood clot in the arteries blocks blood flow (American Heart Association, 2017). A heart attack happens when a blood clot blocks blood flow to the heart. Stroke refers to a sudden impairment of brain function that occurs when 1) there is a blood clot in one of the blood vessels leading to the brain (ishemic stroke) which results in brain cells starting to die and a loss of functioning controlled by the brain or 2) when a blood vessel in the brain bursts (hemorrhagic stroke). Hemorrhagic strokes are usually caused by high blood pressure (hypertension; American Heart Association, 2017).

Almost half of Americans aged 20 years and older had some form of cardiovascular disease in 2016 (~ 121.5 million). Heart disease, stroke and hypertension were among the top 15 conditions causing disability in U.S. adults. For example, 3.0% of males and 2.0% of females became disabled as a result of a stroke (Benjamin et al., 2019). Suffering a stroke may lead to paralysis, speech difficulties, memory loss, emotional problems and changes in a person's behavioral style (American Stroke Association, 2021). Following a heart attack, individuals frequently suffer fatigue and depression and they may find it more difficult to engage in physical activities. In 2009, 25% of the most expensive inpatient hospital conditions were cardiovascular, including coronary atherosclerosis (heart disease caused by clogged/blocked arteries), acute myocardial infarction (heart attack) and congestive heart failure (Agency for Healthcare Research and Quality, 2012).

The economic impact of cardiovascular disease on our nation's health care system continues to grow as the population ages. Approximately one out of every six health care dollars is devoted to cardiovascular disease. In 2011, heart disease and stroke cost the nation an estimated $316.6 billion in health care costs and lost productivity (Centers for Disease Control and Prevention, 2020).

These costs are rising, such that the total cost of cardiovascular disease is projected to reach $1.1 trillion by 2035 (Benjamin et al., 2019). On a personal level, families who experience heart disease or stroke not only have to deal with medical bills, but also lost wages and the real potential of a decreased standard of living.

Reducing cardiovascular disease risk requires an integrated strategy that includes:

- Choosing healthy habits including weight management by increased physical activity and a low fat, low-cholesterol diet with moderate sodium, sugar and alcohol intake; no smoking, and managing stress levels.
- Taking charge of medical conditions individually and by working with a health care team to check and control cholesterol levels, control blood pressure, manage diabetes, and take medicines for these conditions as directed by the healthcare professional.
- Community environmental support such as population screening to identify individuals with high levels of blood cholesterol, blood pressure, blood glucose and other individuals at risk for heart disease. Community support also includes interventions that teach the skills necessary for behavior change that make living a healthier life easier. One popular example is the establishment and upkeep of bicycle or walking trails for use by the public. For every $1 invested in building these trails, it is estimated that there is a $3 medical cost savings (Benjamin et al., 2019). Community physical activity interventions and strategies at workplaces, schools and the built environment also help to encourage a healthy lifestyle.
- Development of public policies that encourage healthy lifestyle behaviors. These may be implemented in the form of laws, regulations, standards or guidelines that contribute to setting these and other social and environmental conditions. For example, dietary patterns result from the influences of food production policies, marketing practices, product availability, cost, convenience, knowledge and choices that affect health and preferences that are often based on early-life habits.

Cardiovascular Disease Results

In 2019, 4.0% of adult Iowans had been told by a doctor that they had a myocardial infarction (heart attack), which was lower than the percentage reported in 2018 but the same percentage reported in 2017. In 2019, 3.7% had been told they had coronary heart disease or angina which was a decrease from the 4.4% that was reported in 2018. Additionally, 3.1% had been told they had a stroke (see Table 10.1), which is the same percentage that was reported in 2017. The rate in 2018 was lower than both of these years at 2.5% of adult Iowans reported being told by a doctor that they had ever had a stroke.

FACT

Each year, **15-30%** of stroke survivors are permanently disabled.

Table 10.1: Prevalence of Heart Attack and Stroke in Iowa Adults, 2019

Demographic Groups	Ever told you had a heart attack, also called Myocardial Infarction (MI)?		Ever told you had coronary heart disease or angina		Ever told you had a stroke	
	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)
Total	4.0	(3.6-4.4)	3.7	(3.3-4.1)	3.1	(2.7-3.4)
Sex						
Male	5.5	(4.8-6.2)	4.6	(4.0-5.2)	3.1	(2.6-3.7)
Female	2.5	(2.1-3.0)	2.9	(2.4-3.3)	3.0	(2.5-3.5)
Race/Ethnicity						
White/Non-Hispanic	4.2	(3.7-4.6)	4.1	(3.7-4.5)	3.2	(2.8-3.6)
Black/Non-Hispanic	1.6	(0.0-3.5)	0.7	(0.0-1.7)	4.8	(1.5-8.1)
Other/Non-Hispanic	4.8	(1.8-7.8)	2.3	(0.0-4.9)	1.3	(0.0-3.2)
Hispanic	1.9	(0.5-3.4)	1.2	(0.3-2.0)	1.7	(0.6-2.8)
Age Group						
18-24	0.4	(0.0-1.0)	0.1	(0.0-0.3)	0.2	(0.0-0.6)
25-34	0.3	(0.0-0.7)	0.1	(0.0-0.1)	0.9	(0.2-1.6)
35-44	1.0	(0.4-1.7)	0.6	(0.1-1.0)	1.4	(0.7-2.1)
45-54	2.1	(1.3-2.9)	1.9	(1.1-2.7)	2.2	(1.3-3.0)
55-64	6.4	(5.1-7.7)	5.9	(4.6-7.1)	3.9	(2.9-4.8)
65-74	7.5	(6.1-8.9)	8.8	(7.3-10.3)	5.4	(4.1-6.7)
75+	13.8	(11.7-16.0)	12.3	(10.3-14.4)	10.4	(8.5-12.3)
Education						
Less Than H.S.	6.2	(4.0-8.4)	4.6	(2.5-6.7)	4.9	(3.0-6.9)
H.S. or G.E.D.	4.9	(4.1-5.6)	4.7	(3.9-5.4)	3.7	(3.0-4.4)
Some Post-H.S.	3.8	(3.1-4.5)	3.4	(2.8-4.0)	2.9	(2.3-3.5)
College Graduate	2.4	(1.9-3.0)	2.8	(2.2-3.4)	2.0	(1.5-2.5)
Household Income						
Less than $15,000	7.6	(5.1-10.1)	6.8	(4.4-9.2)	6.3	(4.2-8.5)
$15,000- 24,999	7.3	(5.7-8.8)	6.5	(4.9-8.0)	6.1	(4.5-7.8)
$25,000- 34,999	5.6	(3.9-7.3)	3.9	(2.6-5.3)	5.2	(3.5-6.9)
$35,000- 49,999	4.4	(3.0-5.8)	4.1	(3.0-5.1)	2.8	(1.7-3.8)
$50,000- 74,999	3.4	(2.5-4.4)	3.5	(2.6-4.4)	1.9	(1.2-2.6)
$75,000+	2.1	(1.6-2.7)	2.1	(1.6-2.6)	1.3	(0.9-1.7)

Table 10.2 (below) shows the distribution of cardiovascular disease by demographic groups. In 2019, 6.5% of Iowans reported having ever being told by a doctor that they had either a heart attack/myocardial infarction or coronary heart disease/angina. This was the same percentage that was reported in 2017. Additionally, 8.3% reported being told they had any of the three conditions (heart attack, coronary heart disease or stroke), which was a 0.3% increase from what was reported in 2018. Though this increased percentage may seem small, it represents a total of 203,524 adult Iowans having had a heart attack, coronary heart disease or stroke. Prevalence of any cardiovascular disease increased with age and was highest for Iowans aged 75 years or older. The lowest rates of any cardiovascular disease were reported in Iowans aged 18 to 24 years of age (0.7%). Non-Hispanic White Iowans had a higher rate of having any cardiovascular disease than Hispanic Iowans.

Table 10.2: Combined Prevalence of Heart Attack and Coronary Heart Disease and Combined Prevalence of Heart Attack, Coronary Heart Disease and Stroke, 2019

Demographic Groups	Had any Heart Disease (MI or CHD)?		Had any Cardiovascular Disease?	
	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)
Total	6.3	(5.7-6.8)	8.3	(7.8-8.9)
Sex				
Male	8.1	(7.2-8.9)	9.9	(9.0-10.8)
Female	4.5	(3.9-5.1)	6.8	(6.1-7.5)
Race/Ethnicity				
White/Non-Hisp.	6.6	(6.1-7.2)	8.8	(8.2-9.4)
Black/Non-Hisp.	2.4	(0.2-4.5)	6.2	(2.5-9.8)
Other/Non-Hisp.	6.3	(2.6-10.1)	7.2	(3.1-11.3)
Hispanic	2.8	(1.2-4.4)	3.8	(2.0-5.6)
Age Group				
18-24	0.5	(0.0-1.1)	0.7	(0.0-1.4)
25-34	0.4	(0.0-0.7)	1.2	(0.5-2.0)
35-44	1.6	(0.8-2.3)	2.7	(1.7-3.7)
45-54	3.4	(2.3-4.4)	4.9	(3.6-6.2)
55-64	9.9	(8.3-11.4)	12.0	(10.3-13.7)
65-74	12.6	(10.9-14.4)	16.4	(14.4-18.4)
75+	21.0	(18.4-23.6)	27.5	(24.7-30.3)
Education				
Less Than H.S.	9.3	(6.5-12.0)	12.5	(9.4-15.6)
H.S. or G.E.D.	7.6	(6.7-8.6)	10.1	(9.0-11.2)
Some Post-H.S.	5.8	(4.9-6.6)	7.7	(6.8-8.7)
College Graduate	4.3	(3.6-5.0)	5.7	(4.9-6.5)
Household Income				
Less than $15,000	12.1	(8.8-15.3)	15.9	(12.3-19.4)
$15,000- 24,999	10.7	(8.8-12.6)	14.6	(12.3-16.9)
$25,000- 34,999	7.8	(5.8-9.7)	11.0	(8.6-13.4)
$35,000- 49,999	6.8	(5.2-8.4)	8.2	(6.5-10.0)
$50,000- 74,999	5.6	(4.4-6.7)	7.0	(5.7-8.3)
$75,000+	3.4	(2.7-4.1)	4.5	(3.7-5.2)

FACT

203,524 Iowans have had at least one of the three forms of cardiovascular disease in their lifetime.

More men than women reported having experienced any heart and cardiovascular disease in 2019. Hispanic Iowans experienced any heart disease and cardiovascular disease at lower rates than other racial/ethnic groups. Age is the variable with the most impact on having had these conditions, with 21.0% and 27.5% of those 75 years and older reporting having had a heart disease or having experienced any of the three cardiovascular conditions respectively. Rates of heart and cardiovascular disease increased over the past year, while rates of reported stroke decreased (see Figure 10.1).

These results represent those who have survived these cardiovascular events and they may not match the actual prevalence of these conditions. For example, events ending in death on their first occurrence could not be considered here. Mortality data is required to complement the information from this survey.

Figure 10.1: Prevalence Among Adult Iowans of Heart Attack, Cardiovascular Disease and Stroke, 2013 – 2019

Year	2013	2014	2015	2016	2017	2018	2019
Heart Diseases	6.8	6.5	6.0	6.3	6.3	6.5	6.3
Stroke	2.8	2.7	2.3	3.1	3.1	2.5	3.1
Cardiovascular Diseases	8.5	8.2	7.5	8.3	8.2	8.1	8.3
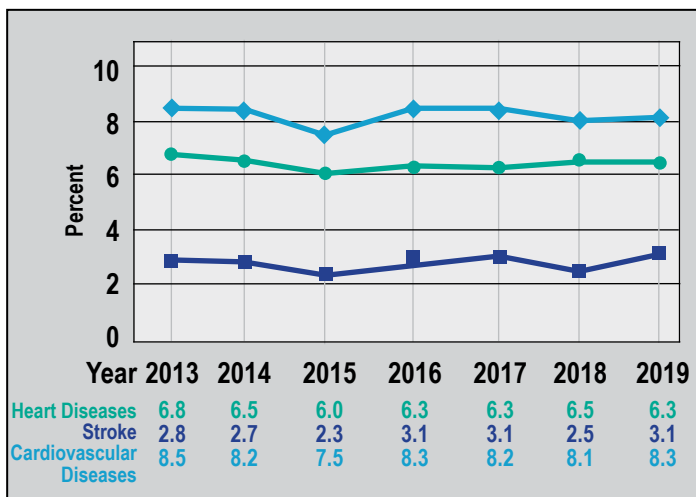
FACT

Men had higher rates of heart and cardiovascular disease than women.

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Exercise and Physical Activity

Background

A lifestyle that includes regular physical activity can reduce the risk of cardiovascular illness, certain cancers, osteoporosis, diabetes, falls and other debilitating conditions (Centers for Disease Control and Prevention, 2020). Additionally, regular physical activity can help to strengthen bones and muscles, improve mental health and quality of sleep as well as increase general quality of life. Despite the multitude of benefits, a large proportion of people in the United States remain physically inactive.

Any physical activity is better than none and the more the better (U.S. Department of Health and Human Services, 2018). According to the *Physical Activity Guidelines for Americans, 2nd edition*, adults should strive to engage in 150 minutes per week of moderate aerobic physical activity, 75 minutes per week of vigorous aerobic physical activity, or some combination. In addition, they should also engage in physical activity aimed at strengthening their muscles at a recommended level of at least two times per week.

Although the percentage of people who do not engage in regular physical activity remains high, there are efforts in motion to try to increase the physical activity level of people across the United States, and in Iowa specifically (Centers for Disease Control and Prevention, 2020; Iowa Department of Health, 2020). Interventions to increase physical activity include:

1. Designing communities where biking and walking is the easy choice.
2. Connecting activity-friendly routes with everyday destinations.
3. Increasing the number of complete streets in communities. A complete street is a street that has been designed with all users in mind: vehicles, cyclists and pedestrians.
4. Providing and increasing access to indoor and outdoor spaces for physical activity – away from busy streets, considering age and mobility of individuals. EX: parks and trails, fitness and recreational facilities, schools or universities, malls, senior centers and places of work.
5. Encouraging shared-use agreements to allow public access after hours in order to expand a property's usage.
6. Enhancing physical activity at places of work through support from management, access to facilities, policies and social support programs.
7. Continuous promotion of physical activity through motivation, signage and other resources.
8. Continuous promotion of physical activity and the built environment by the Iowa Department of Public Health and other organizations.

Encouraging people to have a less sedentary lifestyle by engaging in regular physical activity continues to be a significant step toward a healthier state and nation.

Exercise and Physical Activity Results

In 2019, 73.5% of respondents reported that they had engaged in some sort of physical activity for exercise during the past month other than their regular job. After a high of 77.4% in 2018, the current year's rate is the lowest since 2013, when the percentage was 71.5% (see Figure 11.1). Although the prevalence of exercise varies from year to year, the overall trend still appears level.

Figure 11.1: Percentage of Iowans Engaging in Leisure-Time Physical Activity in the Past 30 Days by Year, 2011 – 2019

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019
%	74.2	76.9	71.5	77.4	73.7	77.3	75.0	77.1	73.5

A larger proportion of younger respondents reported engaging in leisure physical activity than older respondents (see Table 11.1). The percentage of respondents who exercised also increased with education and household income. Hispanics reported the lowest rates of leisure physical activity (61.7%) compared to Non-Hispanic Whites and Other Non-Hispanics, which included those indicating multiple races. Men and women had similar rates of leisure physical activity in 2019. The lowest percentage of all examined demographic variables was for those who held less than a high school degree (58.0%), while the highest was for those who were college graduates (85.1%).

Table 11.1: Physical Activity in Iowans, 2019

Demographic Groups	Any Leisure Physical Exercise in Last Month	
	%	C.I. (95%)
Total	73.5	(72.5-74.6)
Sex		
Male	72.7	(71.2-74.2)
Female	74.3	(72.9-75.8)
Race/Ethnicity		
White/Non-Hispanic	74.3	(73.2-75.4)
Black/Non-Hispanic	71.3	(63.9-78.8)
Other/Non-Hispanic	74.0	(67.1-90.9)
Hispanic	61.7	(56.6-66.8)
Age Group		
18-24	81.0	(77.8-84.2)
25-34	77.7	(74.9-80.5)
35-44	73.7	(70.9-76.4)
45-54	71.7	(69.0-74.4)
55-64	71.1	(68.8-73.4)
65-74	71.5	(69.1-73.9)
75+	65.3	(62.2-68.3)
Education		
Less than H.S.	58.0	(53.2-62.9)
H.S. or G.E.D.	64.7	(62.7-66.7)
Some Post-H.S.	76.4	(74.6-78.1)
College Graduate	85.1	(83.6-86.5)
Household Income		
Less than $15,000	63.9	(59.1-68.7)
$15,000- 24,999	61.1	(57.6-64.6)
$25,000- 34,999	70.7	(67.0-74.4)
$35,000- 49,999	69.6	(66.5-72.7)
$50,000- 74,999	76.9	(74.4-79.3)
$75,000+	82.4	(80.9-84.0)

The BRFSS determines the level of aerobic physical activity by asking about two activities the person engages in for the most amount of time. These activities are determined as moderate or vigorous based on a complex formula involving several factors including both characteristics of the activity and of the person considering expected maximum oxygen usage. For each activity the frequency of times engaged in for at least ten minutes per week and the total duration of these times is determined.

There is also a question asked about activities designed for strengthening the muscles. The recommendation is that people engage in muscle strengthening activity at least twice a week.

The percentage of respondents who met the recommended level of aerobic physical activity in 2019 was 48.3%. The percentage of respondents who met the recommended level of strengthening activity was 32.9%. Despite these figures, only one out of five adult Iowans (20.0%) met both of the recommended levels of aerobic and strengthening activity.

The relation of meeting the recommendations for aerobic and strengthening activity differed among the demographic groups. The percentage of respondents reporting they had engaged in the recommended amount of aerobic activity was higher for people with higher income and higher education. This was especially observed in the level of education obtained. More specifically, meeting the recommended amount of aerobic activity increased for each additional level of education attained. The group with the highest percentage meeting the aerobic recommendation were those who were college graduates (55.6%). The lowest percentage was among those who reported less than a high school education (36.5%; see Table 11.2).

The muscle-strengthening recommendation was met by a higher percentage of younger people, especially those 18-24 years old, those with more education and people with the highest incomes. The highest percentage was found among those age 18 to 24 years (48.0%), and the lowest percentage was found among those with less than a high school education.

Table 11.2: Percent of Iowans Receiving Recommended Levels of Physical Activity, 2019

Demographic Groups	Recommended Level of Physical Activity					
	Aerobic		Strengthening		Both Aerobic & Strength	
	%	C.I. (95%)	%	C.I. (95%)	%	C.I. (95%)
Total	48.3	(47.0-49.5)	32.9	(31.8-34.1)	20.0	(19.1-21.0)
Sex						
Male	47.2	(45.5-49.0)	34.8	(33.1-36.4)	19.8	(18.4-21.3)
Female	49.3	(47.6-50.9)	31.1	(29.6-32.7)	20.2	(18.9-21.6)
Race/Ethnicity						
White/Non-Hispanic	49.2	(48.0-50.5)	32.5	(31.3-33.7)	20.2	(19.2-21.3)
Non-White or Hispanic	41.7	(37.6-45.8)	36.5	(32.5-40.5)	19.3	(15.9-22.7)
Age Group						
18-24	47.5	(43.3-51.6)	48.0	(43.9-52.2)	26.8	(23.0-30.6)
25-34	44.1	(40.8-47.5)	32.7	(29.6-35.8)	16.6	(14.1-19.1)
35-44	44.8	(41.6-47.9)	29.7	(26.8-32.5)	17.3	(14.9-19.7)
45-54	49.3	(46.3-52.3)	30.0	(27.2-32.7)	19.6	(17.2-22.0)
55-64	50.4	(47.9-53.0)	28.8	(26.4-31.1)	19.3	(17.3-21.4)
65-74	51.3	(48.6-54.0)	31.7	(29.2-34.2)	20.9	(18.7-23.1)
75+	53.5	(50.2-56.8)	30.4	(27.5-33.4)	22.1	(19.3-24.8)
Education						
Less than H.S.	36.5	(31.5-41.5)	27.6	(22.9-32.4)	14.2	(10.3-18.1)
H.S. or G.E.D.	43.7	(41.5-45.8)	28.2	(26.2-30.2)	16.9	(15.2-18.6)
Some Post-H.S.	49.6	(47.4-51.7)	33.8	(31.7-35.8)	20.8	(19.0-22.6)
College Graduate	55.6	(53.5-57.6)	38.9	(36.9-40.8)	24.5	(22.8-26.3)
Household Income						
Less than $15,000	38.9	(33.6-44.1)	31.7	(26.7-36.8)	16.6	(12.4-20.8)
$15,000- 24,999	38.8	(35.3-42.4)	29.4	(26.0-32.7)	14.8	(12.2-17.5)
$25,000- 34,999	47.0	(42.8-49.6)	28.5	(24.6-32.4)	18.3	(14.9-21.8)
$35,000- 49,999	46.2	(42.8-49.6)	32.1	(28.8-35.3)	19.2	(16.5-21.9)
$50,000- 74,999	49.7	(46.7-52.6)	32.4	(29.7-35.2)	20.2	(17.8-22.5)
$75,000+	54.1	(52.0-56.2)	36.7	(34.7-38.7)	23.4	(21.6-25.2)

Since the neighborhood environment can have much influence on a person's level of physical activity, a module was asked about the neighborhood environment. It was found that 73.9% of Iowans rated their neighborhood as a very pleasant place to walk. Sidewalks were said to be present by 67.5% of adult Iowans. Only 27.8% of Iowans used schools for public recreational activity. However, about 3 in 5 Iowans (61.7%) reported using walking trails or parks in their community.

Comparison with Other States

Values for the measure of not engaging in leisure time physical activity in the 50 states and the District of Columbia ranged from a low of 18.5% to a high of 37.7%. Iowa ranked slightly worse than the national median of 26.5% of adults not engaging in leisure time physical activity with a rate of 26.3%.

Health Objectives for Iowa and the Nation

The national target for reducing the proportion of adults who engage in no leisure-time physical activity is 32.6%. Iowa's level of 26.5% meets and exceeds this national target.

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Diet and Nutrition

Background

Proper nutrition is critical to living a healthy life. According to the most recent Dietary Guidelines for Americans (U.S. Department of Health and Human Services and U.S. Department of Agriculture, 2015), a pattern of healthy eating should include vegetables from a variety of subgroups and whole fruits. It is recommended that vegetables be consumed from a variety of different subgroups, including dark green, orange, legumes, starchy vegetables and other vegetables (U. S. Department of Health and Human Services & U.S. Department of Agriculture, 2015).

Increased consumption of fruits and vegetables by individuals is a practical and important means for optimizing nutrition to reduce risk of disease and maximize good health. Eating a diet high in fruits and vegetables can help lower chronic disease risk and aid in weight management. Fruits and vegetables contain essential vitamins, minerals, fiber, and other bioactive compounds; a diet high in these foods is associated with lower risk for numerous chronic diseases, including certain cancers, diabetes, and cardiovascular diseases (Slavin & Lloyd, 2012).

In addition to fruits and vegetables, the Dietary Guidelines recommend consuming a variety of foods in other food groups, but most importantly, whole grains, low-fat or fat-free dairy, protein and oils. People should limit their intake of saturated fats and trans-fats, added sugars, salt and refined or processed foods. The concern is that high-calorie, nutrient-poor sugary foods and beverages are replacing more nutritious foods, adding to the overweight problem.

Diet and Nutrition Results

The BRFSS asks a series of six questions about how often the respondent eats various fruit or vegetables. From the answers to these questions, indices are computed showing the total average consumption per day of fruit and vegetables. The questions involved juice, fruit, beans, dark green vegetables, orange-colored vegetables and other vegetables. Definitions and examples are given concerning what should count in each category.

Looking at fruit consumption, 40.4% of adult Iowans reported consuming fruit less than one time per day. This is a higher figure than what was reported in 2017, when 35.6% of adult Iowans reported consuming fruit less than one time

per day. In 2019, adult Iowans consumed a lower amount of fruit per day. Specifically, 22.7% of adult Iowans reported a consumption pattern of less than one time per day (see Table 12.1). Like fruit consumption, less vegetables per day were consumed by Iowans in 2019 compared to 2017, when 19.3% consumed vegetables less than one time per day.

Women, older people, people with more education and people with higher household incomes tended to eat more fruit and vegetables per day. Adult Iowans age 75 years and older showed the best pattern of consuming fruits each day (25.1% ate less than one fruit per day). Adult Iowans who were college graduates showed the best pattern of consuming vegetables each day (16.4% at less than one vegetable per day). The worst fruit consumption patterns were found among a few demographic groups: those earning less than $24,999 per year, males and those between the ages of 18 and 24. These groups all consumed less than one fruit per day at rates between 45.0% and 45.8%. The worst vegetable consumption patterns were found among Hispanic Iowans (39.2%), followed by people with less than a high school education (35.4%). In each of these demographic groups, over 1 out of every 3 Iowans had consumed less than one vegetable per day.

In 2019, the survey asked several other questions concerning dietary habits. When asked "How often do you drink soda or pop containing sugar", 39.0% said they did not drink it at all. When asked "How often do you drink sweetened fruit drinks", 59.6% said they did not drink them at all.

Concerning sodium or salt, 43.3% of adult Iowans said they were currently watching their salt intake, which is a lower percentage than what was reported in 2017 (44.2%). In addition, 17.9% said that a doctor had advised them to watch their salt intake. In 2019, more Iowans had been advised by a doctor to reduce their salt intake than in 2017 when 15.6% were advised to consider sodium reduction.

FACT

Over 2 out of 5 adult Iowans were watching their salt intake in 2019.

Comparison with Other States

The consumption of fruit per day in the 50 states and District of Columbia ranged from a low of 51.6% to a high of 68.2% consuming at least one fruit per day. The range of consumption of vegetables went from 74.8% to 87.5% of individuals consuming vegetables at least once per day. Iowa's level of 64.4% for fruit is above the national median of 60.7%, while Iowa's level of 77.3% for vegetables is slightly below the national median consumption rate for vegetables (79.7%).

Health Objectives for Iowa

Healthy Iowans set the objective for the percentage of Iowans eating five or more fruit and/or vegetables per day at 13.2%. The state has met the goal in 2019 with 13.2% eating five or more fruit and/or vegetables per day.

References
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FACT

In 2019, adults in Iowa met the Healthy Iowans goal for consumption of 5 or more fruits and/or vegetables per day.

Table 12.1: Iowans Eating Fruits & Vegetables Less Than Once per Day, 2019

Demographic Groups	<1 Fruit per Day		<1 Vegetable per Day	
	%	C.I. (95%)	%	C.I. (95%)
TOTAL	40.4	(39.2-41.6)	22.7	(21.7-23.8)
Sex				
Male	45.5	(43.7-47.2)	25.6	(24.0-27.1)
Female	35.7	(34.0-37.3)	20.0	(18.7-21.4)
Race/Ethnicity				
White/Non-Hisp.	40.4	(39.2-41.6)	21.7	(20.6-22.7)
Black/Non-Hisp.	38.8	(30.2-47.3)	28.1	(20.1-36.1)
Other/Non-Hisp.	43.3	(35.2-51.5)	22.0	(15.1-28.9)
Hispanic	39.8	(34.4-45.1)	39.2	(33.7-44.6)
Age Group				
18 - 24	45.0	(40.8-49.2)	31.1	(27.2-35.0)
25 - 34	44.6	(41.3-48.0)	23.9	(21.1-26.8)
35 - 44	43.3	(40.2-46.5)	21.7	(19.2-24.3)
45 - 54	42.7	(39.7-45.7)	21.2	(18.7-23.7)
55 - 64	40.8	(38.3-43.4)	21.1	(19.0-23.2)
65-74	36.0	(33.4-38.6)	21.4	(19.2-23.6)
75+	25.1	(22.2-28.1)	-	-
Education				
Less than H.S.	39.1	(34.0-44.2)	35.4	(30.5-40.3)
H.S. or G.E.D.	44.7	(42.5-46.9)	25.2	(23.3-27.2)
Some Post-H.S.	44.1	(42.0-46.2)	22.7	(20.9-24.5)
College Graduate	31.3	(29.4-33.2)	16.4	(14.8-17.9)
Household Income				
Less than $15,000	45.8	(40.5-51.0)	32.2	(27.2-37.2)
$15,000- 24,999	45.2	(41.5-48.9)	28.8	(25.4-32.1)
$25,000- 34,999	39.4	(35.3-43.6)	25.8	(22.0-29.5)
$35,000- 49,999	43.0	(39.5-46.4)	24.9	(21.8-27.9)
$50,000- 74,999	39.4	(36.5-42.3)	20.3	(17.9-22.8)
$75,000+	38.8	(36.8-40.9)	17.3	(15.7-18.8)

Background

Few things are as immediately important to life as the ability to breathe. Several respiratory diseases exist that can make breathing difficult. A few common ones are asthma and chronic obstructive pulmonary disease (COPD).

Asthma is a chronic, inflammatory disease of the lungs in which the airways become blocked or narrowed causing breathing difficulty. It is characterized by recurrent wheezing, breathlessness, coughing and chest tightness (National Heart Lung and Blood Institute, 2020).

This chronic disease affects more than 24.7 million Americans of all ages. Asthma is the most common chronic disease of childhood. About 5.5 million children under the age of 18 (7.5%) suffer from asthma (Centers for Disease Control and Prevention, 2020). Prevalence among adults and children has increased sharply since 1980 (Centers for Disease Control and Prevention, 2011).

The causes of asthma are not completely understood, but are most likely a combination of personal and environmental risk factors. Those risk factors for asthma include family history of asthma and allergies, acute respiratory infections, exposure to indoor air pollution (tobacco smoke, animal dander, dust mites, cockroaches, occupational exposures to more than 250 substances), outdoor air pollution (burning leaves, pollen, air pollutants), obesity and lack of exercise. Diet and early exposure to certain infectious agents may provide some protection. After developing asthma, a person often becomes especially sensitive to any exposures to the environmental risk factors listed (National Heart Lung and Blood Institute, 2020).

Asthma is a leading cause of inpatient admission and of unscheduled emergency department and physician office visits. Many of these admissions and visits could be avoided if medical and self-management of asthma were carried out according to national guidelines. Self-management of asthma involves the proper use of asthma medications and devices as well as the avoidance of known triggers. People who suffer from asthma are encouraged to develop an asthma management plan.

Poor asthma control continues to be associated with increased emergency department visits, hospitalizations and medical costs. The estimated total cost of asthma to society, including medical expenses ($50.3 billion), loss of productivity resulting from missed school or work days ($3 billion per year) and asthma related death ($29 billion) was an estimated $81.9 billion in 2013 (Nurmagambetov, Kuwahara, & Garbe, 2018). Medical expenses associated with asthma were $3,266 per person per year (in 2015 U.S. dollars) during 2008-2013 (Nurmagambetov et al., 2018).

Chronic Obstructive Pulmonary Disease (COPD) includes both chronic bronchitis and emphysema. It is one of the most common lung diseases. Chronic bronchitis is defined by a long-term cough with mucus, while emphysema is defined by destruction of the lungs over time. Most people with COPD have a combination of both conditions (MedlinePlus, 2021).

Smoking is the leading cause of COPD. The more a person smokes, the more likely that person will develop COPD. Another cause is exposure to secondhand smoke or air pollution.

There is no cure for COPD. However, there are many things you can do to relieve symptoms and keep the disease from getting worse. Persons with COPD must stop smoking. This is the best way to slow the lung damage. Medications may also be used to treat COPD symptoms. Oxygen therapy at home may be needed if a person has a low level of oxygen in their blood.

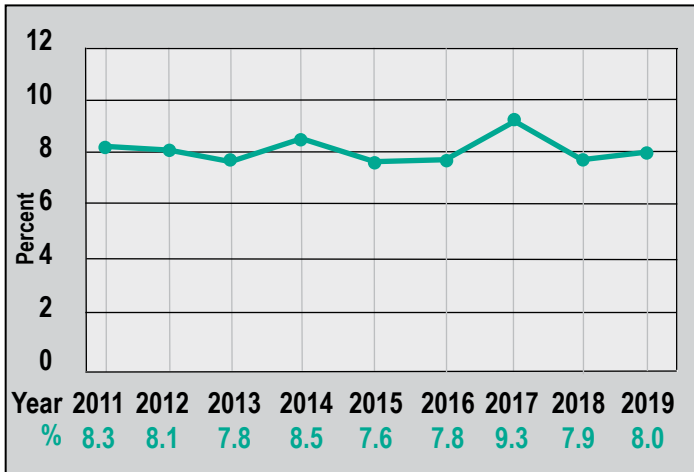## Respiratory Diseases Results

In 2019, 12.2% of Iowans reported ever being diagnosed by a physician with asthma. Out of all adult Iowans, 8.0% currently had asthma, and 3.8% formerly had asthma.

FACT

The causes of asthma are likely a combination of personal and environmental factors, but smoking is the leading cause of COPD.

**Figure 13.1: Current Asthma in Iowa
by Year, 2011 – 2019**

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019
%	8.3	8.1	7.8	8.5	7.6	7.8	9.3	7.9	8.0

**Table 13.1: Iowans Currently and Formerly
Having Asthma, 2019**

Demographic Groups	Current Asthma		Former Asthma	
	%	C.I. (95%)	%	C.I. (95%)
Total	8.0	(7.4-8.7)	3.8	(3.4-4.3)
Sex				
Male	5.2	(4.4-6.0)	4.1	(3.5-4.8)
Female	10.8	(9.7-11.9)	3.5	(2.9-4.2)
Race/Ethnicity				
White/non-Hispanic	7.8	(7.1-8.5)	3.8	(3.3-4.3)
Black Non-Hispanic	10.4	(6.0-14.8)	3.8	(0.7-6.9)
Other Non-Hispanic	12.4	(7.2-17.7)	6.3	(2.8-9.8)
Hispanic	5.4	(3.1-7.8)	3.6	(1.7-5.5)
Age Group				
18-24	11.4	(8.7-14.1)	5.7	(3.9-7.5)
25-34	9.0	(7.0-11.0)	5.8	(4.3-7.4)
35-44	7.9	(6.2-9.6)	4.1	(2.9-5.2)
45-54	6.8	(5.4-8.2)	3.8	(2.7-5.0)
55-64	7.6	(6.3-8.9)	2.8	(1.9-3.6)
65-74	6.1	(4.9-7.3)	2.6	(1.8-3.4)
75+	6.6	(5.1-8.2)	1.6	(0.9-2.3)
Education				
Less than H.S.	10.7	(7.4-14.1)	2.8	(1.1-4.5)
H.S. or G.E.D.	8.2	(7.0-9.4)	3.8	(3.0-4.7)
Some Post-H.S.	8.7	(7.5-9.9)	4.0	(3.2-4.9)
College Graduate	6.0	(5.1-7.0)	3.9	(3.1-4.8)
Household Income				
Less than $15,000	14.0	(10.7-17.4)	4.3	(2.1-6.5)
$15,000- 24,999	13.2	(10.6-15.8)	2.6	(1.5-3.7)
$25,000- 34,999	10.0	(7.4-12.5)	4.8	(3.0-6.7)
$35,000- 49,999	8.1	(6.2-10.0)	3.5	(2.2-4.8)
$50,000- 74,999	6.7	(5.2-8.2)	4.3	(3.0-5.6)
$75,000+	5.9	(4.8-7.0)	4.0	(3.2-4.8)

In Iowa, more women, people with less than a high school education and people with a lower annual household income currently have asthma. Those who were 18 to 24 years old had a higher prevalence rate of current asthma than those 65 years of age or older. There were no statistical differences in current asthma rates between the racial/ethnic groups examined. The highest current asthma prevalence was among people earning less than $15,000 per year (14.0%). The lowest prevalence was among Hispanics (5.4%; see Table 13.1). When looking at former asthma prevalence rates, the only statistical differences were among age categories. Older Iowans (age 55 and older) had lower rates of former asthma than younger Iowans (age 34 and younger).
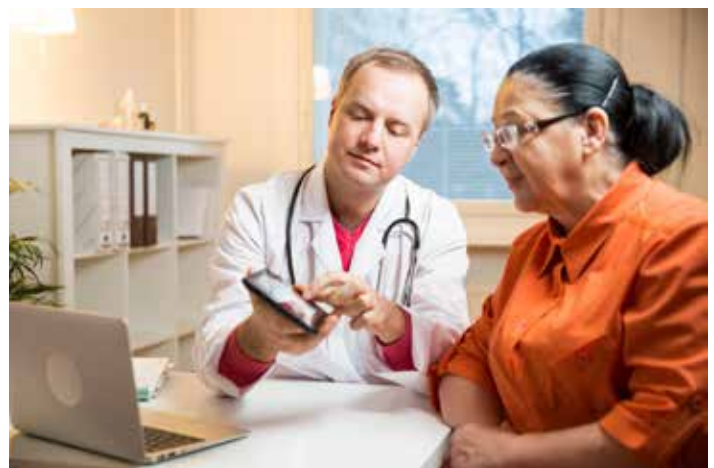
Starting in 2006 the BRFSS has collected a considerable amount of information from the people who reported they or their children had ever had asthma in a special callback survey. The data from that survey is not included in this report, but may be presented separately.

FACT

The current asthma rate for females was double the rate for males.

Table 13.2: Iowans Who Have Been Told They Have COPD, 2019

Demographic Groups	COPD	
	%	C.I. (95%)
Total	6.1	(5.6-6.6)
Sex		
Male	5.6	(4.9-6.4)
Female	6.5	(5.8-7.3)
Race/Ethnicity		
White/Non-Hispanic	6.2	(5.6-6.7)
Black/Non-Hispanic	10.1	(5.4-14.8)
Other/Non-Hispanic	5.4	(2.7-8.1)
Hispanic	2.3	(0.6-4.0)
Age Group		
18-24	1.8	(0.7-2.9)
25-34	2.0	(1.2-2.9)
35-44	3.1	(2.0-4.2)
45-54	6.0	(4.6-7.5)
55-64	10.1	(8.5-11.6)
65-74	10.2	(8.6-11.9)
75+	11.2	(9.2-13.2)
Education		
Less than H.S.	12.7	(9.6-15.9)
H.S. or G.E.D.	8.0	(7.0-9.0)
Some Post-H.S.	5.4	(4.6-6.3)
College Graduate	2.5	(1.9-3.1)
Household Income		
Less than $15,000	16.6	(13.1-20.1)
$15,000- 24,999	12.8	(10.4-15.1)
$25,000- 34,999	7.8	(5.7-9.9)
$35,000- 49,999	6.4	(4.8-8.0)
$50,000- 74,999	4.5	(3.4-5.6)
$75,000+	2.1	(1.5-2.6)

When asked if they had been told they had COPD, 6.1% of adult Iowans said they had. This is slightly higher than in 2018 (5.8%), but lower than in 2017 when 6.4% reported that they had ever been told they had COPD. Women had a higher prevalence rate than men, but there was not a statistically significant difference between men and women (see Table 13.2). COPD was more common among older people, people with less education and people with a lower household income. Adult Iowans aged 25-34 had the lowest reported prevalence rate of ever having COPD (0.8%), while those with a household income of less than $15,000 per year had the highest prevalence rate (18.9%).

Comparison with Other States

In 2019, the prevalence rate of adult Iowans currently suffering from asthma was 8.0% which was lower than the median rate for the 50 states and the District of Columbia, of 9.7%. The range was from 7.1% to 11.8%. Iowa continues to have one of the lowest rates of current asthma. In 2019, Iowa had the fourth lowest rate of current asthma and had the same rate as Nebraska.

References
1. Centers for Disease Control and Prevention. (2020). Most Recent Asthma Prevalence Data. Available at https://www.cdc.gov/asthma/most_recent_national_asthma_data.htm.
2. Nurmagambetov, T., Kuwahara, R., & Garbe, P. (2018). The economic burden of asthma in the United States, 2008–2013. *Annals of the American Thoracic Society, 15*(3), 348-356.
3. Centers for Disease Control and Prevention. (2011). Vital Signs: Asthma Prevalence, Disease Characteristics, and Self-Management Education – United States, 2001–2009. *Morbidity and Mortality Weekly Report, 60*(17), 547-552.
4. MedlinePlus (2021). Chronic Obstructive Pulmonary Disease (COPD). Available at http://www.nlm.nih.gov/medlineplus/ency/article/000091.htm.
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FACT

Iowa and Nebraska have the 4th lowest rate of current asthma in the nation.

Background

Cancer is a very common condition and the second most common cause of death in the United States, following heart disease. Cancer occurs when a group of cells grows out of control and has the ability to take over normal cells (American Cancer Society, 2020). Cancer may arise almost anywhere in the body, though some locations are more common than others. Overall, skin cancer is the most common type of cancer. Among men, prostate cancer is most common, only behind skin cancer. Other common types include lung, breast and colorectal cancer.

Though cancer is a common disease, more and more people are surviving cancer. The American Cancer Society predicted that in 2019 there would be an estimated 1,762,450 new cancer cases diagnosed and 606,880 cancer deaths in the U.S. (American Cancer Society, 2019). Despite this, death rates for all cancer types have declined since 1991 when the cancer death rate peaked at 215 deaths from cancer per 100,000 people by about 27% in 2016 (156 cancer deaths per 100,000 people). Progress towards lowering the death rate for those who are diagnosed with cancer is largely contributed to by reductions in smoking as well as vast improvements in early cancer detection and treatment methods. The decline in cancer death rates over the last 2 decades have resulted in over 2.6 million fewer deaths from cancer from 1991 to 2016 (American Cancer Society, 2019).

Skin and Other Cancer Screening Results

In 2019, 6.5% of adult Iowans had ever been told they had skin cancer, which remained unchanged since 2018. In 2019, 6.8% reported having been told they had some other type of cancer, a prevalence rate that has decreased slightly over the past year (7.1% in 2018).

Skin cancer behaves somewhat differently from other types of cancers, which themselves may vary in prevalence and prognosis according to type. Skin cancer was more common among Non-Hispanic Whites, and the prevalence rate was similar among males and females. Other cancers were more common among females and adult Iowans with lower household incomes. In general, the prevalence rate for having skin cancer or other cancers increased with age. The highest prevalence of ever having skin or other cancer was for Iowans who were aged 75 years and older (22.0% for skin cancer and 18.2% for other cancer). Hispanics as well as those aged 25 to 34 years had a skin cancer prevalence of less than 1.0%, while for other cancers only Iowans aged 18-24 years had a prevalence rate below 1.0% (see Table 14.1).

FACT

Reductions in smoking and improvements in early cancer detection and treatment methods are helping to lower the cancer death rate.

Table 14.1: Prevalence of Iowans Reporting ever Having Cancer, 2019

Demographic Groups	Ever Had Skin Cancer		Ever Had Other Cancer	
	%	C.I. (95%)	%	C.I. (95%)
Total	6.5	(6.0-7.0)	6.8	(6.3-7.3)
Sex				
Male	6.4	(5.7-7.1)	5.3	(4.6-5.9)
Female	6.6	(5.9-7.3)	8.3	(7.5-9.1)
Race/Ethnicity				
White/Non-Hisp.	7.3	(6.8-7.9)	7.4	(6.9-8.0)
Black/Non-Hisp.	1.2	(0.0-3.1)	1.8	(0.1-3.5)
Other/Non-Hisp.	1.0	(0.1-1.9)	2.8	(1.0-4.7)
Hispanic	0.4	(0.0-0.8)	2.1	(0.9-3.2)
Age Group				
18-24	0.4	(0.0-0.8)	0.5	(0.0-1.0)
25-34	1.1	(0.3-1.8)	1.6	(0.8-2.4)
35-44	1.7	(0.9-2.4)	3.0	(2.0-4.0)
45-54	4.4	(3.3-5.5)	5.4	(4.1-6.7)
55-64	8.6	(7.2-10.0)	9.6	(8.2-11.1)
65-74	13.7	(11.9-15.4)	13.6	(11.9-15.3)
75+	22.0	(19.6-24.5)	18.2	(15.8-20.5)
Education				
Less Than H.S.	3.6	(1.9-5.4)	5.7	(3.8-7.6)
H.S. or G.E.D.	6.9	(6.0-7.8)	8.6	(7.6-9.6)
Some Post-H.S.	6.0	(5.2-6.8)	5.9	(5.1-6.7)
College Graduate	7.6	(6.7-8.6)	6.3	(5.5-7.1)
Household Income				
Less than $15,000	5.0	(3.1-6.9)	9.7	(6.8-12.7)
$15,000- 24,999	6.2	(4.8-7.6)	9.9	(8.0-11.8)
$25,000- 34,999	8.1	(6.1-10.0)	8.0	(6.1-9.9)
$35,000- 49,999	8.0	(6.4-9.7)	7.8	(6.2-9.4)
$50,000- 74,999	6.7	(5.5-7.9)	6.2	(5.1-7.4)
$75,000+	6.3	(5.4-7.1)	4.7	(3.9-5.4)

References
1. American Cancer Society. (2020). Cancer Basics. Available at https://www.cancer.org/cancer/cancer-basics/what-is-cancer.html.
2. American Cancer Society. (2019). Cancer Facts & Figures 2019. Atlanta: American Cancer Society.

FACT

Rates of skin and other cancer increase with age.

Tobacco

Background

Tobacco use remains the leading cause of preventable disease and death in the United States. An estimated 34 million or 14.0% of all American adults currently smoke ciga-rettes (Centers for Disease Control and Prevention, 2020).

Tobacco use is known to cause heart disease, stroke, peripheral vascular disease, respiratory diseases such as COPD and asthma attacks as well as cancers of the lung, larynx, esophagus, pharynx, mouth, bladder, pancreas, kidney and cervix. In fact, smoking can cause disease in nearly every organ of the body (Centers for Disease Control and Prevention, 2020).

Consequences of smoking during pregnancy include spontaneous abortions, low birth weight babies and sudden infant death syndrome (SIDS).

Secondhand smoke (SHS) increases the risk of heart disease and lung cancer in adults. Recently, research has shown that exposure to SHS can cause strokes in those who do not smoke (Department of Health and Human Services, 2014). SHS also affects children by decreasing pulmonary function as well as by increasing the risk of lower respiratory tract infections and asthma. SHS in children can lead to ear infections, coughing, sneezing and shortness of breath (Centers for Disease Control and Prevention, 2021). According to the Surgeon General there is no safe level of exposure to SHS due to individuals inhaling over 7,000 chemicals when exposed (U. S. Department of Health and Human Services, 2014).

Many steps are being taken to prevent the use of tobacco. Some of these include reducing exposure to environmental tobacco smoke, smoking prevention education, the restriction of minors' access to tobacco, the treatment of nicotine addiction (cessation) and working toward changing social norms and environments that support tobacco use. Efforts to shift social norms surrounding smoking include counter-advertising and promotion, product regulation and economic incentives against tobacco. In Iowa, smoking cessation programs such as Quitline Iowa offer free nicotine replacement therapy (NRT).

Tobacco Results

Current smoking is defined as smoking at least 100 cigarettes in a lifetime and smoking every day or some days during the past 30 days. Among adult Iowans in 2019, 16.4% reported being a current smoker (see Table 15.1). This was a slightly lower rate than in 2018 when 16.6% reported being a current smoker. The prevalence rate in 2019 was the lowest rate reported in the past 7 years. This being said,

Iowans aged 18-34 had lower prevalence rates than in 2018, and those aged 35 to 64 reported slightly higher prevalence rates of current smoking than in 2018.

In 2019, more males reported being current smokers than females. Hispanic Iowans reported the lowest rates of current smoking, compared to Black Non-Hispanic, Other Non-Hispanic, and White Non-Hispanic Iowans. The rate decreased as education and household income levels increased. Respondents with household incomes less than $15,000 reported the highest prevalence rate of current smokers at 29.5% and those who were 75 years of age or older reported the lowest rates of being a current smoker. In terms of age, cigarette smoking prevalence was highest among those between the ages of 35 and 44, and the rate of smoking declined after age 44 (see Table 15.1).

Table 15.1: Current Smoking in Iowa, 2019

Demographic Groups	Prevalence Rate (%)	C.I. (95%)
Total	16.4	(15.5-17.3)
Sex		
Male	17.9	(16.6-19.3)
Female	14.8	(13.7-16.0)
Race/Ethnicity		
White/Non-Hispanic	16.4	(15.4-17.3)
Black/Non-Hispanic	25.3	(18.0-32.6)
Other/Non-Hispanic	17.1	(11.4-22.8)
Hispanic	8.7	(5.9-11.4)
Age Group		
18-24	11.6	(8.9-14.3)
25-34	21.6	(18.9-24.3)
35-44	22.1	(19.4-24.7)
45-54	20.8	(18.3-23.2)
55-64	18.1	(16.1-20.1)
65-74	11.1	(9.4-12.8)
75+	4.3	(3.0-5.6)
Education		
Less Than H.S.	23.4	(19.2-27.7)
H.S. or G.E.D.	21.8	(20.1-23.6)
Some Post-H.S.	17.5	(15.9-19.1)
College Graduate	6.3	(5.3-7.3)
Household Income		
Less than $15,000	29.5	(24.9-34.1)
$15,000- 24,999	25.8	(22.6-29.0)
$25,000- 34,999	21.1	(17.8-24.5)
$35,000- 49,999	18.4	(15.7-21.0)
$50,000- 74,999	16.5	(14.3-18.8)
$75,000+	10.5	(9.2-11.8)

When asked about attempts to quit smoking, 51.6% or about 197,684 current Iowan adult smokers reported they quit smoking for a day or more during the past year, which continues the trend of fewer Iowans attempting to quit. There was not a statistical difference between quit attempts among males and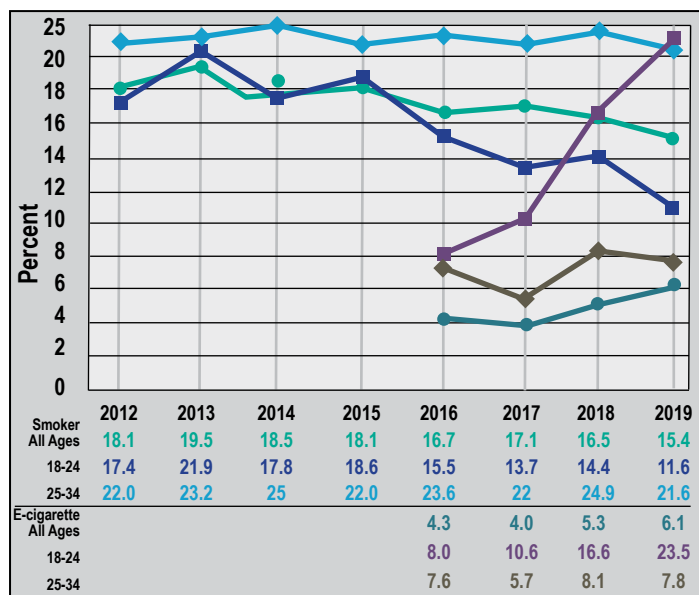 females, and those of minority race/ethnicity had a higher rate of attempting to quit smoking than Non-Hispanic White Iowans (63.7% vs. 50.0% respectively). Younger smokers tended to have higher rates of attempting to quit, but these were not statistically different from older smokers. Older adult Iowans (those 75 years of age or older) had the lowest prevalence rate of attempting to quit smoking (35.5%), followed by those who were 55-64 years of age (46.6%). Quit attempts were highest among those of minority race/ethnicity (63.7%).

About 24.2% of respondents were former smokers. This means that they had smoked at least 100 cigarettes in their lifetime, but do not currently smoke. There was not a difference in prevalence rates between males and females, but the percentage of former smokers generally tended to increase with age. For example, the 18 to 24-year age group had only 7.2% former smokers, while those 75 and older reported 39.4% (Figure 15.1). Non-Hispanic White Iowans had a higher percentage of former smokers than minority race/ethnicity groups. When asked how long it had been since they last smoked cigarettes, the majority of former smokers said 10 or more years (57.7%).

Figure 15.1: Percentage of Current and Former Smokers by Age, 2019

Ages	18-24	25-34	35-44	45-54	55-64	65-74	75+
Current Smoker	11.6	21.6	22.1	20.8	18.1	11.1	4.3
Former Smoker	7.2	16.2	24.5	21.6	28.4	37.3	39.4
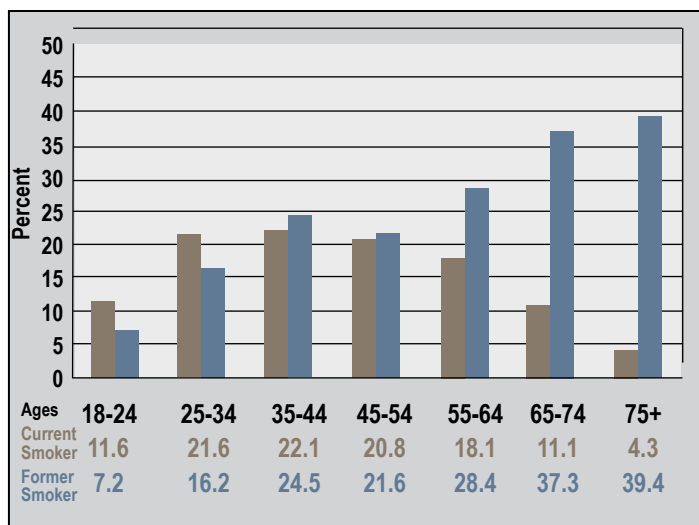
Figure 15.2: Current Smoking and E-Cigarette Use in Iowa by Year and Age, 2012 – 2019

	2012	2013	2014	2015	2016	2017	2018	2019
Smoker All Ages	18.1	19.5	18.5	18.1	16.7	17.1	16.5	15.4
18-24	17.4	21.9	17.8	18.6	15.5	13.7	14.4	11.6
25-34	22.0	23.2	25	22.0	23.6	22	24.9	21.6
E-cigarette All Ages					4.3	4.0	5.3	6.1
18-24					8.0	10.6	16.6	23.5
25-34					7.6	5.7	8.1	7.8

In 2019, 24.4% of Iowans said they had every used an e-cigarette or other electronic vaping products, which is a slight (0.4%) increase from 2018. Out of those who had every used at least one of these products, 6.1% were currently using e-cigarettes. This current e-cigarette use has continued to increase since 2017 when 4.0% of Iowans indicated that they currently used e-cigarettes. Use of e-cigarettes is particularly common among males, young adult Iowans and those with less than a high school education (see Table 15.2). After a 6.0% increase in current e-cigarette use was reported among or 18-24 years olds from 2017 to 2018 there was another 6.9% increase from 2018 to 2019. The increase over the previous year is not statistically significant, but the change from 2017 to 2019 is. Notably, 64,043 Iowans between the ages of 18 and 24 years old currently use e-cigarettes or other electronic vaping products. This rate has more than doubled since 2017. People in this age group have significantly higher rates than those aged 25 and older. In terms of education, those with less than a high school diploma currently use e-cigarettes at higher rates than those with a college degree (7.6% vs. 2.0% respectively).

FACT

The rate of current e-cigarette use for 18-24 year olds has more than doubled since 2017.

Table 15.2: Percentage of E-Cigarette Users in Iowa, 2019

Demographic Groups	Prevalence Rate (%)	C.I. (95%)
Total	6.1	(5.5-6.8)
Sex		
Male	7.4	(6.4-8.5)
Female	4.9	(4.0-5.8)
Race/Ethnicity		
White/Non-Hispanic	5.9	(5.2-6.6)
Black/Non-Hispanic	6.1	(1.5-10.6)
Other/Non-Hispanic	11.0	(5.3-16.6)
Hispanic	6.6	(3.7-9.5)
Age Group		
18-24	23.5	(19.8-27.3)
25-34	7.8	(6.0-9.6)
35-44	5.6	(3.9-7.2)
45-54	3.2	(2.0-4.3)
55-64	2.4	(1.6-3.3)
65+	0.6	(0.2-0.9)
Education		
Less Than H.S.	7.6	(4.3-10.9)
H.S. or G.E.D.	8.2	(6.8-9.6)
Some Post-H.S.	7.2	(5.9-8.4)
College Graduate	2.0	(1.4-2.7)
Household Income		
Less than $15,000	9.0	(5.5-12.5)
$15,000- 24,999	7.7	(5.3-10.2)
$25,000- 34,999	7.8	(5.1-10.4)
$35,000- 49,999	6.3	(4.5-8.0)
$50,000- 74,999	6.9	(5.1-8.8)
$75,000+	4.5	(3.5-5.6)

Figure 15.2 depicts the overall slight downward trend in current cigarette smoking from 2012 to 2019 for all ages. Adult Iowans who are 18 to 24 years of age have tended to have lower current cigarette smoking rates than those 25 to 34 years of age, and in 2019, we observed the lowest reported rates within each age group since 2012. In the same figure, we also see the emerging trend of youth e-cigarette/vaping product use, with the largest upward trend occurring in use among 18-24 year olds at a rapid rate. The percentage of youth aged 18 to 24 who are current e-cigarette/vaping product users has doubled since 2017 and tripled since 2016. We continue to see that a higher percentage of youth aged 18-24 are currently using e-cigarettes/vaping products than regular cigarettes. Iowans aged 25-34 showed decreases in both cigarette and e-cigarette use from 2018 to 2019, but these Iowans continue to use cigarettes at much higher rates than they use e-cigarettes.

To assess use of other tobacco products besides cigarettes, all respondents were asked how often they currently use chewing tobacco, snuff or snus. In 2019, 4.4% indicated that they used either chewing tobacco, snuff or snus every day or some days. This was a slight decrease from the rate in 2018 (5.3%).

In 2019, 13.2% of adult Iowans had ever tried smoking tobacco in a water pipe or hookah, and 3.3% (9,027 adult Iowans) indicating smoking tobacco using this method every day or some days. This was a much higher rate than what was reported in 2018, when only 0.1% of adult Iowans currently used hookah. Other tobacco products used every day or some days by Iowans were cigars (3.9%) and a pipe (1.0%).

Of smokers who had seen a doctor in the past year, 71.4% of them reported that the doctor had advised them to quit smoking. The most common form of assistance offered by doctors was to recommend or prescribe a medicine to help with smoking cessation (33.2%).

FACT

E-cigarette use among 18-24 year olds has tripled since 2016.

Comparison to other states

Across all states and District of Columbia, smoking prevalence ranged from a low of 7.9% to a high of 25.8%. Iowa's current smoking rate of 16.4% was slightly higher than the national median of 16.0% for all states. Regionally, the Midwest had the highest smoking rates in the country, with 22.2% of adults being current smokers (Centers for Disease Control and Prevention, 2019).

Health Objectives for Iowa and the nation

As a nation, smoking rates continue to decline, with the national rate in 2019 being 14%. However with 34 million adult Americans still currently smoking, the Healthy People 2020 goal to reduce the percentage of smokers to 12.0% has still not been achieved. As a state, the current smoking prevalence of 16.4% in Iowa is still missing the mark for both the Healthy People 2020 target and the Healthy Iowans goal of reducing the state cigarette smoking rate to 15.0%. In 2019, Iowa fell far short of the Healthy People 2020 goal of 80.0% of current smokers attempt to quit in the past year with a rate of 51.6%, which, compared to the rate in 2018 is moving in the opposite direction of achieving this goal. Neither the Healthy People 2020 nor the Healthy Iowans objectives have documented specific goals to reduce the number of current e-cigarette users. A policy-focused objective for Healthy Iowans directs attention to the emerging trend of youth e-cigarette and vaping use: "Continue to follow and support legislation at the state and federal level that will control tobacco and nicotine use, especially monitoring vapor product use" (Iowa Department of Public Health, 2019). The state and nation should continue to fight the upward trend in e-cigarette use in young people especially.

References
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FACT

Cigarette smoking is the leading cause of preventable disease and death in the United States, accounting for more than 480,000, or every 1 in 5, deaths every year.

Background

In the United States, alcohol is the top mind-altering substance used (American Addition Centers, 2020). The National Institute of Alcohol Abuse and Alcoholism (NIAAA) defines binge drinking as a pattern of drinking that brings a person's blood alcohol concentration (BAC) to 0.08 grams% or above. This typically happens when men consume 5 or more drinks or women consume 4 or more drinks within about 2 hours (2021). The Substance Abuse and Mental Health Services Administration (SAMHSA) defines binge drinking as 5 or more alcoholic drinks for males or 4 or more alcoholic drinks for females on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least 1 day in the past month (NIAAA, 2021). Heavy drinking is defined by the SAMHSA as binge drinking on 5 or more days in the past month. The Centers for Disease Control and Prevention describes excessive drinking in the United States as engaging in binge drinking, heavy drinking and any drinking by women who are pregnant or under the legal drinking age of 21 (2021).

Millions of adults in the United States consume alcohol responsibly. Although the vast majority of people who drink excessively would not be expected to meet the clinical diagnostic criteria for having a severe alcohol use disorder (AUD; including alcohol dependence or alcoholism), there were still 14.4 million U.S. adults who had an AUD in 2018. Drinking too much costs the U.S. $249 billion in 2010, from loss of workplace productivity, health care costs and criminal justice expenditures (American Addiction Centers, 2020; Centers for Disease Control and Prevention, 2019; Centers for Disease Control and Prevention, 2021); 75.0% of these costs are related to binge drinking (National Institute on Alcohol Abuse and Alcoholism, 2021).

Alcohol use changes the way you think and feel as well as influences your actions. Drinking lowers inhibitory control and disrupts decision-making abilities, rational thought and attention, increasing the risk of death from automobile crashes as well as recreational and on-the-job injuries (American Addition Centers, 2020).There are both short-term and long-term health consequences that result from excessive alcohol use. These include impaired driving that can lead to injuries from motor vehicle crashes, violence, alcohol poisoning and risky sexual behaviors that can lead to unintended pregnancy or sexually transmitted diseases.

Chronic alcohol use affects every organ and system of the body. The long-term health consequences of drinking excessive amounts of alcohol over time include fetal alcohol syndrome, liver disease, cardiomyopathy, pancreatitis as well as an increased risk for certain cancers. Mental health can be affected negatively by drinking excessively, learning and memory functions can be impaired, and social problems may surface in the forms of lost productivity, trouble in family systems and job loss (Centers for Disease Control and Prevention, 2021).

Alcohol Consumption Results

The BRFSS survey defines a standard drink as one 12-ounce beer, one 5-ounce glass of wine, or a drink with one shot of hard liquor. In 2019, 58.9% of Iowans reported that they had at least one drink of alcohol in the past 30 days. On the days when they drank, 36.5% had an average of only one drink. About 12.5% reported drinking five or more drinks per day on the average, a lower rate than what was reported in 2018.

FACT

58.9% of Iowans reported that they had at least one drink of alcohol in the past **30** days.

Table 16.1: Binge Drinking and Heavy Drinking Among Iowa Adults, 2019

Demographic Group	Binge Drinking		Heavy Drinking	
	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)
Total	21.6	(20.6-2.6)	6.7	(6.1-7.3)
Sex				
Male	27.0	(25.4-28.5)	7.9	(7.0-8.9)
Female	16.5	(15.1-17.8)	5.5	(4.7-6.3)
Race/Ethnicity				
White/Non-Hisp.	21.9	(20.9-23.0)	7.0	(6.3-7.6)
Black/Non-Hisp.	23.6	(15.9-31.2)	7.6	(2.9-12.3)
Other/Non-Hisp.	17.7	(11.6-23.8)	1.9	(0.0-3.9)
Hispanic	19.6	(15.4-23.8)	4.6	(2.3-7.0)
Age Group				
18 - 24	33.1	(29.3-36.9)	6.9	(4.9-8.9)
25 - 34	33.2	(30.1-36.3)	8.1	(6.3-9.8)
35 - 44	29.2	(26.3-32.1)	8.6	(6.8-10.4)
45 - 54	22.9	(20.4-25.4)	8.0	(6.4-9.6)
55 - 64	15.0	(13.1-16.8)	7.1	(5.8-8.4)
65-74	9.1	(7.5-10.7)	4.5	(3.3-5.6)
75+	2.7	(1.6-3.8)	1.9	(1.0-2.8)
Education				
Less than H.S.	13.8	(10.3-17.3)	5.2	(3.0-7.5)
H.S. or G.E.D.	20.0	(18.2-21.9)	7.2	(6.0-8.3)
Some Post-H.S.	25.1	(23.2-27.0)	7.2	(6.1-8.3)
College Graduate	21.3	(19.6-23.0)	6.0	(5.0-6.9)
Household Income				
Less than $15,000	15.5	(11.6-19.3)	5.3	(2.8-7.8)
$15,000- 24,999	18.2	(15.2-21.2)	6.8	(4.8-8.7)
$25,000- 34,999	17.4	(14.1-20.7)	4.5	(2.8-6.3)
$35,000- 49,999	19.7	(16.9-22.5)	6.8	(5.0-8.5)
$50,000- 74,999	22.5	(19.9-25.0)	6.6	(5.1-8.1)
$75,000+	28.8	(26.9-30.7)	8.6	(7.4-9.8)

FACT

Males had higher levels of heavy drinking and binge drinking than females.

In our analysis, heavy drinking was defined as an average of greater than 14 drinks per week for men and 7 drinks per week for women. According to this definition, 6.7%, or 154,105, of adult Iowans were heavy drinkers (see Table 16.1). After the highest rate of heavy drinking was reported in 2018 (8.2%), the prevalence rate in 2019 of 6.7% was the lowest since 2016. In regards to binge drinking, after hitting a high of 22.6% in 2018, 2019's rate was 1% lower at 21.6% (see Table 16.1, Figure 16.1).

Heavy drinking among men is significantly higher than among women. In 2019, 7.9% of men were considered to be heavy drinkers, while 5.5% of women reported being heavy drinkers. Those aged 75 years of age or older reported the lowest rate of heavy drinking, while those aged 35 to 44 and those with a household annual income of $75,000 or more had the highest rates (8.6%; see Table 16.1).

Among adult Iowans, 21.6% engaged in at least one binge drinking episode in the 30 days prior to participating in the survey. In 2019, younger Iowans, those with higher education, most notably those with some college education, and adults with higher incomes tended to engage in binge drinking (see Table 16.1). Many more males binge drank than females: 27.0% and 16.5% respectively. Men binged more than women at all ages. The highest prevalence rates of binge drinking occurred between the ages of 25 and 34 for males (39.8%) and then decreased with age to 2.8% for those 75 years old and older (see Figure 16.2). On the other hand, females had the highest prevalence of binge drinking between the ages of 18 and 24 (31.2%) and then decreased their binge drinking over time.

Figure 16.1: Binge and Heavy Drinking by Year, 2012 – 2019

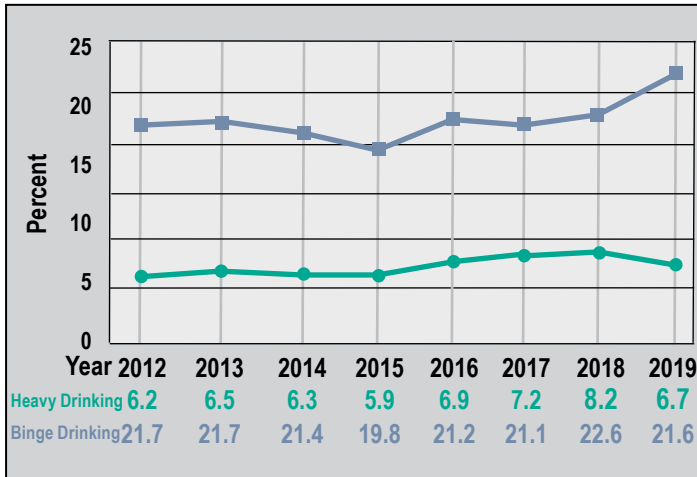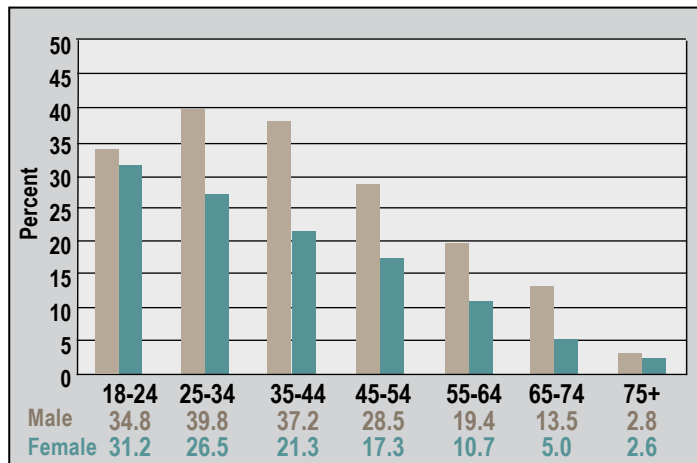| Year	2012	2013	2014	2015	2016	2017	2018	2019
Heavy Drinking	6.2	6.5	6.3	5.9	6.9	7.2	8.2	6.7
Binge Drinking	21.7	21.7	21.4	19.8	21.2	21.1	22.6	21.6

Figure 16.2: Binge Drinking among Iowa Adults by Age and Sex, 2019

	18-24	25-34	35-44	45-54	55-64	65-74	75+
Male	34.8	39.8	37.2	28.5	19.4	13.5	2.8
Female	31.2	26.5	21.3	17.3	10.7	5.0	2.6

Comparison with Other States

In 2019, rates of binge drinking in the 50 states and the District of Columbia ranged from 11.2% to 24.9% with a median of 16.8%, all of which are higher than what was reported in 2018. Iowa's prevalence rate of 21.6% is well above the national median. There were only three states, District of Columbia, North Dakota, and Wisconsin, with a higher prevalence of reported binge drinking than Iowa in 2019.

The prevalence of adults reporting heavy drinking in the 50 states and District of Columbia ranged from 4.2% to 9.4% in 2019. Iowa's rate of 6.7% is slightly above the national median of 6.5%. In 2018, Iowa had the 4th highest prevalence rate of heavy drinking, but in 2019, Iowa was no longer among even the top 10 states with the highest heavy drinking rates. In 2019, across the 50 states and the District of Columbia, an average of 25.8% of people aged 18 and older reported binge drinking in the past month, whereas an average of 6.3% reported having engaged in heavy alcohol use in the past 30 days (National Institute of Alcohol Abuse and Alcoholism, 2021). The Healthy People 2020 target of reducing the proportion of persons aged 18 or older engaging in binge drinking during the past 30 days to 24.2% was met by Iowa, which reported a prevalence rate of 21.6%.

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FACT

Iowa had the 4th highest level of binge drinking in the nation.

Background

The World Health Organization's *International Classification of Functioning, Disability and Health* (2001) defines disability as an umbrella term for impairments, activity limitations and participation restrictions. Disability is the interaction between individuals with a health condition (e.g. cerebral palsy, Down's syndrome or depression) and personal and environmental factors (e.g. negative attitudes, inaccessible transportation and public buildings and limited social supports). Impairment is defined as "any loss or abnormality of psychological, physiological, or anatomical structure or function" (World Health Organization, 2001).

Chronic physical, mental, and emotional conditions can limit the ability of adults to carry out important activities such as working and doing everyday household chores. According to data from the 2016 Behavioral Risk Factor Surveillance System, one in four people in the United States had a disability (26.0%; 61 million people) that prevented or limited their ability in some way (Centers for Disease Control and Prevention, 2020).

The number of people living with a disability is on the rise, in part by the aging population and an increase in chronic health conditions around the world. Currently, if services for those with a disability are available, they tend to lack the necessary resources and quality required to provide adequate care and relief. There is a need to increase disability services in primary healthcare settings, and more specifically in rehabilitation interventions. (World Health Organization, 2020). Having a disability is not necessarily a barrier to good general health in unrelated areas.

Many disabled Americans use Assistive Technology Devices (ATDs) to accommodate mobility impairments and other sensory and mental impairments. These can allow a person with a disability to work and otherwise live an independent life.

Disability Results

The most recent standard of determining disability in adult Iowans requires a "yes" response to at least one of the following six items. In 2019, 7.6% of Iowans said they were deaf or had trouble hearing; 3.0% said they were blind; 9.6% said they had serious difficulty concentrating, remembering, or making decisions; 11.0% said they had serious difficulty

walking or climbing stairs; 2.7% said they had difficulty dressing or bathing; 5.0% said they had difficulty doing errands alone such as visiting a doctor's office or shopping because of a physical, mental or emotional condition. Using the answers to these questions, the "new" method for determining disability produced a rate of 24.1%, which is the highest rate since 2017 (24.5%; see Figure 17.1).

Figure 17.1: Adults with Disability in Iowa Trend, 2016 – 2019 New Method

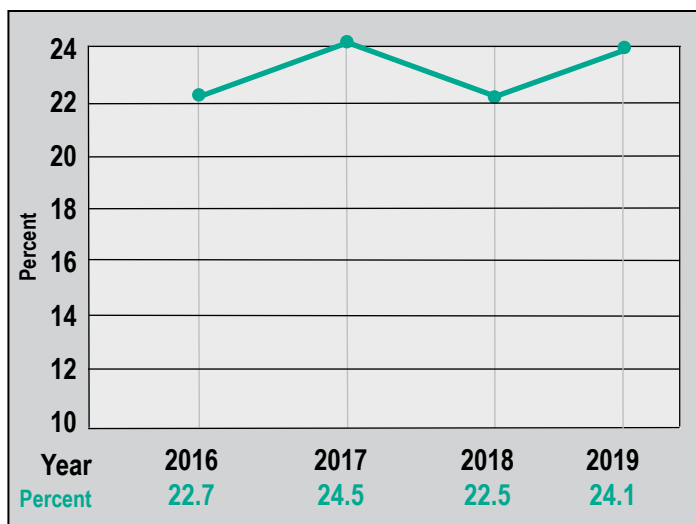| Year	2016	2017	2018	2019
Percent	22.7	24.5	22.5	24.1

Table 17.1 shows the results of the most recent disability determination method. Older people, people with less education, and people with lower household incomes reported higher percentages of disability. White Non-Hispanics reported a higher prevalence rate than Black Non-Hispanics. Many disabled people are unable to work due to their disability. Over half of those who reported disability had incomes of less than $15,000 (50.2%). The lowest prevalence rate of disability was reported among those with an annual household income of $75,000 or more.

Arthritis is the leading cause of work disability in the United States. Arthritis is the name given to a group of over 100 different rheumatic diseases and conditions that result in pain and reduction of functionality in and around the joints. The most common are osteoarthritis, rheumatoid arthritis, lupus, fibromyalgia, and gout (Centers for Disease Control and Prevention, 2020). Arthritis may be caused by a wearing down of cartilage, a change in bone composition, or inflammation in the joints. Over 54 million adults in the United States have arthritis (23.0%; Centers for Disease Control and Prevention, 2020).

In 2019, a doctor had told 25.7% of Iowans that they had some form of arthritis. Rates of reported arthritis declined from 2014 to 2017 but have been increasing ever since (see Figure 17.2). The percentage of adult Iowans reporting arthritis is higher than the percentage reporting disability indicating not all people diagnosed with arthritis find it to be a limitation.

Table 17.1: Percent Reporting Being Disabled, 2019

Demographic Groups	Prevelance Rate (%)	C.I. (95%)
Total	24.1	(23.1-25.0)
Sex		
Male	24.0	(22.6-25.4)
Female	24.1	(22.7-25.5)
Race/Ethnicity		
White/Non-Hispanic	24.1	(23.1-25.2)
Black/Non-Hispanic	16.1	(10.4-21.9)
Other/Non-Hispanic	24.9	(18.5-31.3)
Hispanic	24.6	(20.0-29.2)
Age Group		
18-24	20.5	(17.2-23.9)
25-34	15.3	(12.9-17.6)
35-44	15.3	(13.0-17.6)
45-54	17.7	(15.5-20.0)
55-64	28.3	(26.0-30.6)
65-74	32.2	(29.7-34.6)
75+	48.9	(45.7-52.0)
Education		
Less Than H.S.	42.0	(37.1-46.8)
H.S. or G.E.D.	30.0	(28.2-31.9)
Some Post-H.S.	23.0	(21.3-24.7)
College Graduate	12.7	(11.5-13.9)
Household Income		
Less than $15,000	50.2	(45.1-55.4)
$15,000- 24,999	42.8	(39.3-46.3)
$25,000- 34,999	29.7	(26.0-33.3)
$35,000- 49,999	27.2	(24.3-30.2)
$50,000- 74,999	18.3	(16.1-20.5)
$75,000+	11.5	(10.2-12.8)

FACT

Not all people diagnosed with arthritis find it to be a disability.

A statistically higher percentage of women compared to men reported having arthritis. The prevalence decreased with greater education and income. Fewer racial and ethnic minorities reported having arthritis compared to Non-Hispanic Whites. Age had the strongest association. The demographic group reporting the highest prevalence of arthritis was adult Iowans age 75 years and older (50.8%; see Table 17.2 and Figure 17.3). The group with the lowest prevalence was people age 18 to 24 years old (5.7%), though has continued to rise over the last few years. For example, only 1.5% of 18-24 year olds reported having arthritis in 2016.

Table 17.2: Percent Having Been Told by a Doctor They Had Some Form of Arthritis, 2019
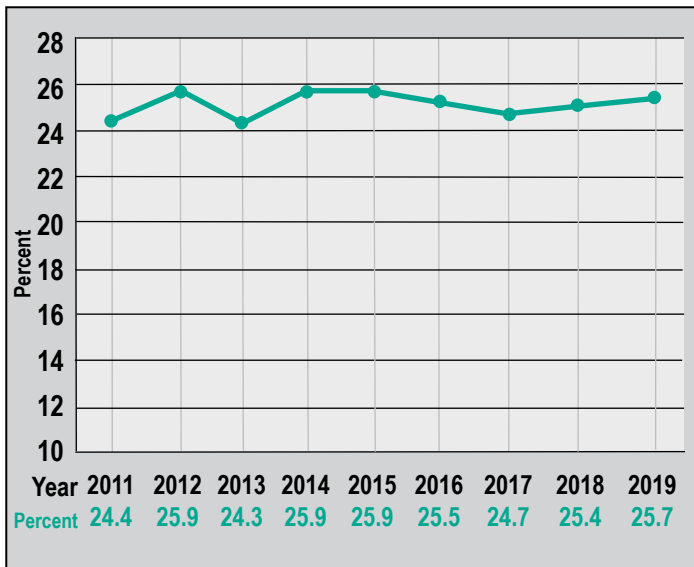
Demographic Groups	Told by doctor you have Arthritis	
	%	C.I. (95%)
Total	25.7	(24.7-26.6)
Sex		
Male	22.2	(20.9-23.5)
Female	29.1	(27.7-30.4)
Race/Ethnicity		
White/Non-Hispanic	27.4	(26.4-28.4)
Black/Non-Hispanic	15.5	(10.3-20.8)
Other/ Non-Hispanic	16.8	(11.7-21.9)
Hispanic	10.1	(7.1-13.1)
Age Group		
18-24	5.7	(3.8-7.7)
25-34	6.6	(5.1-8.2)
35-44	15.0	(12.8-17.1)
45-54	25.3	(22.8-27.8)
55-64	39.2	(36.8-41.7)
65-74	46.7	(44.1-49.2)
75+	50.8	(47.7-53.9)
Education		
Less Than H.S.	28.2	(24.0-32.4)
H.S. or G.E.D.	28.5	(26.7-30.2)
Some Post-H.S.	26.0	(24.4-27.7)
College Graduate	21.1	(19.6-22.6)
Household Income		
<$15,000	34.0	(29.4-38.5)
$15,000- 24,999	32.5	(29.3-35.6)
$25,000- 34,999	27.7	(24.2-31.1)
$35,000- 49,999	29.3	(26.5-32.2)
$50,000- 74,999	25.7	(23.4-28.0)
$75,000+	19.5	(18.0-21.0)

Figure 17.2: Percent of Iowans Diagnosed with Arthritis by Year, 2011 – 2019

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019
Percent	24.4	25.9	24.3	25.9	25.9	25.5	24.7	25.4	25.7

Comparison with Other States

The percentage of people in the 50 states and District of Columbia reporting being diagnosed with arthritis ranged from 17.2% to 41.3%. The median of all states was 26.0%. Iowa was slightly better than the median at 25.7%.

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2. World Health Organization (2020). Disability and Health. Available at https://www.who.int/news-room/fact-sheets/detail/disability-and-health.
3. World Health Organization. (2001). International Classification of Functioning, Disability and Health (ICF). Geneva, Switzerland.

Figure 17.3: Percent of Iowans with Arthritis by Age, 2019

Ages	18-24	25-34	35-44	45-54	55-64	65-74	75+
Percent	4.0	7.7	13.5	25.9	36.4	48.9	53.3

FACT

Rates of having arthritis have increased since 2017.

Immunizations

Background

Influenza, or the flu, is a contagious respiratory illness caused by viruses that infect the nose, throat and lungs. It can cause mild to severe illness, and at times can lead to death. The best way to prevent the flu is by getting a flu vaccination each year (Centers for Disease Control and Prevention, 2021).

Influenza can vary greatly from year to year in the severity of its impact. For instance, the seasonal influenza primarily causes more of a problem for the elderly, while the 2009 H1N1 pandemic affected more children, young and middle-aged adults (Centers for Disease Control and Prevention, 2019). For healthy children and adults, influenza is typically a moderately severe illness. For unhealthy or elderly people, influenza can be very dangerous. Adults 65 years old and older who contract influenza are much more likely to have serious complications from this illness, which can affect their health and independence.

Influenza can be prevented with the influenza vaccine. This vaccine is produced each year so that it can be effective against influenza viruses that are expected to cause illness that year. A yearly influenza vaccination has been reported to lower the chances of individuals needing to go to the doctor for the flu by 40.0% to 60.0%. The vaccine may be taken through several methods, but the most common is a shot in the upper arm muscle. The best time to receive the influenza vaccine is soon after the vaccine becomes available in the fall of each year. The Centers for Disease Control and Prevention (2020) recommends that people get vaccinated by the end of October of each year, but one can continue receiving the vaccine into January or later of the following year. The recommendation by the Centers for Disease Control and Prevention is for everyone in the U.S. from six months of age and older to get the seasonal influenza vaccine. There are different vaccine options, and one should consult a doctor or healthcare professional for the most appropriate one based on health status and age (Centers for Disease Control and Prevention, 2020).

Influenza is a very serious illness for anyone at high risk. Certain diseases that place people at high risk include:

- Chronic lung disease such as asthma, emphysema, chronic bronchitis, tuberculosis or cystic fibrosis,
- Heart disease,
- Diabetes or other chronic metabolic disorders,
- Severe anemia,
- Chronic kidney disease, or
- Diseases or treatments that depress immunity.

Some of the symptoms associated with influenza are fever, chills, coughing, weakness, muscle aches and pains, sore throat or headache (Centers for Disease Control and Prevention, 2020).

Pneumonia is a lung disease caused by bacteria, viruses, and other infectious agents such as fungi. Pneumonia is frequently a complication of influenza. In 2017, three million people in the United States were diagnosed with pneumonia in an emergency department, and around 50,000 people died from the disease (Centers for Disease Control and Prevention, 2020). In 2019, for all Americans, as well as those specifically aged 65 and older, influenza and pneumonia combined fell from the eighth leading cause of death to the ninth leading cause of death (Centers for Disease Control and Prevention, 2020). Influenza and pneumonia together resulted in 585 deaths in Iowa in 2019 (Centers for Disease Control and Prevention, 2021).

The Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices (ACIP) recommends that persons aged 65 years old or older receive the pneumococcal polysaccharide vaccine at least once in their lifetime. A second vaccine (pneumococcal conjugate vaccine, typically first administered when children are younger than 2 years of age) is now also recommended to follow the first for added protection, but people should consult with their doctor or healthcare provider for which combination is best based on age, previous vaccinations, and health status (Centers for Disease Control and Prevention, 2020). People at an increased risk for pneumococcal disease are those with chronic illnesses, such as diseases of the heart, liver, kidney or lung as well as diabetes and alcoholism, those with conditions that result in weakened immune system, such as HIV/AIDS and cancer, those with cochlear implants or cerebrospinal fluid leaks and those who engage in cigarette smoking (Centers for Disease Control and Prevention, 2020).
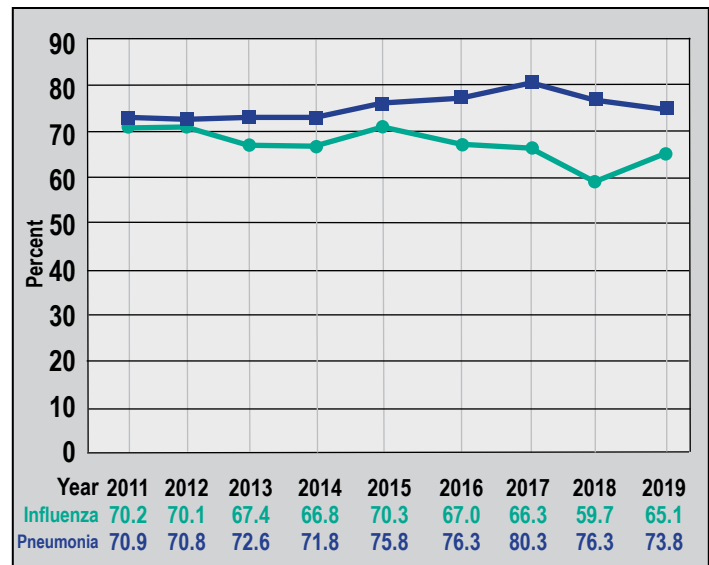
Immunization Results

In 2019, 65.1% of Iowans age 65 and over reported having a flu shot in the past 12 months. From 2015 to 2018, there was a downward trend in flu vaccinations among those 65 years and older. This trend reversed in 2019, and a higher percentage of flu vaccinations was reported for those 65 years of age and older (see Figure 18.1).

Among all adults, 48.3% had a flu immunization in the past 12 months, which is a significant increase in the percentage reported in 2018 (40.6%). Females, older people, people with more education, and people with higher household incomes reported higher prevalence rates of having a flu immunization in the past year. In 2018, the lowest percentage was found among 18-24 year olds (26.3%), but the percentage for this age group climbed to 40.0% in 2019, which was a significant increase. The lowest percentage in 2019 was reported for Non-Hispanic Black Iowans (34.4%), while the highest was for those age 75 and older (67.4%; see Table 18.1).

In 2019, 73.8% of Iowans age 65 and over reported ever having a pneumonia vaccination. This continues the downward trend observed since 2017 (see Figure 18.1).

Among all adults, 37.6% had ever received a pneumonia vaccination, which was a higher reported figure than in 2018. Older people reported the highest rates of having a vaccination in their lifetime (79.8% for 75+ year olds; see Table 19.1). The prevalence rate for 18-24 year olds ever receiving the pneumonia vaccination also increased significantly from 30.3% in 2018 to 41.9% in 2019, which was a similar trend that was observed for the flu immunization for this age group. Middle-aged adult Iowans reported the lowest prevalence rates of receiving a pneumonia vaccination. Since vaccination is only recommended for those age 65 years and older except under special conditions (those of younger ages who are at high risk for pneumonia), this finding is consistent with current vaccination recommendations. More females than males had ever received a pneumonia vaccination.

Figure 18.1: Flu & Pneumonia Immunizations by Year, 2011 – 2019, Age >= 65

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019
Influenza	70.2	70.1	67.4	66.8	70.3	67.0	66.3	59.7	65.1
Pneumonia	70.9	70.8	72.6	71.8	75.8	76.3	80.3	76.3	73.8

FACT

In 2018, about **1** out of **4** 18-24 year olds had received a flu vaccine. In 2019, **2** out of **5** had received one.

Table 18.1: Percentage of Influenza and Pneumonia Immunizations in Adult Iowans, 2019

Demographic Groups	Influenza		Pneumonia	
	%	C.I. (95%)	%	C.I. (95%)
Total	48.2	(47.1-49.5)	37.6	(36.4-38.8)
Sex				
Male	41.3	(39.6-43.0)	33.9	(32.2-35.6)
Female	55.0	(53.3-56.7)	41.0	(39.3-42.7)
Race/Ethnicity				
White/Non-Hisp.	49.4	(48.2-50.7)	39.0	(37.8-40.3)
Black/Non-Hisp.	34.4	(26.3-42.5)	26.2	(18.2-34.2)
Other/Non-Hisp.	44.1	(35.9-52.2)	29.2	(20.6-37.8)
Hispanic	41.3	(35.9-46.6)	23.8	(18.8-28.7)
Age Group				
18-24	40.0	(35.9-44.2)	41.9	(36.8-46.9)
25-34	39.8	(36.5-43.1)	19.4	(16.4-22.4)
35-44	40.9	(37.8-44.0)	17.4	(14.8-20.0)
45-54	42.9	(39.9-45.9)	18.1	(15.7-20.5)
55-64	51.1	(48.5-53.7)	31.1	(28.7-33.5)
65-74	63.4	(60.8-66.0)	69.4	(66.8-71.9)
75+	67.4	(64.3-70.5)	79.8	(77.1-82.5)
Education				
Less than H.S.	36.8	(31.8-41.7)	33.0	(28.0-37.9)
H.S. or G.E.D.	42.7	(40.5-44.8)	42.1	(39.9-44.3)
Some Post-H.S.	47.9	(45.8-50.0)	37.6	(35.5-39.8)
College Graduate	58.8	(56.8-60.8)	33.6	(31.7-35.6)
Household Income				
Less than $15,000	46.0	(40.7-51.3)	47.2	(41.6-52.8)
$15,000- 24,999	45.9	(42.3-49.5)	44.7	(40.9-48.4)
$25,000- 34,999	44.4	(40.2-48.6)	40.2	(36.1-44.4)
$35,000- 49,999	43.7	(40.4-47.1)	40.4	(37.0-43.9)
$50,000- 74,999	45.7	(42.8-48.6)	36.0	(33.1-38.9)
$75,000+	53.2	(51.1-55.3)	28.8	(26.9-30.8)

Adult Iowans who reported a lower household income had higher rates of ever receiving the pneumonia vaccine than those in the higher household income categories. For example, 28.8% of people with a household income of $75,000 or more had ever received the pneumonia vaccine, while 47.2% of those with a household income of less than $15,000 had received the vaccine. The relation with education and income is the opposite of most health risk measures, though is a similar trend as what was observed in recent years of Iowa BRFSS data.

In 2019, the relationship between chronic conditions that could increase the risk of getting the flu or pneumonia and receiving the respective vaccinations was examined. Of all respondents ever told they had diabetes, asthma, COPD or kidney disease; 55.3% had a flu vaccination in the past 12 months, compared to 44.7% who had a chronic condition and had not received a flu vaccination. Of respondents ever told that they had one or more of the chronic health conditions above, a higher percentage had received a pneumonia vaccine in their lifetime (56.9%) than those with at least one chronic condition without a history of a pneumonia vaccine (44.1%). This difference was significant, resulting in a higher percentage of people with chronic condition(s) receiving the pneumonia vaccine, which is in line with what the Centers for Disease Control and Prevention recommends, in terms of people most at risk for pneumonia.

Comparison with Other States

The median percentage of the population aged 65 and over who have had a flu shot in the past 12 months from all the states and the District of Columbia was 64.0% in 2019. The range was from 55.0% to 71.1%. The prevalence in Iowa was 65.1%, which was higher than the national median.

The national median percentage of the population age 65 years old and older who had ever received a pneumonia vaccination was 73.3%. The range was from 64.1% to 78.3%. Iowa's rate for adults 65 years of age or older (73.8%) is above the median.

Health Objectives for Iowa and the Nation

The Healthy People 2020 and Healthy Iowans, goals for having a flu shot in the past 12 months and ever having a pneumonia vaccination for people age 65 and over are both 90%. Although much higher than the nation as a whole, Iowa's 2018 rates of 65.1% percent for having a flu vaccination and 73.8% for ever having a pneumonia vaccination are a long way from meeting these targets. The Healthy People 2020 goal for flu immunization of people age 18 to 64 is 80.0%. Iowa misses this by an even greater amount having a flu immunization prevalence rate of only 43.2%. The trend, as of 2019, is moving in the right direction.

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FACT

The rates of flu and pneumonia vaccinations for Iowans are above the national medians, but still fall short of national and state targets.

Background

HIV stands for human immunodeficiency virus. This is the virus that causes acquired immunodeficiency syndrome (AIDS). HIV is different from most other viruses, because it attacks the immune system. The immune system gives our bodies the ability to fight infections. HIV finds and destroys a type of white blood cell that the immune system must have to fight disease. AIDS is the final stage of HIV infection. It can take years for a person infected with HIV, even without treatment, to reach this stage. Having AIDS means that the virus has weakened the immune system to the point at which the body has a difficult time fighting infections (Centers for Disease Control and Prevention, 2020).

June 2019 marks 38 years since the HIV/AIDS epidemic, which was prompted by two cases of a rare form of pneumonia, first reported in the United States and later found to be HIV/AIDS (Centers for Disease Control and Prevention, 2011). Approximately 38 million individuals were living with HIV infection worldwide in 2019. About 1.2 million people in the United States were living with HIV at the end of 2018 (U.S. Department of Health and Human Services, 2020). About one in seven (14.0%) people are living with HIV but do not know they are infected. Not knowing puts them and others at risk.

In 2018, an estimated 39,968 people were diagnosed with HIV infection in the United States. The number of new HIV diagnoses has decreased 26% from 2005 to 2018. Because HIV testing has remained stable or increased in recent years, this decrease in new diagnoses suggests a positive response and true decline in new infections. The decrease may be due to targeted HIV prevention efforts. This being said, progress has been experienced unevenly, and diagnoses have increased among a few groups (Centers for Disease Control and Prevention, 2020; U.S. Department of Health and Human Services, 2020). Data suggests that HIV prevention and treatment are not sufficiently reaching the populations that could most benefit from them.

Groups with the largest exposure include "men who have sex with men (MSM)", African Americans, Hispanics, transgender persons, injection drug users and those who reside in the South. Data must be utilized to ensure targeted prevention efforts to reach those in greatest need, with a primary focus on young African American and Hispanic men who identify as gay or bisexual, MSM, heterosexual persons and those who inject drugs (U.S. Department of Health and Human Services, 2020).

African American and Hispanic men continue to be over-represented among persons with HIV diagnoses when compared to the sizes of their populations in Iowa. For example, even though Non-Hispanic Blacks represent 4.0% of Iowa's population, they experienced 31.0% of the diagnoses in 2019; Hispanics represent 6.0% of the state's population, but experienced an 11.0% rate of HIV diagnoses in 2019 (Iowa Department of Public Health, 2020). It is important to keep in mind that Non-Hispanic Whites accounted for 85.0% of the state's population but only 49.0% of HIV diagnoses in 2019 and 60.0% of persons living with HIV/AIDS (Iowa Department of Public Health, 2020).

The highest prevalence rate ever recorded was in 2016 when 136 new Iowans were diagnosed with HIV/AIDS. Since 2016, there continues to be a decrease in HIV/AIDS prevalence in Iowa. As of December 31, 2019, there were 2,938 persons living with HIV or AIDS who were Iowa residents at the time of their diagnosis. There were 98 new diagnoses during 2019, which is a lower number of new diagnoses than in 2018 (116), 2017 (125) and in 2016 (Iowa Department of Public Health, 2020).

The lifetime costs of health care associated with HIV have grown considerably. Currently, the lifetime treatment cost of a single HIV infection is estimated at $379,668 in 2010 dollars (Centers for Disease Control and Prevention, 2019).

The CDC recommends routine HIV testing in health care settings. People should get tested so they can receive treatment and not infect others. By being tested, people can become aware of their status and if diagnosed, can start receiving treatment and still remain healthy for many years down the road. If it is a negative diagnosis, individuals can further make decisions regarding sex, the use of drugs and health care regarding protection from getting HIV (Centers for Disease Control and Prevention, 2020). Treatment for HIV is better than ever before.

FACT

Getting routinely tested for HIV is recommended by the CDC.

The U.S. Department of Health and Human Services (HHS) has set the goal to reach 75.0% reduction in new HIV infections by 2025 and 90.0% reduction by 2030 as a result of their launch of "Ending the HIV Epidemic: A Plan for America". This initiative that was released in 2019 focuses specifically on areas where HIV transmission has occurred most frequently. Currently, Iowa nor its counties have been listed as hot spot areas, according to HHS (U.S. Department of Health and Human Services, 2020). This plan incorporates the strategies of diagnosis, treatment, prevention and response.

HIV/AIDS Results

In 2019, 30.2% of all adult Iowans reported ever being tested for HIV, not including part of a blood donation. After the lowest rate since 2014 was reported in 2018, the rate for 2019 was the highest rate reported in Iowa over the last 9 years (see Figure 20.1).

Females, those of minority race/ethnicity, adults between 25 and 54 years of age, and those with lower household incomes reported having been tested at higher rates. The largest proportion of respondents tested was among Non-Hispanic Blacks (63.5%). The smallest proportion reporting ever being tested were those age 75 years and older (5.8%; see Table 20.1). Compared to the rates by demographic groups in 2018, there were a handful of categories that experienced a significant increase in being tested: both males and females, Non-Hispanic Whites, 45-54 and 55-64 year olds, those who had obtained a high school diploma or G.E.D. or some post high school education, and those with a household income of at least $75,000.

There is an interaction between sex and age. Figure 20.2 shows that in younger people, many more women report ever being tested, but for adults age 45 and older, testing rates for males slightly surpass those of females.

FACT

Women under the age of 45 report being tested for HIV at a higher rate than men.

Table 19.1: Percentage of Iowans Tested for HIV/AIDS, 2019

Demographic Groups	Had HIV Test	
	%	C.I. (95%)
Total	30.2	(29.1-31.4)
Sex		
Male	28.0	(26.4-29.7)
Female	32.4	(30.7-34.0)
Race/Ethnicity		
Non-Hispanic White	28.2	(27.0-29.4)
Non-Hispanic Black	63.5	(54.9-72.1)
Non-Hispanic Other	41.0	(32.9-49.1)
Hispanic	38.2	(32.8-43.6)
Age Group		
18-24	27.6	(23.7-31.4)
25-34	43.0	(39.5-46.4)
35-44	47.8	(44.6-51.0)
45-54	37.3	(34.3-40.3)
55-64	24.4	(22.1-26.6)
65-74	14.8	(12.8-16.8)
75+	5.8	(4.3-7.3)
Education		
Less than H.S.	29.8	(25.0-34.7)
H.S. or G.E.D.	25.5	(23.5-27.5)
Some Post-H.S.	32.8	(30.7-34.9)
College Graduate	32.4	(30.4-34.4)
Household Income		
<$15,000	41.9	(36.5-47.4)
$15,000- 24,999	34.4	(30.7-38.0)
$25,000- 34,999	32.9	(28.7-37.1)
$35,000- 49,999	29.9	(26.6-33.2)
$50,000- 74,999	30.5	(27.7-33.4)
$75,000+	30.2	(28.2-32.2)

Comparison with Other States

In all 50 states and the District of Columbia the percentage of people who had a test for HIV ranged from 28.1% to 72.9%. The median percentage of people tested was 39.9%. Iowa had the second lowest rate of people tested for HIV across the 50 states and the District of Columbia. Utah was the only state with a lower percentage than Iowa's rate with 28.1% of people ever being tested for HIV.

Health Objectives for the Nation

Healthy People 2020 has the goal of 16.9% of people age 15 to 44 being tested for HIV in the past 12 months. Iowa had a rate of 10.6% for respondents age 18 to 44 tested within this time period, which is trending in the right direction, but still below the goal.

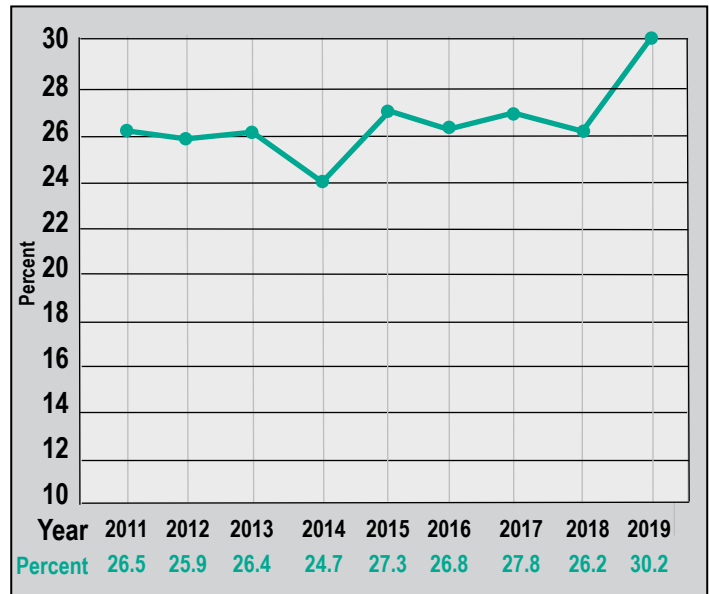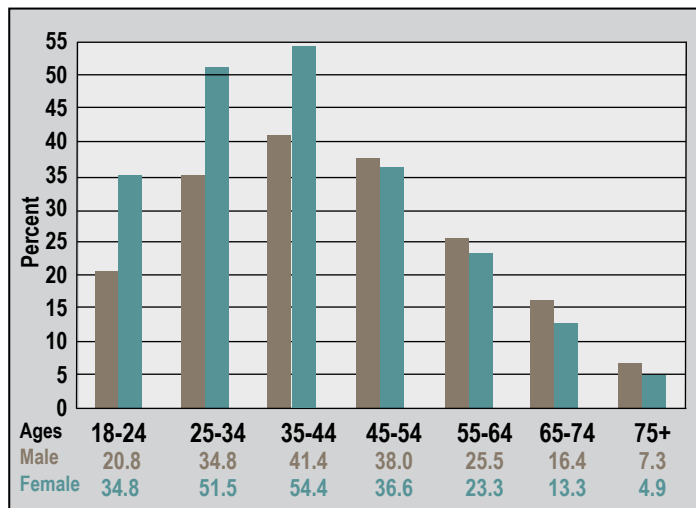**Figure 19.1: Iowans Having HIV Test by Year, 2011 – 2019**

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019
Percent	26.5	25.9	26.4	24.7	27.3	26.8	27.8	26.2	30.2

Figure 19.2: Percentage of Iowans Reporting Ever Being Tested for HIV by Age and Gender, 2019

Ages	18-24	25-34	35-44	45-54	55-64	65-74	75+
Male	20.8	34.8	41.4	38.0	25.5	16.4	7.3
Female	34.8	51.5	54.4	36.6	23.3	13.3	4.9

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FACT

In 2019, Iowa had the 2nd lowest HIV testing rate in the United States.

Background

Mental health and mental illness are two different things. Mental health includes our emotional, psychological and social well-being. It affects how we think, feel and act. It also helps determine how we handle stress, relate to others and make healthy choices (Centers for Disease Control and Prevention, 2018). Mental illness refers to conditions that affect a person's thinking, feeling, mood or behavior, such as depression, anxiety, bipolar disorder or schizophrenia (Centers for Disease Control and Prevention, 2018).

Physical health and mental health are inter-dependent. Poor physical health can lead to poor mental health, and poor mental health can lead to poor physical health. For example, mental illness, particularly depression, puts individuals at a higher risk for physical health problems such as stroke, type 2 diabetes and heart disease. Likewise, individuals who have chronic physical health conditions are at a higher risk for mental illness (Centers for Disease Control and Prevention, 2018). In 2019, 3.8% of adults in the U.S. with mental illness also had a substance use disorder, which is the equivalent of about 9.5 million individuals (National Alliance on Mental Illness, 2020). The number of U.S. adults with co-occurring mental illness and a substance use disorder increased by about 300,000 from 2018 to 2019, and 1.4 million since 2015 (National Alliance on Mental Illness, 2020).

Mental health and mental disorders have a significant impact on the total health-care system. In 2016, there were over 56.7 million visits to physician offices in which mental, behavioral or neurodevelopmental disorders were the primary diagnosis (Rui & Okeyode, 2019). The impact of mental illness is large. Mood disorders that include major depression, dysthymic disorder and bipolar disorder are the 3rd leading cause of hospitalization for U.S. adults aged 18-44. One out of every 25 U.S. adults has a condition called serious mental illness (SMI), in which individuals experience a mental illness or disorder in the past year "with serious functional impairment that substantially interferes with or limits one or more major life activities". Individuals living with SMI are at a higher risk for developing physical health problems like heart disease, diabetes and human immunodeficiency virus (HIV) and have a shorter lifespan than others (Centers for Disease Control and Prevention, 2018).

Adverse childhood experiences (ACEs) are stressful or traumatic events that occur in childhood (0-17 years), including abuse and neglect. They may also include household dysfunction such as witnessing domestic violence or growing up with family members who have substance use disorders (Centers for Disease Control and Prevention, 2019). Experiences people have in early childhood can have a lifelong effect on both physical and mental health. A look at these experiences can help to focus on people likely to need special attention (Anda & Felitti, 2014), but more research is needed to determine if and how the potential benefits of screening for ACEs outweigh the potential harms (Afifi & Asmundson, 2020; McLennan, McTavish, & MacMillan, 2020).
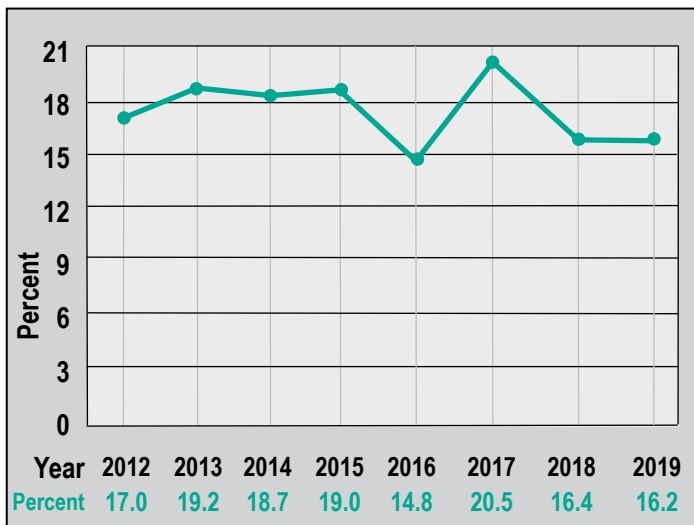
Research has found a strong relationship between adverse childhood experiences, substance use disorders and behavioral problems. When children are exposed to chronic stressful events, their neurodevelopment can be disrupted. As a result, the child's cognitive functioning or ability to cope with negative or disruptive emotions may be impaired. Over time, and often during adolescence, the child may adopt negative coping mechanisms, such as substance use or self-harm. Eventually, these unhealthy coping mechanisms can contribute to disease, disability, social problems and premature mortality.

Mental Health and Adverse Childhood Experiences Results

In 2019, 16.2% of adults reported that they had been told within their lifetime that they had a depressive disorder, including depression, major depression, dysthymia or minor depression about various chronic conditions. This is slightly lower than in 2018 when 16.4% reported having had a depressive disorder. There has been some variation in depression rates for Iowans in recent years, but in 2019, the rate was slightly lower than what was reported in 2018 (see Figure 20.1). The percentage of Iowans who had ever had a depressive disorder in 2019 (16.2%) was still much lower than the highest rate reported in 2017 of 20.5%.

Figure 20.1: Iowans Ever told they had Depression by Year, 2012 – 2019

Year	2012	2013	2014	2015	2016	2017	2018	2019
Percent	17.0	19.2	18.7	19.0	14.8	20.5	16.4	16.2

Adult women in Iowa reported experiencing depression at almost double the rate of men in 2019. Depression rates were higher among lower income individuals and lower in older Iowans. The highest prevalence was among those with annual household incomes less than $15,000 (31.7%). The lowest prevalence was among those age 75 years or more (7.8%; see Table 20.1).

In 2019, BRFSS contained questions that explore the early childhood experiences of respondents. Respondents were asked to recall experiences they had before they were 18 years old specifically surrounding childhood abuse and neglect as well as household dysfunction. This data is then used to assess the impact of these childhood experiences on health and well-being in adult years. Questions used in the BRFSS are adapted from the CDC-Kaiser Permanente ACE study conducted from 1995 to 1997.

Two modules were assessed in 2019: adverse childhood experiences (ACEs) and resilience. Rather than look at each question individually from these modules, a single score will be determined for each module based on all of the responses to the questions in that module.

ACEs look at a wide range of experiences from parents such as divorced, incarcerated, or drug abusing to physical, psychological or sexual abuse. This module contained 11 questions. For Iowans, 38.8% indicated no adverse child-hood experiences, 20.6% indicated one, 21.7% indicated two or three, 10.4% indicated four or five, and 8.6% indicated six

Table 20.1: Prevalence of Depression in Iowa Adults, 2019

Demographic Groups	Depressive Disorder	
	Prevalence Rate	C.I. (95%)
Total	16.2	(15.4-17.1)
Sex		
Male	11.4	(10.3-12.5)
Female	20.9	(19.6-22.3)
Race/Ethnicity		
White/Non-Hispanic	16.5	(15.5-17.4)
Black/Non-Hispanic	10.7	(5.5-15.9)
Other/Non-Hispanic	19.6	(13.6-25.5)
Hispanic	14.0	(10.5-17.6)
Age Group		
18-24	22.1	(18.7-25.4)
25-34	19.2	(16.7-21.8)
35-44	17.9	(15.5-20.2)
45-54	16.2	(14.1-18.3)
55-64	15.9	(14.1-17.7)
65-74	11.8	(10.2-13.4)
75+	7.8	(6.1-9.4)
Education		
Less Than H.S.	16.0	(12.5-19.5)
H.S. or G.E.D.	16.0	(14.4-17.6)
Some Post-H.S.	18.5	(16.9-20.1)
College Graduate	13.6	(12.2-15.0)
Household Income		
Less than $15,000	31.7	(27.0-36.4)
$15,000- 24,999	22.6	(19.6-25.6)
$25,000- 34,999	17.7	(14.4-21.0)
$35,000- 49,999	17.7	(15.1-20.3)
$50,000- 74,999	16.4	(14.1-18.6)
$75,000+	11.5	(10.2-12.8)

or more. This corresponds to about 163,513 adult Iowans with six or more ACEs, a 1% increase since 2018.

The resilience module contained six questions. A higher score on this module indicates a more positive experience during childhood. Each question was scored from zero to four points with four being the most positive. The maximum score was 24. About 2 in 5 Iowans, 41.2%, scored between 19 and 24 points on this module, indicating a high level of resilience before they were 18 years of age. This is about a 10% decrease since 2018, of Iowans who indicated a more positive experience during childhood.

However, 4.6%, or 43,366 adult Iowans scored between zero and six points, indicating the lowest levels of resilience when they were growing up. The mean was a score of 17 and the median was 18, both a one point decrease from 2018.

Table 20.2 shows that depression, frequent mental distress and days of bad physical health were more prevalent in Iowans who reported 2 or more adverse childhood experiences (ACEs). As the number of reported ACEs increased, so did the prevalence rate of frequent mental distress and number of bad physical health days, but this was especially the case for depression (see Table 20.2). For example, in adult Iowans who reported zero ACEs, 7.4% reported having depression, while in Iowans who reported 6 or more ACEs, the figure was 42.0%.

For other information related to mental health see Chapter 4 on general health status and health-related quality of life.

Health Objectives for the Nation
Healthy People 2020 proposed a goal to reduce the number of people who have experienced a major depressive episode to 5.8%. The 2019 Iowa BRFSS shows 16.2% of adult Iowans reporting ever having a depressive disorder, though this figure could include depression, major depression, dysthymia or minor depression. Although the statistics do not line up perfectly, this figure continues to decrease, indicating a move in the right direction towards the Healthy People 2020 goal.

Table 20.2: Percent of Mental and Physical Health Measures by Number of Adverse Childhood Experiences (ACEs), 2019

ACEs	Depression		Frequent Mental Distress (FMD)		>14 Days Bad Physical Health	
	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)	Prevalence Rate (%)	C.I. (95%)
0	7.4	(6.4-8.5)	4.8	(3.9-5.7)	6.7	(5.7-7.6)
1	11.5	(9.7-13.2)	6.6	(5.1-8.1)	8.5	(7.0-10.0)
2 or 3	19.0	(16.7-21.3)	14.8	(12.5-17.1)	10.4	(8.6-12.1)
4 or 5	29.8	(25.8-33.7)	18.9	(15.3-22.5)	13.3	(10.5-16.2)
6 or more	42.0	(37.3-46.7)	36.8	(32.1-41.5)	17.6	(14.1-21.1)

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FACT
The average delay between mental illness symptom onset and treatment (therapy, medication, self-care is 11 years. (National Alliance on Mental Illness, 2019).

Core Section 1: Health Status

[CATI/INTERVIEWER NOTE: ITEMS IN PARENTHESIS ANYWHERE THROUGHOUT THE QUESTIONNAIRE DO NOT NEED TO BE READ]

C01.01 Would you say that in general your health is—

GENHLTH Read:

    1 Excellent
    2 Very Good
    3 Good
    4 Fair
    5 Poor

Do not read:

    7 Don't know/Not sure
    9 Refused

Core Section 2: Healthy Days

C02.01 Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?

PHYSHLTH

    _ _ Number of days (01-30)
    88 None
    77 Don't know/not sure
    99 Refused

C02.02 Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?

MENTHLTH

    _ _ Number of days (01-30)
    88 None
    77 Don't know/not sure
    99 Refused

[CATI NOTE: IF C02.01, PHYSHLTH, is 88 and C02.02, MENTHLTH, is 88, GO TO NEXT SECTION]

C02.03 During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?

POORHLTH

    _ _ Number of days (01-30)
    88 None
    77 Don't know/not sure
    99 Refused

Core Section 3: Healthcare Access

C03.01 Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare, or Indian Health Service?

HLTHPLN1

    1 Yes
      If using Healthcare Access (HCA) Module go to HCA.01, else continue
    2 No
    7 Don't know/Not Sure
    9 Refused

C03.02 Do you have one person you think of as your personal doctor or health care provider?

PERSDOC2

    1 Yes, only one
    2 More than one
    3 No
      If No, read: Is there more than one, or is there no person who you think of as your personal doctor or health care provider?
    7 Don't know / Not sure
    9 Refused

C03.03 Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?

MEDCOST

    1 Yes
    2 No
    7 Don't know / Not sure
    9 Refused

C03.04 About how long has it been since you last visited a doctor for a routine checkup?

CHECKUP1

[INTERVIEWER NOTE: Read if necessary: A routine checkup is a general physical exam, not an exam for a specific injury, illness, or condition.]

Read if necessary:

    1 Within the past year (anytime less than 12 months ago)
    2 Within the past 2 years (1 year but less than 2 years ago)
    3 Within the past 5 years (2 years but less than 5 years ago)
    4 5 or more years ago

Do not read:

    7 Don't know / Not sure
    8 Never
    9 Refused

Core Section 4: Hypertension Awareness

HYPER.01 Have you ever been told by a doctor, nurse, or other health professional that you have high blood pressure?

Read only if necessary: By other health professional we mean nurse practitioner, a physician assistant, or some other licensed health professional

If "Yes" and respondent is female, ask: "Was this only when you were pregnant?"

    1 Yes
    2 Yes, but female told only during pregnancy
    3 No
    4 Told borderline high or pre-hypertensive
    7 Don't know / Not sure
    9 Refused

HYPER.02 Are you currently taking prescription medicine for your high blood pressure?

    1 Yes
    2 No
    7 Don't know / Not sure
    9 Refused

Core Section 5: Cholesterol Awareness

CHOL.01 Blood cholesterol is a fatty substance found in the blood. About how long has it been since you last had your blood cholesterol checked?

Read only if necessary:

    1 Never [GO TO NEXT SECTION]
    2 Within the past year (anytime less than one year ago)
    3 Within the past 2 years (1 year but less than 2 years ago)
    4 Within the past 3 years (2 years but less than 3 years ago)
    5 Within the past 4 years (3 years but less than 4 years ago)
    6 Within the past 5 years (4 years but less than 5 years ago)
    8 5 or more years ago

Do not Read:

    7 Don't know/ Not sure
    9 Refused [GO TO NEXT SECTION]

CHOL.02 Have you ever been told by a doctor, nurse or other health professional that your blood cholesterol is high?

CATI/ INTERVIEWER NOTE: By other health professional we mean nurse practitioner, a physician assistant, or some other licensed health professional.

    1 Yes
    2 No [GO TO NEXT SECTION]
    7 Don't know / Not sure [GO TO NEXT SECTION]
    9 Refused [GO TO NEXT SECTION]

CHOL.03 Are you currently taking medicine prescribed by your doctor or other health professional for your blood cholesterol?

>   1 Yes
>   2 No
>   7 Don't know / Not sure
>   9 Refused

Core Section 6: Chronic Health Conditions

C06.01 Has a doctor, nurse, or other health professional ever told you that you had any of the following? For each, tell me Yes, No, Or You're Not Sure.

(Ever told) you that you had a heart attack also called a myocardial infarction?
CVDINFR4

>   1 Yes
>   2 No
>   7 Don't know / Not sure
>   9 Refused

C06.02 (Ever told) (you had) angina or coronary heart disease?
CVDCRHD4

>   1 Yes
>   2 No
>   7 Don't know / Not sure
>   9 Refused

C06.03 (Ever told) (you had) a stroke?
CVDSTRK3

>   1 Yes
>   2 No
>   7 Don't know / Not sure
>   9 Refused

C06.04 (Ever told) (you had) asthma?
ASTHMA3

>   1 Yes
>   2 No
>   7 Don't know / Not sure
>   9 Refused Go to C06.06]

C06.05 Do you still have asthma?
ASTHNOW

>   1 Yes
>   2 No
>   7 Don't know / Not sure
>   9 Refused

C06.06 (Ever told) (you had) skin cancer?
CHCSCNCR

>   1 Yes
>   2 No
>   7 Don't know / Not sure
>   9 Refused

C06.07 (Ever told) (you had) any other types of cancer?
CHCOCNCR

>   1 Yes
>   2 No
>   7 Don't know / Not sure
>   9 Refused

C06.08 (Ever told) (you had) chronic obstructive pulmonary disease, C.O.P.D., emphysema or chronic bronchitis?
CHCCOPD1

>   1 Yes
>   2 No
>   7 Don't know / Not sure
>   9 Refused

C06.09 (Ever told) (you had) a depressive disorder (including depression, major depression, dysthymia, or minor depression)?

ADDEPEV2

>   1 Yes
>   2 No
>   7 Don't know / Not sure
>   9 Refused

C06.10 Not including kidney stones, bladder infection or incontinence, were you ever told you have kidney disease?
CHCKDNY1 Read if necessary: Incontinence is not being able to control urine flow.

>   1 Yes
>   2 No
>   7 Don't know / Not sure
>   9 Refused

C06.11 (Ever told) (you had) diabetes?
DIABETE3 Interviewer Note: If yes and respondent is female, ask: was this only when you were pregnant? If respondent says pre-diabetes or borderline diabetes, use response code 4.

>   1 Yes
>   2 Yes, but female told only during pregnancy
>   3 No
>   4   No, pre-diabetes or borderline diabetes
>   7 Don't know / Not sure
>   9 Refused [Go to Pre-Diabetes Optional Module (if used). Otherwise, go to next section.]

C06.12 How old were you when you were told you had diabetes?
DIABAGE2

>   _ _ Code age in years [97 = 97 and older]
>   98 Don't know / Not sure
>   99 Refused

Go to Diabetes Module if used, otherwise go to next section.

Module 2: Diabetes

CATI NOTE: To be asked following Core 06.12; if response to Q6.11 is Yes (code = 1)

M02.01 Are you now taking insulin?
INSULIN

>   1 Yes
>   2 No
>   7 Don't know/ not sure
>   9 Refused

M02.02 About how often do you check your blood for glucose or sugar?
BLDSUGAR Read if necessary: Include times when checked by a family member or friend, but do not include times when checked by a health professional.

Do not read: If the respondent uses a continuous glucose monitoring system (a sensor inserted under the skin to check glucose levels continuously), fill in '98 times per day.'

>   1 _ _ Times per day
>   2 _ _ Times per week
>   3 _ _ Times per month
>   4 _ _ Times per year
>   888 Never
>   777 Don't know / Not sure
>   999 Refused

M02.03 Including times when checked by a family member or friend, about how often do you check your feet for any sores or irritations?
FEETCHK3

>   1 _ _ Times per day
>   2 _ _ Times per week
>   3 _ _ Times per month
>   4 _ _ Times per year
>   555 No feet

888 Never
777 Don't know / Not sure
999 Refused

M02.04 About how many times in the past 12 months have you seen a doctor, nurse, or other health professional for your diabetes?
DOCTDIAB
_ _ Number of times [76 = 76 or more]
88 None
77 Don't know / Not sure
99 Refused

M02.05 About how many times in the past 12 months has a doctor, nurse, or other health professional checked you for A-one-C?
CHKHEMO3 Read if necessary: A test for A-one-C measures the average level of blood sugar over the past three months.
_ _ Number of times [76 = 76 or more]
88 None
98 Never heard of A-one-C test
77 Don't know / Not sure
99 Refused

M02.06 About how many times in the past 12 months has a health professional checked your feet for any sores or irritations?
FEETCHK If M02.03 = 555 (No feet), go to M02.07
_ _ Number of times [76 = 76 or more]
88 None
77 Don't know / Not sure
99 Refused

M02.07 When was the last time you had an eye exam in which the pupils were dilated, making you temporarily sensitive to bright light?
EYEEXAM1 Read if necessary:
1 Within the past month (anytime less than 1 month ago)
2 Within the past year (1 month but less than 12 months ago)
3 Within the past 2 years (1 year but less than 2 years ago)
4 2 or more years ago
Do not read:
7 Don't know / Not sure
8 Never
9 Refused

M02.08 Has a doctor ever told you that diabetes has affected your eyes or that you had retinopathy?
DIABEYE
1 Yes
2 No
7 Don't know/ not sure
9 Refused

M02.09 Have you ever taken a course or class in how to manage your diabetes yourself?
DIABEDU
1 Yes
2 No
7 Don't know/ not sure
9 Refused

Core Section 7: Arthritis
C07.01 (Ever told) (you had) some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia?
HAVARTH3
1 Yes
2 No
7 Don't know / Not sure
9 Refused [GO TO NEXT SECTION]
Interviewer Note: Arthritis diagnoses include: rheumatism, polymyalgia rheumatic, osteoarthritis (not osteoporosis), tendonitis, bursitis, bunion, tennis

elbow, carpal tunnel syndrome, tarsal tunnel syndrome, joint infection, Reiter's syndrome, ankylosing spondylitis; spondylosis, rotator cuff syndrome, connective tissue disease, scleroderma, polymyositis, Raynaud's syndrome, vasculitis, giant cell arteritis, Henoch-Schonlein purpura, Wegener's granulomatosis, polyarteritis nodosa)

C07.02 Has a doctor or other health professional ever suggested physical activity or exercise to help your arthritis or joint symptoms?
ARTHEXER Interviwer note: If the respondent is unclear about whether this means increase or decrease in physical activity, this means increase.
1 Yes
2 No
7 Don't know / Not sure
9 Refused

C07.03 Have you ever taken an educational course or class to teach you how to manage problems related to your arthritis or joint symptoms?
ARTHEDU
1 Yes
2 No
7 Don't know / Not sure
9 Refused

C07.04 Are you now limited in any way in any of your usual activities because of arthritis or joint symptoms?
LMTJOIN2 Interviewer Note: If a respondent question arises about medication, then the interviewer should reply: "Please answer the question based on how you are when you are taking any of the medications or treatments you might use
1 Yes
2 No
7 Don't know / Not sure
9 Refused

C07.05 In the next question, we are referring to work for pay. Do arthritis or joint symptoms now affect whether you work, the type of work you do or the amount of work you do?
ARTHDIS2 Interviewer Note: If respondent gives an answer to each issue (whether works, type of work, or amount of work), then if any issue is "yes" mark the overall response as "yes." If a question arises about medications or treatment, then the interviewer should say: "Please answer the question based on your current experience, regardless of whether you are taking any medication or treatment."
1 Yes
2 No
7 Don't know / Not sure
9 Refused

C07.06 Please think about the past 30 days, keeping in mind all of your joint pain or aching and whether or not you have taken medication. During the past 30 days, how bad was your joint pain on average on a scale of 0 to 10 where 0 is no pain and 10 is pain or aching as bad as it can be.
JOINPAIN
__ __ Enter number [00-10]
77 Don't know/ Not sure
99 Refused

Core Section 8: Demographics
Read if necessary: I will ask you some questions about yourself in the next section. We include these questions so that we can compare health indicators by groups.
C08.01 What is your age?
AGE
_ _ Code age in years
07 Don't know / Not sure
09 Refused
C08.02 Are you Hispanic, Latino/a, or Spanish origin?
HISPANC3 If yes, read: Are you…

Interviewer Note: One or more categories may be selected.

1 Mexican, Mexican American, Chicano/a
2 Puerto Rican
3 Cuban
4 Another Hispanic, Latino/a, or Spanish origin

Do not read:

5 No
7 Don't know / Not sure
9 Refused

C08.03 Which one or more of the following would you say is your race?
MRACE1 Interviewer Note: One or more categories may be selected.
Interviewer Note: If 40 (Asian) or 50 (Pacific Islander) is selected read and code subcategories underneath major heading.
Please read:

10 White
20 Black or African American
30 American Indian or Alaska Native
40 Asian
41 Asian Indian
42 Chinese
43 Filipino
44 Japanese
45 Korean
46 Vietnamese
47 Other Asian
50 Pacific Islander
51 Native Hawaiian
52 Guamanian or Chamorro
53 Samoan
54 Other Pacific Islander

Do not read:

60 Other
88 No additional choices
77 Don't know / Not sure
99 Refused

CATI Note: If more than one response to C08.03; continue. Otherwise, go to C08.05. (after M29).
C08.04 Which one of these groups would you say best represents your race?
ORACE3 Interviewer Note: If respondent has selected multiple races in previous and refuses to select a single race, code refused
Interviewer Note: If 40 (Asian) or 50 (Pacific Islander) is selected read and code subcategories underneath major heading.
Please read:

10 White
20 Black or African American
30 American Indian or Alaska Native
40 Asian
41 Asian Indian
42 Chinese
43 Filipino
44 Japanese
45 Korean
46 Vietnamese
47 Other Asian
50 Pacific Islander
51 Native Hawaiian
52 Guamanian or Chamorro
53 Samoan
54 Other Pacific Islander

Do not read:

60 Other
77 Don't know / Not sure
99 Refused

Module 29: Sexual Orientation and Gender Identity

(SOGI) [TO BE INCLUDED AFTER DEMOGRAPHICS C08.04]
M29.01a The next two questions are about sexual orientation and gender identity.
Interviewer Note: We ask this question in order to better understand the health and health care needs of people with different sexual orientations.

Please say the number before the text response. Respondent can answer with either the number or the text/word.

Which of the following best represents how you think of yourself?
SOMALE CATI NOTE: Ask if Sex= 1.

1 = Gay
2 = Straight, that is, not gay
3 = Bisexual
4 = Something else
7 = I don't know the answer
9 = Refused

M29.01b Which of the following best represents how you think of yourself?
SOFEMALE Interviewer Note: We ask this question in order to better understand the health and health care needs of people with different sexual orientations.

Please say the number before the text response. Respondent can answer with either the number or the text/word.
CATI Note: Ask if Sex=2.

1 = Lesbian or Gay
2 = Straight, that is, not gay
3 = Bisexual
4 = Something else
7 = I don't know the answer
9 = Refused

M29.02 Do you consider yourself to be transgender?
TRNSGNDR Read if necessary: Some people describe themselves as transgender when they experience a different gender identity from their sex at birth. For example, a person born into a male body, but who feels female or lives as a woman would be transgender. Some transgender people change their physical appearance so that it matches their internal gender identity. Some transgender people take hormones and some have surgery. A transgender person may be of any sexual orientation – straight, gay, lesbian, or bisexual.
[Interviewer Note: If yes, ask "Do you consider yourself to be 1. male-to-female, 2. female-to-male, or 3. gender non-conforming?"]

If asked about definition of gender non-conforming, Read: Some people think of themselves as gender non-conforming when they do not identify only as a man or only as a woman.
[Interviewer Note: Please say the number before the text response. Respondent can answer with either the number or the text/word.]

1 Yes, Transgender, male-to-female
2 Yes, Transgender, female to male
3 Yes, Transgender, gender nonconforming
4 No
7 Don't know/not sure
9 Refused
8. 5

C08.05 Are you…
MARITAL Please read:

1 Married
2 Divorced
3 Widowed
4 Separated
5 Never married Or
6 A member of an unmarried couple

Do not read:

9 Refused

C08.06 What is the highest grade or year of school you completed?
EDUCA Read if necessary:
1 Never attended school or only attended kindergarten
2 Grades 1 through 8 (Elementary)
3 Grades 9 through 11 (Some high school)
4 Grade 12 or GED (High school graduate)
5 College 1 year to 3 years (Some college or technical school)
6 College 4 years or more (College graduate)
Do not read:
9 Refused

C08.07 Do you own or rent your home?
RENTHOM1 Read if necessary: We ask this question in order to compare health indicators among people with different housing situations.
Interviewer Note: Other arrangement may include group home, staying with friends or family without paying rent.
Note: Home is defined as the place where you live most of the time/the majority of the year.
1 Own
2 Rent
3 Other arrangement
7 Don't know / Not sure
9 Refused

C08.08 In what county do you currently live?
CTYCODE2
_ _ _ ANSI County Code
777 Don't know / Not sure
999 Refused

C08.9 What is the ZIP Code where you currently live?
ZIPCODE1

_ _ _ _ _
77777 Do not know
99999 Refused

CATI NOTE: IF CELLULAR TELEPHONE INTERVIEW SKIP TO 8.12 (QSTVER GE 20)
C08.10 Not including cell phones or numbers used for computers, fax machines or security systems, do you have more than one telephone number in your household?
NUMHHOL3
1 Yes
2 No [GO TO C08.12]
7 Don't know / Not sure [GO TO C08.12]
9 Refused [GO TO C08.12]

C08.11 How many of these telephone numbers are residential numbers?
NUMPHON3
__ Enter number (1-5)
6 Six or more
7 Don't know / Not sure
8 None
9 Refused

C08.12 How many cell phones do you have for personal use?
CPDEMO1B Read if necessary: Include cell phones used for both business and personal use.
__ Enter number (1-5)
6 Six or more
7 Don't know / Not sure
8 None
9 Refused

CATI Note: Last question needed for partial complete.
C08.13 Have you ever served on active duty in the United States Armed Forces, either in the regular military or in a National Guard or military reserve unit?
VETERAN3 Read if necessary: Active duty does not include training for the Reserves or National Guard, but DOES include activation, for example, for the

Persian Gulf War.
1 Yes
2 No
7 Don't know / Not sure
9 Refused

C08.14 Are you currently…?
EMPLOY1 Interviewer Note: If more than one, say "select the category which best describes you".
Read:
1 Employed for wages
2 Self-employed
3 Out of work for 1 year or more
4 Out of work for less than 1 year
5 A Homemaker
6 A Student
7 Retired Or
8 Unable to work
Do not read:
9 Refused

Module 26: Industry and Occupation
[TO BE PROGRAMMED TO COME AFTER DEMOGRAPHICS C08.14 EMPLOYEMENT QUESTION]
CATI Note: If C08.14 = 1 or 4 (Employed for wages or out of work for less than 1 year) or 2 (Self-employed), continue. Else go to next module
M26.01 What kind of work do you do? For example, registered nurse, janitor, cashier, auto mechanic.
TYPEWORK If C08.14 = 4 (Out of work for less than 1 year) ask, "What kind of work did you do? For example, registered nurse, janitor, cashier, auto mechanic."
Interviewer Note: If respondent is unclear, ask: What is your job title?
If respondent has more than one job ask: What is your main job?
_____Record answer
99 Refused
M26.02 What kind of business or industry do you work in? For example, hospital, elementary school, clothing manufacturing, restaurant.
TYPEINDS CATI Note: If Core Q8.14 = 4 (Out of work for less than 1 year) ask, "What kind of business or industry did you work in? For example, hospital, elementary school, clothing manufacturing, restaurant."
_____Record answer
99 Refused
8.15 C08.15 How many children less than 18 years of age live in your household?
CHILDREN
_ _ Number of children
88 None
99 Refused
C08.16 Is your annual household income from all sources—
INCOME2 Interviewer Note: If respondent refuses at ANY income level, code '99' (Refused)
Read if necessary:
04 Less than $25,000 ($20,000 to less than $25,000)
[If no, ask 05; if yes, ask 03]
03 Less than $20,000 ($15,000 to less than $20,000)
[If no, code 04; if yes, ask 02]
02 Less than $15,000 ($10,000 to less than $15,000)
[If no, code 03; if yes, ask 01]
01 Less than $10,000 [If no, code 02]
05 Less than $35,000 ($25,000 to less than $35,000) [If no, ask 06]
06 Less than $50,000 ($35,000 to less than $50,000) [If no, ask 07]
07 Less than $75,000 ($50,000 to less than $75,000) [If no, code 08]
08 $75,000 or more

Do not read:
- 77 Don't know / Not sure
- 99 Refused

C08.17 About how much do you weigh without shoes?
WEIGHT2 Interviewer Note: If respondent answers in metrics, put 9 in first column. Round fractions up
- _ _ _ _ Weight (pounds/kilograms)
- 7777 Don't know / Not sure
- 9999 Refused

C08.18 About how tall are you without shoes?
HEIGHT3 Interviewer Note: If respondent answers in metrics, put 9 in first column. Round fractions down
- _ _ / _ _ Height (ft / inches/meters/centimeters)
- 77/ 77 Don't know / Not sure
- 99/ 99 Refused

CATI NOTE: Skip if Male, or if AGE (C08.02) is greater than 49
C08.19 To your knowledge, are you now pregnant?
PREGNANT
- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

C08.20 Some people who are deaf or have serious difficulty hearing use assistive devices to communicate by phone. Are you deaf or do you have serious difficulty hearing?
DEAF
- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

C08.21 Are you blind or do you have serious difficulty seeing, even when wearing glasses?
BLIND
- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

C08.22 Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions?
DECIDE
- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9Refused

C08.23 Do you have serious difficulty walking or climbing stairs?
DIFFWALK
- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

C08.24 Do you have difficulty dressing or bathing?
DIFFDRES
- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

C08.25 Because of a physical, mental, or emotional condition, do you have difficulty doing errands alone such as visiting a doctor's office or shopping?
DIFFALON
- 1 Yes
- 2 No

- 7 Don't know / Not sure
- 9 Refused

Core Section 9: Tobacco Use
C09.01 Have you smoked at least 100 cigarettes in your entire life?
SMOKE100 Interviewer Note: Do not include: electronic cigarettes (e-cigarettes, njoy, bluetip), herbal cigarettes, cigars, cigarillos, little cigars, pipes, bidis, kreteks, water pipes (hookahs) or marijuana. 5 packs = 100 cigarettes
- 1 Yes
- 2 No [Go to C09.05]
- 7 Don't know/Not Sure [Go to C09.05]
- 9 Refused [Go to C09.05]

C09.02 Do you now smoke cigarettes every day, some days, or not at all?
SMOKDAY2
- 1 Every day
- 2 Some days
- 3 Not at all [Go to C09.04]
- 7 Don't know / Not sure [Go to C09.05]
- 9 Refused [Go to C09.05]

C09.03 During the past 12 months, have you stopped smoking for one day or longer because you were trying to quit smoking?
STOPSMK2
- 1 Yes [Go to C09.05]
- 2 No [Go to C09.05]
- 7 Don't know / Not sure [Go to C09.05]
- 9 Refused [Go to C09.05]

C09.04 How long has it been since you last smoked a cigarette, even one or two puffs?
LASTSMK2 Read if necessary:
- 01 Within the past month (less than 1 month ago)
- 02 Within the past 3 months (1 month but less than 3 months ago)
- 03 Within the past 6 months (3 months but less than 6 months ago)
- 04 Within the past year (6 months but less than 1 year ago)
- 05 Within the past 5 years (1 year but less than 5 years ago)
- 06 Within the past 10 years (5 years but less than 10 years ago)
- 07 10 years or more
- 08 Never smoked regularly
- 77 Don't know / Not sure
- 99 Refused

C09.05 Do you currently use chewing tobacco, snuff, or snus every day, some days, or not at all?
USENOW3 Read if necessary: Snus (Swedish for snuff) is a moist smokeless tobacco, usually sold in small pouches that are placed under the lip against the gum.
- 1 Every day
- 2 Some days
- 3 Not at all
- 7 Don't know / Not sure
- 9 Refused

Core Section 10: Alcohol Consumption
C10.01 During the past 30 days, how many days per week or per month did you have at least one drink of any alcoholic beverage such as beer, wine, a malt beverage or liquor?
ALCDAY5 Interviewer Note: One drink is equivalent to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor.
- 1 _ _ Days per week
- 2 _ _ Days in past 30 days
- 888 No drinks in past 30 days [Go to next section]
- 777 Don't know / Not sure [Go to next section]
- 999 Refused [Go to next section]

C10.02 One drink is equivalent to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor. During the past 30 days, on the days when you

drank, about how many drinks did you drink on the average?

AVEDRNK2 Read if necessary: A 40 ounce beer would count as 3 drinks, or a cocktail drink with 2 shots would count as 2 drinks.

    _ _ Number of drinks
    77 Don't know / Not sure
    99 Refused

C10.03 Considering all types of alcoholic beverages, how many times during the past 30 days did you have X [CATI X = 5 for men, X = 4 for women] or more drinks on an occasion?

DRNK3GE5

    _ _ Number of times
    77 Don't know / Not sure
    99 Refused

CATI Note: X = 5 for men, X = 4 for women

C10.04 During the past 30 days, what is the largest number of drinks you had on any occasion?

MAXDRNKS

    _ _ Number of drinks
    77 Don't know / Not sure
    99 Refused

Core Section 11: Exercise (Physical Activity)

C11.01 During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?

Interviewer Note: If respondent does not have a regular job or is retired, they may count the physical activity or exercise they spend the most time doing in a regular month.

    1 Yes
    2 No [Go to C 11.08]
    7 Don't know/Not Sure [Go to C 11.08]
    9 Refused [Go to C 11.08]

C11.02 What type of physical activity or exercise did you spend the most time doing during the past month?

    __ __ Specify from Physical Activity Coding List
      [See Physical Activity Coding List]
    77 Don't know/ Not Sure [Go to C11.08]
    99 Refused [Go to C11.08]

Interviewer Instruction: If the respondent's activity is not included in the physical activity coding list, choose the option listed as "other".

C11.03 How many times per week or per month did you take part in this activity during the past month?

    1_ _ Times per week
    2_ _ Times per month
    777 Don't know / Not sure
    999 Refused

C11.04 And when you took part in this activity, for how many minutes or hours did you usually keep at it?

    _:_ _ Hours and minutes
    777 Don't know / Not sure
    999 Refused

C11.05 What other type of physical activity gave you the next most exercise during the past month?

    __ __ Specify from Physical Activity List
      [See Physical Activity Coding List]
    88 No other activity [Go to C11.08]
    77 Don't know/ Not Sure [Go to C11.08]
    99 Refused [Go to C11.08]

Interviewer Note: If the respondent's activity is not included in the physical activity coding list, choose the option listed as "other".

C11.06 How many times per week or per month did you take part in this activity during the past month?

    1_ _ Times per week
    2_ _ Times per month
    777 Don't know / Not sure
    999 Refused

C11.07 And when you took part in this activity, for how many minutes or hours did you usually keep at it?

    _:_ _ Hours and minutes
    777 Don't know / Not sure
    999 Refused

C11.08 During the past month, how many times per week or per month did you do physical activities or exercises to strengthen your muscles?

Interviewer Note: Do not count aerobic activities like walking, running, or bicycling. Count activities using your own body weight like yoga, sit-ups or push-ups and those using weight machines, free weights, or elastic bands.

    1_ _ Times per week
    2_ _Times per month
    888 Never
    777 Don't know / Not sure
    999 Refused

Core Section 12: Fruits and Vegetables

Now think about the foods you ate or drank during the past month, that is, the past 30 days, including meals and snacks.

Interviewer Note: If a respondent indicates that they consume a food item every day then enter the number of times per day. If the respondent indicates that they eat a food less than daily, then enter times per week or time per month. Do not enter time per day unless the respondent reports that he/she consumed that food item each day during the past month.

C12.01 Not including juices, how often did you eat fruit? You can tell me times per day, times per week or times per month.

Interviewer Notes: Enter quantity in times per day, week, or month.

If respondent gives a number without a time frame, ask "was that per day, week, or month?"

Read if respondent asks what to include or says 'I don't know': include fresh, frozen or canned fruit. Do not include dried fruits.

    1_ _ Day
    2_ _ Week
    3_ _ Month
    300 Less than once a month
    555 Never
    777 Don't Know
    999 Refused

C12.02 Not including fruit-flavored drinks or fruit juices with added sugar, how often did you drink 100% fruit juice such as apple or orange juice?

Interviewer Notes: Read if respondent asks about examples of fruit-flavored drinks: "do not include fruit-flavored drinks with added sugar like cranberry cocktail, Hi-C, lemonade, Kool-Aid, Gatorade, Tampico, and sunny delight. Include only 100% pure juices or 100% juice blends."

Enter quantity in times per day, week, or month.

If respondent gives a number without a time frame, ask "Was that per day, week, or month?"

    1_ _ Day
    2_ _ Week
    3_ _ Month
    300 Less than once a month
    555 Never
    777 Don't Know
    999 Refused

C12.03 How often did you eat a green leafy or lettuce salad, with or without other vegetables?

Interviewer Notes: Enter quantity in times per day, week, or month.

If respondent gives a number without a time frame, ask "Was that per day, week, or month?"

Read if respondent asks about spinach: "Include spinach salads."

>
> 1_ _ Day
> 2_ _ Week
> 3_ _ Month
> 300 Less than once a month
> 555 Never
> 777 Don't Know
> 999 Refused

C12.04 How often did you eat any kind of fried potatoes, including French fries, home fries, or hash browns?
Interviewer Notes: Enter quantity in times per day, week, or month.

If respondent gives a number without a time frame, ask "Was that per day, week, or month?"

Read if respondent asks about potato chips: "Do not include potato chips."

>
> 1_ _ Day
> 2_ _ Week
> 3_ _ Month
> 300 Less than once a month
> 555 Never
> 777 Don't Know
> 999 Refused

C12.05 How often did you eat any other kind of potatoes, or sweet potatoes, such as baked, boiled, mashed potatoes, or potato salad?
Interviewer Notes: Enter quantity in times per day, week, or month.

If respondent gives a number without a time frame, ask "Was that per day, week, or month?"

Read if respondent asks about what types of potatoes to include: "Include all types of potatoes except fried. Include potatoes au gratin, scalloped potatoes."

>
> 1_ _ Day
> 2_ _ Week
> 3_ _ Month
> 300 Less than once a month
> 555 Never
> 777 Don't Know
> 999 Refused

C12.06 Not including lettuce salads and potatoes, how often did you eat other vegetables?
Interviewer Notes: Enter quantity in times per day, week, or month.

If respondent gives a number without a time frame, ask "Was that per day, week, or month?"

Read if respondent asks about what to include: "Include tomatoes, green beans, carrots, corn, cabbage, bean sprouts, collard greens, and broccoli. Include raw, cooked, canned, or frozen vegetables. Do not include rice."

>
> 1_ _ Day
> 2_ _ Week
> 3_ _ Month
> 300 Less than once a month
> 555 Never
> 777 Don't Know
> 999 Refused

Core Section 13: Immunization
C13.01 During the past 12 months, have you had either a flu vaccine that was sprayed in your nose or flu shot injected into your arm?
FLUSHOT6 Read only if necessary: A new flu shot came out in 2011 that injects vaccine into the skin with a very small needle. It is called Fluzone Intradermal vaccine. This is also considered a flu shot.

>
> 1 Yes

>
> 2 No [Go to C13.03]
> 7 Don't know / Not sure [Go to C13.03]
> 9 Refused [Go to C13.03]

C13.02 During what month and year did you receive your most recent flu vaccine that was sprayed in your nose or flu shot injected into your arm?
FLSHTMY2

>
> _ _ / _ _ _ _ Month/ Year
> 777777 Don't know/ Not sure
> 999999 Refused

C13.03 Have you received a tetanus shot in the past 10 years?
TETANUS1 If yes, ask: Was this Tdap, the tetanus shot that also has pertussis or whooping cough vaccine?

>
> 1 Yes, received Tdap
> 2 Yes, received tetanus shot, but not Tdap
> 3 Yes, received tetanus shot but not sure what type
> 4 No, did not receive any tetanus shot in the past 10 years
> 7 Don't know/Not sure
> 9 Refused

C13.04 Have you ever had a pneumonia shot also known as a pneumococcal vaccine?
PNEUVAC4 Read if necessary: There are two types of pneumonia shots: poly-saccharide, also known as Pneumovax, and conjugate, also known as Prevnar.

>
> 1 Yes
> 2 No
> 7 Don't know / Not sure
> 9 Refused

Core Section 14: H.I.V./AIDS
The next few questions are about the national health problem of H.I.V., the virus that causes AIDS. Please remember that your answers are strictly confidential and that you don't have to answer every question if you do not want to. Although we will ask you about testing, we will not ask you about the results of any test you may have had.
C14.01 Including fluid testing from your mouth, but not including tests you may have had for blood donation, have you ever been tested for H.I.V?
HIVTST6

>
> 1 Yes
> 2 No [Go to C14.03]
> 7 Don't know/ not sure [Go to C14.03]
> 9 Refused [Go to C14.03]

C14.02 Not including blood donations, in what month and year was your last H.I.V. test?
HIVTSTD3 INTERVIEWER NOTE: If the respondent remembers the year but cannot remember the month, code the first two digits 77 and the last four digits for the year
CATI Note: If response is before January 1985, code "777777".

>
> _ _ / _ _ _ _ Code month and year
> 77/ 7777 Don't know / Not sure
> 99/ 9999 Refused

C14.03 I am going to read you a list. When I am done, please tell me if any of the situations apply to you. You do not need to tell me which one.
HIVRISK5

> • You have injected any drug other than those prescribed for you in the past year.
> • You have been treated for a sexually transmitted disease or STD in the past year.
> • You have given or received money or drugs in exchange for sex in the past year.
> • You had anal sex without a condom in the past year.
> • You had four or more sex partners in the past year.

Do any of these situations apply to you?

>
> 1 Yes

2 No
7 Don't know / Not sure
9 Refused

Closing Statement / Transition to Modules
Interviewer Note: Read if no optional modules follow, otherwise continue to optional modules.

That was my last question. Everyone's answers will be combined to help us provide information about the health practices of people in this state. Thank you very much for your time and cooperation.

Optional Modules and State Added Questions

Module 15: Aspirin for CVD Prevention
M15.01 How often do you take an aspirin to prevent or control heart disease, heart attacks or stroke? Would you say….
Read:
1 Daily
2 Some days
3 Used to take it but had to stop due to side effects, or
4 Do not take it
Do not read:
7 Don't know / Not sure
9 Refused

Module 17: Sodium or Salt-Related Behavior [FORM A]
M17.01 Are you currently watching or reducing your sodium or salt intake?
1 Yes
2 No
7 Don't know/ Not sure
9 Refused
M17.02 Has a doctor or other health professional ever advised you to reduce sodium or salt intake?
1 Yes
2 No
7 Don't know/ Not sure
9 Refused

State Added: Sugar Sweetened Beverages [FORM A]
SASSBQ1 During the past 30 days, how often did you drink regular soda or pop that contains sugar? Do not include diet soda or diet pop.
Interviewer Note: Please remind interviewees to include regular soda that they mixed with alcohol.
Please read: You can answer times per day, week, or month: for example, twice a day, once a week, and so forth.
1 _ _ Times per day
2 _ _ Times per week
3 _ _ Times per month
Do not read:
888 None
777 Don't know / Not sure
999 Refused

SASSBQ2 During the past 30 days, how often did you drink sweetened fruit drinks, such as Kool-aid, cranberry juice cocktail, and lemonade? Include fruit drinks you made at home and added sugar to.
INTERVIEWER NOTE: Fruit drinks are sweetened beverages that often contain some fruit juice or flavoring. Do not include 100% fruit juice, sweet tea, coffee drinks, sports drinks, or energy drinks.
Please read: You can answer times per day, week, or month: for example, twice a day, once a week, and so forth.
1 _ _ Times per day
2 _ _ Times per week
3 _ _ Times per month
Do not read:
888 None

777 Don't know / Not sure
999 Refused

Module 20: Cognitive Decline
[CATI/INTERVIEWER NOTE: If respondent is 45 years of age or older continue, else go to next module.]
M20.01 The next few questions ask about difficulties in thinking or remembering that can make a big difference in everyday activities. This does not refer to occasionally forgetting your keys or the name of someone you recently met, which is normal. This refers to confusion or memory loss that is happening more often or getting worse, such as forgetting how to do things you've always done or forgetting things that you would normally know. We want to know how these difficulties impact you.

During the past 12 months, have you experienced confusion or memory loss that is happening more often or is getting worse?
CIMEMLOS
1 Yes [GO TO M20.02]
2 No [GO TO NEXT MODULE]
7 Don't know/ not sure [GO TO M20.02]
9 Refused [GO TO NEXT MODULE]
M20.02 During the past 12 months, as a result of confusion or memory loss, how often have you given up day-to-day household activities or chores you used to do, such as cooking, cleaning, taking medications, driving, or paying bills? Would you say it is…
CDHOUSE Read:
1 Always
2 Usually
3 Sometimes
4 Rarely
5 Never
Do not read:
7 Don't know/Not sure
9 Refused
M20.03 As a result of confusion or memory loss, how often do you need assistance with these day-to-day activities? Would you say it is…
CDASSIST Read:
1 Always
2 Usually
3 Sometimes
4 Rarely
5 Never
Do not read:
7 Don't know/Not sure
9 Refused [GO TO M20.05]
M20.04 When you need help with these day-to-day activities, how often are you able to get the help that you need? Would you say it is…
CDHELP Read:
1 Always
2 Usually
3 Sometimes
4 Rarely
5 Never
Do not read:
7 Don't know/Not sure
9 Refused
M20.05 During the past 12 months, how often has confusion or memory loss interfered with your ability to work, volunteer, or engage in social activities outside the home? Would you say it is…
CDSOCIAL Read:
1 Always
2 Usually
3 Sometimes

4   Rarely
5   Never

Do not read:

7   Don't know/Not sure
9   Refused

M20.06 Have you or anyone else discussed your confusion or memory loss with a health care professional?

CDDISCUS

1   Yes
2   No
7   Don't know/ not sure
9   Refused

State Added: Hepatitis Treatment

SAHCVQ1 Have you ever been tested for hepatitis C?
Interviewer notes: The hepatitis C virus causes hepatitis C infection of the liver.

1   Yes [IF YES, GO TO SAHCVQ2]
2   No [Go to NEXT SECTION]
7   Don't know/not sure [Go to NEXT SECTION]
9   Refused [Go to NEXT SECTION]

SAHCVQ2 Have you ever been told by a doctor or other health professional that you had Hepatitis C?
Interviewer Note: Hepatitis C is an infection of the liver from the Hepatitis C virus

1   Yes
2   No [Go to NEXT SECTION]
7   Don't know / Not sure [Go to NEXT SECTION]
9   Refused [Go to NEXT SECTION]

SAHCVQ3 Were you treated for Hepatitis C in 2015 or after?
Interviewer Note: Most hepatitis C treatments offered in 2015 or after were oral medicines or pills. Including Harvoni, Viekira, Zepatier, Epclusa and others.

1   Yes
2   No
7   Don't know/ Not sure
9   Refused

SAHCVQ4 Were you treated for Hepatitis C prior to 2015?
Interviewer Note: Most hepatitis C treatments offered prior to 2015 were shots and pills given weekly or more often over many months.

1   Yes
2   No
7   Don't know/ Not sure
9   Refused

SAHCVQ5 Do you still have Hepatitis C?
Read only if necessary: You may still have Hepatitis C and feel healthy. Your blood must be tested again to tell if you still have Hepatitis C.

1   Yes
2   No
7   Don't know/ Not sure
9   Refused

Module 23: Family Planning

[CATI NOTE: IF RESPONDENT IS FEMALE AND GREATER THAN 49 YEARS OF AGE, HAS HAD A HYSTERECTOMY, IS PREGNANT, OR IF RESPONDENT IS MALE GO TO THE NEXT SECTION.]

M23.01 The last time you had sex with a man, did you or your partner do anything to keep you from getting pregnant?

1   Yes
2   No [GO TO M23.03]
3   No partner/not sexually active [GO TO NEXT SECTION]
4   Same sex partner [GO TO NEXT SECTION
7   Don't know/Not sure [GO TO M23.03]
9   Refused [GO TO M23.03]

M23.02 The last time you had sex with a man, what did you or your partner do to keep you from getting pregnant?
INTERVIEWER NOTE: IF RESPONDENT REPORTS USING MORE THAN ONE METHOD, PLEASE CODE THE METHOD THAT OCCURS FIRST ON THE LIST.
INTERVIEWER NOTE: IF RESPONDENT REPORTS USING "CONDOMS," PROBE TO DETERMINE IF "FEMALE CONDOMS" OR "MALE CONDOMS"."
INTERVIEWER NOTE: IF RESPONDENT REPORTS USING AN "IUD" PROBE TO DETERMINE IF "LEVONORGESTREL IUD" OR "COPPER-BEARING IUD"."
INTERVIEWER NOTE: IF RESPONDENT REPORTS "OTHER METHOD", ASK RESPONDENT TO "PLEASE BE SPECIFIC" AND ENSURE THAT THEIR RESPONSE DOES NOT FIT INTO ANOTHER CATEGORY. IF RESPONSE DOES FIT INTO ANOTHER CATEGORY, PLEASE MARK APPROPRIATELY.
Read only if necessary:

01   Female sterilization (ex. Tubal ligation, Essure, Adiana) [GO TO NEXT MODULE]
02   Male sterilization (vasectomy) [GO TO NEXT MODULE]
03   Contraceptive implant (ex. Nexplanon, Jadelle, Sino Implant, Implanon) [GO TO NEXT MODULE]
04   Levonorgestrel (LEE-voe-nor-JES-trel) (LNG) or hormonal IUD (ex. Mirena) [GO TO NEXT MODULE]
05   Copper-bearing IUD (ex. ParaGard) [GO TO NEXT MODULE]
06   IUD, type unknown [GO TO NEXT MODULE]
07   Shots (ex. Depo-Provera or DMPA) [GO TO NEXT MODULE]
08   Birth control pills, any kind [GO TO NEXT MODULE]
09   Contraceptive patch (ex. Ortho Evra, Xulane) [GO TO NEXT MODULE]
10   Contraceptive ring (ex. NuvaRing) [GO TO NEXT MODULE]
11   Male condoms [GO TO NEXT MODULE]
12   Diaphragm, cervical cap, sponge [GO TO NEXT MODULE]
13   Female condoms [GO TO NEXT MODULE]
14   Not having sex at certain times (rhythm or natural family planning) [GO TO NEXT MODULE]
15   Withdrawal (or pulling out) [GO TO NEXT MODULE]
16   Foam, jelly, film, or cream [GO TO NEXT MODULE]
17   Emergency contraception (morning after pill) [GO TO NEXT MODULE]
18   Other method [GO TO NEXT MODULE]

Do not read:

77   Don't know/Not sure
99   Refused

M23.03 Some reasons for not doing anything to keep you from getting pregnant the last time you had sex might include wanting a pregnancy, not being able to pay for birth control, or not thinking that you can get pregnant.

What was your main reason for not using a method to prevent pregnancy the last time you had sex with a man?
INTERVIEWER NOTE: IF RESPONDENT REPORTS "OTHER REASON," ASK RESPONDENT TO "PLEASE SPECIFY" AND ENSURE THAT THEIR RESPONSE DOES NOT FIT INTO ANOTHER CATEGORY. IF RESPONSE DOES FIT INTO ANOTHER CATEGORY, PLEASE MARK APPROPRIATELY.
Read only if necessary:

01   You didn't think you were going to have sex/no regular partner
02   You just didn't think about it
03   Don't care if you get pregnant
04   You want a pregnancy
05   You or your partner don't want to use birth control
06   You or your partner don't like birth control/side effects
07   You couldn't pay for birth control
08   You had a problem getting birth control when you needed it
09   Religious reasons
10   Lapse in use of a method

11 Don't think you or your partner can get pregnant (infertile or too old)
12 You had tubes tied (sterilization)
13 You had a hysterectomy
14 Your partner had a vasectomy (sterilization)
15 You are currently breast-feeding
16 You just had a baby/postpartum
17 You are pregnant now
18 Same sex partner
19 Other reasons
77 Don't know/Not sure
99 Refused

State Added: Social Determinants of Health [FORM A]

SASDHQ1 During the last 12 months, was there a time when you were not able to pay your mortgage, rent or utility bills?
1 Yes
2 No
7 Don't know/not sure
9 Refused

SASDHQ2 In the last 12 months, how many times have you moved from one home to another?
__ __ Number of moves in past 12 months [01-52]
88 None (Did not move in past 12 months)
77 Don't know/Not sure
99 Refused

SASDHQ3 How safe from crime do you consider your neighborhood to be? Would you say…

Please read:
1 Extremely safe
2 Safe
3 Unsafe
4 Extremely unsafe

Do not read:
7 Don't know/Not sure
9 Refused

SASDHQ4 For the next two statements, please tell me whether the statement was often true, sometimes true, or never true for you in the last 12 months (that is, since last [CATI NOTE: NAME OF CURRENT MONTH]). The first statement is, "The food that I bought just didn't last, and I didn't have money to get more."

Was that often, sometimes, or never true for you in the last 12 months?
1 Often true,
2 Sometimes true, or
3 Never true

Do not read:
7 Don't Know/Not sure
9 Refused

SASDHQ5 I couldn't afford to eat balanced meals. Was that often, sometimes, or never true for you in the last 12 months?
1 Often true,
2 Sometimes true, or
3 Never true

Do not read:
7 Don't Know /Not sure
9 Refused

SASDHQ6 In general, how do your finances usually work out at the end of the month? Do you find that you usually:

Please read:
1 End up with some money left over,
2 Have just enough money to make ends meet, or
3 Do not have enough money to make ends meet

Do not read:
7 Don't Know/Not sure
9 Refused

SASDHQ7 Stress means a situation in which a person feels tense, restless, nervous, or anxious, or is unable to sleep at night because his/her mind is troubled all the time. Within the last 30 days, how often have you felt this kind of stress?

Please read:
1 None of the time,
2 A little of the time,
3 Some of the time,
4 Most of the time, or
5 All of the time

Do not read:
7 Don't know/Not sure
9 Refused

State Added: E-Cigarettes

Read: Electronic cigarettes (e-cigarettes) and other electronic vaping products include electronic hookahs (e-hookahs), JUULS, vape pods, vape pens, e-cigars, mods and others. These products are battery-powered and usually contain nicotine and flavors such as fruit, mint, or candy.

Read if necessary: JUUL and JUUL copycats are sometimes called vape pods. They are new types of vaping devices that resemble a USB flash drive and have a battery. They can be plugged into a laptop or USB drive.

INTERVIEWER NOTE: THESE QUESTIONS CONCERN ELECTRONIC VAPING PRODUCTS FOR NICOTINE USE. THE USE OF ELECTRONIC VAPING PRODUCTS FOR MARIJUANA USE IS NOT INCLUDED IN THESE QUESTIONS.

SAECIGQ1 Have you ever used an e-cigarette or other electronic "vaping" product, even just one time, in your entire life?
1 Yes
2 No [GO TO NEXT MODULE]
7 Don't know / Not sure [GO TO NEXT MODULE]
9 Refused [GO TO NEXT MODULE]

SAECIGQ2 Do you now use e-cigarettes or other electronic "vaping" products every day, some days, or not at all?
1 Every day
2 Some days
3 Not at all [GO TO NEXT MODULE]
7 Don't know / Not sure [GO TO NEXT MODULE]
9 Refused [GO TO NEXT MODULE]

Read if necessary: JUUL and JUUL copycats are sometimes called vape pods. They are new types of vaping devices that resemble a USB flash drive and have a battery. They can be plugged into a laptop or USB drive.

SAECIGQ3 When you use an e-cigarette or vaping product, how often do you use a JUUL or a JUUL-knockoff/ JUUL copycat? Would you say….
1 All the time
2 Most of the time
3 Some of the time
5 Never
7 Don't know / Not sure
9 Refused

SAECIGQ4 During the past 12 months, have you stopped using e-cigarettes or other "vaping" products – even if you stopped for less than a day because you were TRYING to quit vaping?
1 Yes
2 No
7 Don't know / Not sure
9 Refused

State Added: Tobacco

CATI NOTE: [Ask if Q9.1 = 1 and Q9.2 = 1 or 2]
SATQ1 Currently, when you smoke cigarettes, how often do you smoke menthol cigarettes? Would you say…
1 All of the time,

2 Most of the time,
3 Some of the time, or
5 Never?
7 Don't know/Not sure
9 Refused

CATI NOTE: [FOR EVERYONE]

SATQ3 Do you now smoke cigars, cigarillos, or little filtered cigars every day, some days or not at all?
1 Every day,
2 Some days, or
4 Not at all?
7 Don't know/Not sure
9 Refused

SATQ4 Do you now smoke a regular pipe filled with tobacco every day, some days or not at all?
1 Every day,
2 Some days, or
4 Not at all?
7 Don't know / Not sure
9 Refused

SATQ5 Have you ever tried smoking tobacco in a water pipe or hookah in your entire life, even one or two puffs?
1 Yes
2 No [Go to SATQ11]
7 Don't Know/Not sure [Go to SATQ11]
9 Refused [Go to SATQ11]

SATQ6 Do you now smoke tobacco in a water pipe or hookah every day, some days, or not at all?
1 Every day,
2 Some days, or
4 Not at all?
7 Don't know/Not sure
9 Refused

TOBACCO CESSATION

CATI NOTE: [SKIP IF (Q9.1 >= 2) OR (Q9.2>=3) OR (Q9.3=1)]

SATQ11 During the past 12 months, have you stopped smoking cigarettes – even if you stopped for less than a day, because you were TRYING to quit?
1 Yes
2 No
7 Don't know / Not sure
9 Refused

CATI NOTE: [ASK IF Q9.5 < 3 OR SATQ3 < 3 OR SATQ4 < 3 OR SATQ6 < 3]

SATQ12 During the past 12 months, have you stopped using smokeless tobacco, cigars or pipe tobacco – even if you stopped for less than a day, because you were TRYING to quit?
1 Yes
2 No
7 Don't know/Not sure
9 Refused

RECENT QUIT METHOD USED

CATI NOTE: [ASK IF Q9.3 = 1 OR Q9.4 < 5 OR SATQ11= 1 OR SATQ12 = 1]

SATQ13 Thinking back to the (LAST TIME/time) you tried to QUIT smoking or quit using tobacco in the past 12 months. Did you do ANY of the following…
A Call a telephone help line or quit line?
B Use an internet or web-based program, app, smartphone or tool?
C Try to quit by SWITCHING to electronic or E-cigarettes?
D Try to quit by SWITCHING to some other form of tobacco?
E Try to stop by setting a specific date to stop smoking or using tobacco?
F Try to quit cold turkey?
G Try to quit with the support of family or friends?
H Try to quit using medications that help people stop using tobacco?

1 Yes
2 No
7 Don't know/Not sure
9 Refused

CATI NOTE: [ASK IF SATQ13h = 1]

SATQ15 Which medications did you use when you tried to quit? Did you use...
A Nicotine patches?
B Nicotine gum?
C Nicotine lozenges?
D Nicotine spray?
E Nicotine inhaler?
F Zyban, also called Wellbutrin or bupropion?
G Chantix, also called varenicline?
H Other medications to help you quit?
1 Yes
2 No
7 Don't know/Not sure
9 Refused

TOBACCO SCREENING

CATI NOTE: [Skip to SATQ18A if Q3.4 = 1]

SATQ17 Excluding visits to a dentist or dental hygienist, in the past 12 months, have you seen a doctor, nurse or other health care professional?
[INTERVIEWER NOTE: Answer is "YES" if they visited doctor, nurse practitioner or physician's assistant for ANY reason, not just smoking.]
1 Yes
2 No [GO TO NEXT MODULE]
7 Don't Know/Not sure [GO TO NEXT MODULE]
9 Refused [GO TO NEXT MODULE]

CATI NOTE: [ASK IF Q9.2 = 1 or 2 OR Q9.4 < 5 OR Q9.5 = 1 or 2 OR SATQ3 = 1 or 2 OR SATQ4 = 1 or 2 OR SATQ6 = 1 or 2]

SATQ18A In the PAST 12 MONTHS, when you visited your health care provider, did they ask about your tobacco use?
1 Yes
2 No
7 Don't know/Not sure
9 Refused

SATQ18B In the PAST 12 MONTHS, when you visited your health care provider, did they advise you to stop smoking or using tobacco?
1 Yes
2 No [GO TO NEXT MODULE]
7 Don't know/Not sure [GO TO NEXT MODULE]
9 Refused [GO TO NEXT MODULE]

SATQ19 Which method, if any, did they advise you to use?
[DO NOT READ – SELECT ALL THAT APPLY]
1 Suggest you call or use a telephone or web-based quit line
2 Suggest you use a smoking or tobacco use cessation class, program, or counseling
3 Recommend or prescribe a medicine to help you quit
4 Suggest you set a specific date to stop smoking or using tobacco
5 Suggest you stop cold turkey
6 Suggest some other method to quit
8 Did NOT suggest a method to quit
7 Don't know/Not sure
9 Refused

State Added: Secondhand Smoking [FORM A]

SASSQ1 Not counting decks, porches, or garages, during the past 7 days, that is since last [TODAY'S DAY OF WEEK], on how many days did someone other than you smoke tobacco inside your home while you were at home?
___ NUMBER OF DAYS [1-7]
88 NONE
77 Don't Know/Not Sure
99 Refused

State Added: Marijuana Use [FORM A]

SAMUQ1 During the past 30 days, on how many days did you use marijuana or cannabis?

[INTERVIEWER NOTE: Answer "No" If respondent asks whether Cannabidiol, CBD or medical marijuana should be included in their answer]

    _ _ 01-30 Number of Days
    88 None
    77 Don't know/not sure
    99 Refused

State Added: Opioid Use

SAOUQ1 In the past year, did you take any prescription opioid pain relievers such as hydrocodone, codeine, oxycodone, morphine, Lortab, Vicodin, Tylenol #3, Percocet, or OxyContin?

[Interviewer reminder: We only want to know about prescription medication NOT medication that is available over the counter.]

    1 Yes
    2 No [Skip to next module]
    7 Don't know/Not sure [Skip to next module]
    9 Refused [Skip to next module]

SAOUQ2 In the past year, did you take any of the opioid pain medications more frequently or in higher doses than directed by a doctor?

    1 Yes
    2 No
    7 Don't know/Not sure
    9 Refused

SAOUQ3 In the past year, have you taken any prescription opioid pain relievers (hydrocodone, codeine, oxycodone, morphine, Lortab, Vicodin, Tylenol #3, Percocet, OxyContin) when it was NOT prescribed to you by a doctor, dentist, nurse practitioner, or other healthcare provider?

[Interviewer reminder: We only want to know about prescription medication NOT medication that is available over the counter.]

    1 Yes
    2 No
    7 Don't know/Not sure
    9 Refused

Thank you for answering these questions. If you would like assistance or more information about opioid-related issues, please contact Your Life Iowa by calling 855-581-8111, texting 855-895-TEXT(8398) or visiting www.yourlifeiowa.org. Your Life Iowa offers free and confidential support for those in need or concerned about others.

State Added: Neighborhood Physical Activity [FORM B]

SANPQ1 Overall, how would you rate your neighborhood as a place to walk? Would you say...

    1 Very pleasant
    2 Somewhat pleasant
    3 Not very pleasant
    4 Not at all pleasant
    7 Don't Know/Not Sure
    9 Refused

SANPQ2 Does your neighborhood have any sidewalks?

    1 Yes
    2 No
    7 Don't Know/Not Sure
    9 Refused

SANPQ3 Do you use schools that are open in your community for public recreation activities?

    1 Yes
    2 No
    3 Schools in my community are not open for the public to use
    7 Don't Know/Not Sure
    9 Refused

SANPQ4 Do you use walking trails, parks, playgrounds, sports fields in your community for physical activity?

[INTERVIEWER NOTE: If respondent asks whether biking is included, accept response.]

    1 Yes
    2 No
    3 My community does not have these facilities
    7 Don't Know/Not Sure
    9 Refused

Module 22: Adverse Childhood Experiences

I'd like to ask you some questions about events that happened during your childhood. This information will allow us to better understand problems that may occur early in life, and may help others in the future. This is a sensitive topic and some people may feel uncomfortable with these questions. At the end of this section, I will give you a phone number for an organization that can provide information and referral for these issues. Please keep in mind that you can ask me to skip any question you do not want to answer.

All questions refer to the time period before you were 18 years of age.
Interviewer Note: Be aware of the level of stress introduced by questions in this section and be familiar with the crisis plan.

M22.01 Now, looking back before you were 18 years of age---.
Did you live with anyone who was depressed, mentally ill, or suicidal?

    1 Yes
    2 No
    7 Don't Know/Not Sure
    9 Refused

M22.02 Did you live with anyone who was a problem drinker or alcoholic?

    1 Yes
    2 No
    7 Don't Know/Not Sure
    9 Refused

M22.03 Did you live with anyone who used illegal street drugs or who abused prescription medications?

    1 Yes
    2 No
    7 Don't Know/Not Sure
    9 Refused

M22.04 Did you live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility?

    1 Yes
    2 No
    7 Don't Know/Not Sure
    9 Refused

M22.05 Were your parents separated or divorced?

    1 Yes
    2 No
    8 Parents not married
    7 Don't Know/Not Sure
    9 Refused

M22.06 How often did your parents or adults in your home ever slap, hit, kick, punch or beat each other up? Was it…
Read:

    1 Never
    2 Once
    3 More than once

Don't Read:

    7 Don't know/Not Sure
    9 Refused

M22.07 Not including spanking, (before age 18), how often did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way? Was it—
Read:

1 Never
2 Once
3 More than once

Don't Read:

7 Don't know/Not Sure
9 Refused

M22.08 How often did a parent or adult in your home ever swear at you, insult you, or put you down? Was it…

1 Never
2 Once
3 More than once

Don't Read:

7 Don't know/Not Sure
9 Refused

M22.09 How often did anyone at least 5 years older than you or an adult, ever touch you sexually? Was it…

1 Never
2 Once
3 More than once

Don't Read:

7 Don't know/Not Sure
9 Refused

M22.10 How often did anyone at least 5 years older than you or an adult, try to make you touch them sexually? Was it…

1 Never
2 Once
3 More than once

Don't Read:

7 Don't know/Not Sure
9 Refused

M22.11 How often did anyone at least 5 years older than you or an adult, force you to have sex? Was it…

1 Never
2 Once
3 More than once

Don't Read:

7 Don't know/Not Sure
9 Refused

Would you like for me to provide a toll-free number for an organization that can provide information and referral for the issues in the last few questions?
(If yes) You can dial 1-800-422-4453 to reach a referral service to locate an agency in your area.

State Added: Resiliency [FORM B]

The next questions also refer to the time before you were eighteen years of age.

SARQ1 Thinking about when you were in high school, how often did you feel like you belonged? Would you say...

1 Never,
2 Rarely,
3 Sometimes,
4 Often, or
5 Very often?
8 Did not attend High School
7 Don't know/Not Sure
9 Refused

Note: (If respondent attended multiple high schools, ask respondent to respond about the high schools in general.)

SARQ2 How often did you feel supported by your friends? Would you say...

1 Never,
2 Rarely,
3 Sometimes,
4 Often, or

5 Very often?
7 Don't know/Not Sure
9 Refused

Note: (If respondent says some friends did/didn't, ask respondent to answer about friends in general.)

SARQ3 How often were there at least two adults, other than your parents, who took a genuine interest in you? Would you say...

1 Never,
2 Rarely,
3 Sometimes,
4 Often, or
5 Very often?
7 Don't know/Not Sure
9 Refused

SARQ4 How often did you feel that you were able to talk to your family about your feelings? Would you say...

1 Never,
2 Rarely,
3 Sometimes,
4 Often, or
5 Very often?
7 Don't know/Not Sure
9 Refused

SARQ5 How often did you enjoy participating in your community's traditions? Would you say...

1 Never,
2 Rarely,
3 Sometimes,
4 Often, or
5 Very often?
7 Don't know/Not Sure
9 Refused

Note: If respondent asks what we mean by "community" or "traditions", say "whatever it means to you.

SARQ6 How often did you feel your family stood by you during difficult times? Would you say...

1 Never,
2 Rarely,
3 Sometimes,
4 Often, or
5 Very often?
7 Don't know / Not Sure
9 Refused

Note: If respondent says some family members did/didn't, ask respondent to answer about family in general. If respondent's family situation was complicated, say "whoever you considered your family when you were growing up".

State Added: Mental Health [FORM B]

Now, I am going to ask you some questions about how you have been feeling lately.

SAMHQ1 About how often during the past 30 days did you feel nervous — would you say all of the time, most of the time, some of the time, a little of the time, or none of the time?

1 All
2 Most
3 Some
4 A little
5 None
7 Don't know/Not sure
9 Refused

SAMHQ2 During the past 30 days, about how often did you feel hopeless — all of the time, most of the time, some of the time, a little of the time, or none of the time?

    1 All
    2 Most
    3 Some
    4 A little
    5 None
    7 Don't know/Not sure
    9 Refused

SAMHQ3 During the past 30 days, about how often did you feel restless or fidgety? [If necessary: all, most, some, a little, or none of the time?]
    1 All
    2 Most
    3 Some
    4 A little
    5 None
    7 Don't know/Not sure
    9 Refused

SAMHQ4 During the past 30 days, about how often did you feel so depressed that nothing could cheer you up? [If necessary: all, most, some, a little, or none of the time?]
    1 All
    2 Most
    3 Some
    4 A little
    5 None
    7 Don't know/Not sure
    9 Refused

SAMHQ5 During the past 30 days, about how often did you feel that everything was an effort?
INTERVIEWER NOTE: If respondent asks what does "everything was an effort" mean say, "Whatever it means to you" [If necessary: all, most, some, a little, or none of the time?]
    1 All
    2 Most
    3 Some
    4 A little
    5 None
    7 Don't know/Not sure
    9 Refused

SAMHQ6 During the past 30 days, about how often did you feel worthless? [If necessary: all, most, some, a little, or none of the time?]
    1 All
    2 Most
    3 Some
    4 A little
    5 None
    7 Don't know/Not sure
    9 Refused

State Added: Screen Time [FORM B]

SASCRNQ1 On days when you are not at work or school, how many hours do you spend watching devices such as TV, phone, computer, games consoles, and tablets, while sitting or lying down?
    1. Less than 1 hour
    2. 1 hour to less than 2 hours
    3. 2 hours to less than 3 hours
    4. 3 hours to less than 4 hours
    5. 4 hours to less than 5 hours
    6. 5 hours or more
    8. None
    7. Don't Know/Not Sure
    9. Refused

State Added: Volunteerism [FORM A]

SAVLTRQ1 During the past year, have you spent time volunteering?
[INTERVIEWER NOTE: Read if necessary: Volunteering is providing unpaid work to benefit a charitable organization, community or faith based group, cause or non-family member in need.]
    1 Yes [Go to SAVLTRQ2]
    2 No [GO TO NEXT SECTION]
    7 Don't know/Not sure [GO TO NEXT SECTION]
    9 Refused [GO TO NEXT SECTION]

SAVLTRQ2 On average, how many hours did you volunteer a month?
    __ __ __ Hours
    250 250 hours or more
    777 Don't know/Not sure
    999 Refused

State Added: Gambling

SAGQ1 Have you gambled or bet for money or possessions in the past 12 months?
    1 Yes
    2 No
    7 Don't know/Not sure
    9 Refused

SAGQ2 During the past 12 months, have you become restless, irritable or anxious when trying to stop or cut down on gambling?
    1 Yes
    2 No
    7 Don't know/Not sure
    9 Refused

SAGQ3 During the past 12 months, have you tried to keep your family or friends from knowing how much you gamble?
    1 Yes
    2 No
    7 Don't know/Not sure
    9 Refused

SAGQ4 During the past 12 months, did you have such financial trouble as a result of your gambling that you had to get help with living expenses from family, friends, or welfare?
    1 Yes
    2 No
    7 Don't know/Not sure
    9 Refused

Asthma Call-Back Permission Script

We would like to call you again within the next 2 weeks to talk in more detail about your experiences with asthma. The information will be used to help develop and improve the asthma programs in Iowa. The information you gave us today and any you give us in the future will be kept confidential. If you agree to this, we will keep your first name or initials and phone number on file, separate from the answers collected today. Even if you agree now, you or others may refuse to participate in the future. Would it be okay if we called you back to ask additional asthma-related questions at a later time?
    1 Yes
    2 No

Can I please have your first name or initials, so we will know who to ask for when we call back?
_____ Enter first name or initials.
What is a good time to call you back? For example evenings, days, or weekends?
_____ Enter call-back time

Closing Statement

Cell Phone

That was my last question. Everyone's answers will be combined to help us provide information about the health practices of people in this state. Thank you very much for your time and cooperation.

Landline

That was my last question. Everyone's answers will be combined to help us provide information about the health practices of people in Iowa. Also, I want to let you know that my supervisor will be checking my work and may be calling you back in a few weeks just to see how the interview went. Thank you very much for your time and cooperation.

Physical Activity Coding List

To be used for Section 11: Exercise

01 Active Gaming Devices (Wii Fit, Dance, Dance revolution)
02 Aerobics video or class
03 Backpacking
04 Badminton
05 Basketball
06 Bicycling machine exercise
07 Bicycling
08 Boating (Canoeing, rowing, kayaking, sailing for pleasure or camping)
09 Bowling
10 Boxing
11 Calisthenics
12 Canoeing / rowing in competition
13 Carpentry
14 Dancing-ballet, ballroom, Latin, hip hop, Zumba, etc.
15 Elliptical / EFX machine exercise
16 Fishing from river bank or boat
17 Frisbee
18 Gardening (spading, weeding, digging, filling)
19 Golf (with motorized cart)
20 Golf (without motorized cart)
21 Handball
22 Hiking – cross-country
23 Hockey
24 Horseback riding
25 Hunting large game – deer, elk
26 Hunting small game – quail
27 Inline Skating
28 Jogging
29 Lacrosse
30 Mountain climbing
31 Mowing lawn
32 Paddleball
33 Painting / papering house
34 Pilates
35 Racquetball
36 Raking lawn/trimming hedges
37 Running
38 Rock climbing
39 Rope skipping
40 Rowing machine exercises
41 Rugby
42 Scuba diving
43 Skateboarding
44 Skating – ice or roller
45 Sledding, tobogganing
46 Snorkeling

47 Snow blowing
48 Snow shoveling by hand
49 Snow skiing
50 Snowshoeing
51 Soccer
52 Softball/Baseball
53 Squash
54 Stair climbing/Stair master
55 Stream fishing in waders
56 Surfing
57 Swimming
58 Swimming in laps
59 Table tennis
60 Tai Chi
61 Tennis
62 Touch football
63 Volleyball
64 Walking
66 Waterskiing
67 Weight lifting
68 Wrestling
69 Yoga
71 Childcare
72 Farm / Ranch Work (caring for livestock, stacking hay, etc.)
73 Household Activities (vacuuming, dusting, home repair, etc.)
74 Karate / Martial Arts
75 Upper Body Cycle (wheelchair sports, ergometer
76 Yard work (cutting/gathering wood, trimming, etc.)
98 Other_____
99 Refused

Iowa Department of Public Health

Protecting and Improving the Health of Iowans