Iowa Department of Public Health

IDPH

BRFSS

Health in Iowa BRFSS Annual Report

From the Iowa 2016 Behavioral Risk Factor Survey

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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 2016, BRFSS collected 7,257 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, tobacco use, alcohol consumption, body weight, physical activity, nutrition, diabetes, respiratory conditions, immunizations, cancer screening and HIV/AIDS testing. Comparisons are made to other states and to *Healthy People 2020* and *Healthy Iowans* goals.

Significant findings for 2016 include:

- The downward trend in the percentage of people without health care coverage leveled off.
- Only four states had a lower rate of current asthma.
- Although the percentage of obese Iowans was steady, the percentage of Iowans above a healthy weight was the highest in six years.
- Cigarette smoking showed a decline, especially in the youngest age group. This is likely due, in part, to a switch to e-cigarettes.
- There were only four states with a higher prevalence of reported binge drinking, and only two states that had a higher percentage reporting driving while intoxicated.
- The percentage of Iowans age 65 and older who received a flu vaccination ranked second among states.
- Prevalence of people receiving a pneumonia shot was the highest in six years for the second year in a row.
- There were only two states with a lower percentage than Iowa for people being tested for HIV.
- The percentage of adults reporting being diagnosed with depression was the lowest level found in the past six years, and was a major reversal of the trend from previous years.

Glossary

95 percent confidence interval: a range of values in which there is a 95 percent 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.

Colonoscopy: a test that uses a hollow, lighted tube to inspect the interior walls of the rectum and the entire colon.

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.

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.

Mammography: an x-ray examination of the breast to detect abnormalities.

Papanicolaou (Pap) test: The principal screening test for cervical cancer.

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.

Precancerous Polyps: abnormal growths in the colon and rectum that can develop into colorectal cancer.

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.

Sigmoidoscopy: a test that uses a hollow, lighted tube to inspect a segment of the colon.

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.

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
CHD……………………………………………………………………………………Coronary Heart Disease
CI………………………………………………………………………………….Confidence Interval
COPD………………………………………………………………………… Chronic Obstructive Pulmonary Disease
CVD……………………………………………………………………………….Cardiovascular Disease
DSS……………………………………………………………………Disproportionate Stratified Sampling
FMD…………………………………………………………………………………….Frequent Mental Distress
FOBT………………………………………………………………………………… Fecal Occult Blood Test
HIV……………………………………………………………………………….Human Immunodeficiency Virus
HPV……………………………………………………………. ……………Human Papilloma Virus
HRQOL. ………………………………………………………………………Health-Related Quality Of Life
IDPH ……………………………………………………………………. Iowa Department of Public Health
MI……………………………………………………………………………………Myocardial Infarction
NRT………………………………………………………………………… Nicotine Replacement Therapy
PSA……………………………………………………………………..Prostate Specific Antigen
SHS………………………………………………………………………. Secondhand Smoke
SIDS ……………………………………………………………………Sudden Infant Death Syndrome
TLC……………………………………………………………………….. ………………..Therapeutic Lifestyle Changes

1. Introduction

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 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 2016. Some of the health-related issues discussed are general health status, health care access, cancer screening, tobacco use, alcohol consumption, body weight, physical activity, oral health, diabetes, respiratory conditions, immunizations and HIV/AIDS awareness.

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.

2. Methodology

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. 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. There was also an eighth stratum that oversampled counties of special interest to the diabetes program.

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 percent 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 not interviewed if they were. 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 2016 for a total sample size of 7,257. Of these, 3,728 were landline and 3,529 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 25.8 minutes for landline, and 23.5 minutes for cell phone. The response rate, defined as completed interviews + partial completes divided by all eligible households called, was 53 percent for landline and 55 percent 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 3 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.

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[*]Cell phone statistics are only for those done by our contractor. Some cell phone interviews of Iowa residents are done by other states.

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. New 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.

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 his or her 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 charts and 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 percent confidence interval (CI). Charts will indicate this by use of a black line at the end of the bars in the chart. The end of the bar is the sample value, while the value in the population is probably somewhere in the range represented by the

line. 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, educational level and especially race/ethnicity means there are a smaller number of interviews in each 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 percent) 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 percent of the sample interviewed is male. To solve 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.

Unfortunately, this weighting method has only been in place since 2011. This has disrupted trend information for the data. Trend information in this report will only be determined from 2011 forward. Even comparisons of data from 2011 may be unsound for optional module and state added questions, since 2012 is the first year cell phone interviews have been conducted for these.

References

1. AAPOR Cell Phone Task Force. *New Considerations for Survey Researchers When Planning and Conducting RDD Telephone Surveys in the U.S. with Respondents Reached via Cell Phone Numbers*. 2010.

2. Blumberg SJ. and Luke JV. *Wireless Substitution: Early Release of Estimates from the National Health Interview Survey: July–December 2016*. 2017.

3. Demographics of the BRFSS Respondents

The 7,257 respondents to the BRFSS for the year 2016 included 3,204 males and 4,052 females age 18 years and older. 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 Year 2016

Age	Male		Female		Total	
	#	%	#	%	#	%
18-24	202	2.8	182	2.5	384	5.3
25-34	318	4.4	344	4.7	662	9.1
35-44	358	4.9	395	5.4	753	10.4
45-54	508	7.0	517	7.1	1,025	14.1
55-64	749	10.3	867	12.0	1,616	22.3
65-74	634	8.7	832	11.5	1,466	20.2
75+	419	5.8	869	12.0	1,2891	17.8
Unknown	16	0.2	46	0.6	62	0.8
Total	3,204	44.2	4,052	55.8	7,257	100.0

Since 2013 race and ethnicity were broken down into much finer categories than in the past. However, the numbers for these in Iowa are so small that we are continuing to display the same categories used in the past.

Table 3.2: Distribution of Iowa Survey Respondents by Race/Ethnicity
for Year 2016

Race/Ethnicity	# of Total Respondents	% of Total Respondents
White Non-Hispanic	6,690	92.2
Black Non-Hispanic	124	1.7
Other Non-Hispanic2	143	2.0
Hispanic	217	3.0
Unknown/Refused	83	1.1
Total	7,257	100.0

[1] One respondent refused to give sex.
[2] Other Non-Hispanic and Multiracial are combined.

Table 3.3: Distribution of Iowa Survey Respondents by Level of Education for Year 2016

Level of Education	# of Total Respondents	% of Total Respondents
Less than High School	384	5.3
High School Grad or GED	2,431	33.5
Some College or Technical School	2,103	29.0
College Graduate	2,328	32.1
Unknown/Refused	11	0.2
Total	7,257	100.0

Table 3.4: Distribution of Iowa Survey Respondents by Annual Household Income for Year 2016

Household Income	# of Total Respondents	% of Total Respondents2
<$15,000	453	6.2
$15,000-$24,999	924	12.7
$25,000- 34,999	657	9.1
$35,000-$49,999	962	13.3
$50,000-$74,999	1,172	16.1
>=$75,000	1,935	26.7
Unknown/Refused	1,154	15.9
Total	7,257	100.0

4. General Health Status and Health-Related Quality of Life

Background

General health status defined by responses to a single question such as "How is your health, in general?" have been found to be significant predictors of mortality. Additional studies that controlled for objective health status, age, sex, life satisfaction, income, residence and other factors continue to find that the risk of mortality is two to six times greater for those individuals who had reported earlier that their health was bad or poor, compared to those who had reported their health as excellent (DeSalvo, Bloser, Reynolds, He, & Muntner, 2006). The risk associated with poor self-rated health was actually higher than the risks associated with poor health status assessments by a physician.

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, 2016). Physicians have often used HRQOL to measure the effects of chronic illness in their patients to understand better how an illness interferes with a person's day-to-day life. Similarly, public health professionals use health-related quality of life to measure the effects of numerous disorders, short- and long-term disabilities, and diseases in different populations. Tracking health-related quality of life in different populations can identify subgroups with poor physical or mental health and can help guide policies or interventions to improve their health.

Self-ratings of health, or health-related quality of life, seek to determine how people perceive their own health and how well they function physically and psychologically during their usual daily activities. These indicators are important because they can assess dysfunction and disability that are not measured by standard morbidity and mortality measures.

General Health Status Results

In 2016, when asked how their health was in general, 17.8 percent of respondents reported that it was excellent. Another 37.5 percent said it was very good. While 30.8 percent reported good health, 13.9 percent rated their health as fair or poor. This is somewhat worse than the figure from 2015, when 13 percent 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). While only 5.6 percent of those from households earning $75,000 or more per year reported fair or poor health, 39.5 percent of those from households earning less than $15,000 per year did so. Other respondents who were more likely to report having fair or poor health were those with less than a high school education, Hispanics, and Non-Hispanics of other race or multi-racial. Those with a college education, those with household incomes $50,000 or higher and those age 18 to 34 years all reported less than 10 percent with fair or poor health.

In answer to the question about how many days during the past 30 days was their physical health not good, 68.5 percent of respondents reported none of the days and 9.6 percent reported 14 days or more.

Figure 4.1: Percentage of Self-Reported Fair or Poor General Health Status by year

	2011	2012	2013	2014	2015	2016
Year	2011	2012	2013	2014	2015	2016
Status	13.0	14.0	14.4	13.6	13.0	13.9

Year
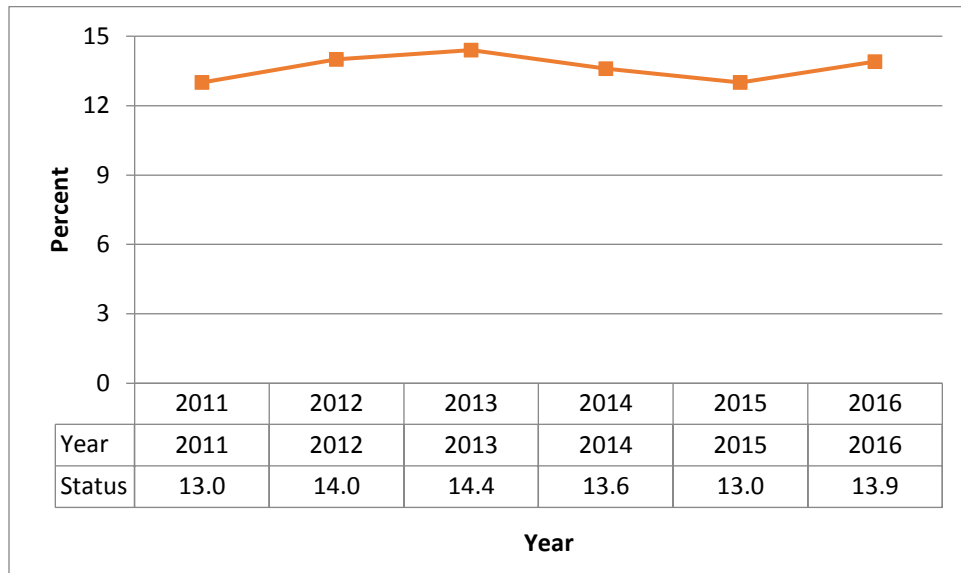
As shown in Table 4.2, more females, older age, lower education and lower income people reported 14 or more bad physical health days.

People with household incomes less than $15,000 reported 27.3 percent having 14 or more bad physical health days, while people with household incomes of $75,000 or more had only 3.1 percent.

When responding to the question of how many days during the past 30 days their mental health was not good, 69.6 percent of the respondents indicated none of the days and 10 percent reported 14 or more days. Fourteen or more days in the past 30 of bad mental health is referred to as frequent mental distress (FMD). Table 4.2 shows the pattern for FMD.

Men, older people, those with high education and those with high income had a lower prevalence of FMD.

An annual household income of $15,000 or less had the highest percentage of people with FMD (23.5%). Those who were age 75 and older had the lowest prevalence of FMD (4.4%).

When asked how many days poor physical or mental health kept them from performing their usual activities, 60.5 percent of those with some days of either bad physical or mental health said none. On the other hand, 12.5 percent said 14 days or more. This level increased with increasing age, decreasing education and decreasing income.

Comparison with Other States

The percentage of people rating their health as fair or poor throughout the states and District of Columbia ranged from 11.6 percent to 26.3 percent. The median value was 16.4 percent. Iowa ranked in the top 10 best states, with only 13.9 percent rating their health as fair or poor.

Table 4.1: Percentage of Self-Reported Fair or Poor General Health Status, 2016

DEMOGRAPHIC GROUPS	General Health Status Fair or Poor	
	%	C.I. (95%)
TOTAL	13.9	(12.9-14.9)
SEX		
Male	12.7	(11.3-14.1)
Female	15.1	(13.5-16.7)
RACE/ETHNICITY		
Non-Hispanic White	12.6	(11.6-13.6)
Black Non-Hispanic	15.9	(8.6-23.2)
Other Non-Hispanic	28.1	(19.4-36.9)
Hispanic	26.1	(18.6-33.5)
AGE		
18-24	7.6	(4.7-10.5)
25-34	8.3	(5.9-10.7)
35-44	11.3	(8.4-14.2)
45-54	15.1	(12.6-17.6)
55-64	18.8	(16.4-21.2)
65-74	16.2	(13.9-18.5)
75+	22.7	(19.7-25.6)
EDUCATION		
Less Than H.S.	30.3	(24.6-36.0)
H.S. or G.E.D.	17.6	(15.8-19.4)
Some Post-H.S.	11.6	(10.0-13.2)
College Graduate	6.2	(5.2-7.2)
HOUSEHOLD INCOME		
<$15,000	39.5	(33.4-45.6)
$15,000- 24,999	25.3	(21.6-29.0)
$25,000- 34,999	17.6	(13.7-21.5)
$35,000- 49,999	11.2	(8.8-13.6)
$50,000- 74,999	7.4	(5.6-9.2)
$75,000+	5.6	(4.2-7.0)

References

1. Centers for Disease Control and Prevention. *Health Related Quality of Life (HRQOL)*. 2016. Available at http://www.cdc.gov/hrqol/.

2. DeSalvo KB, Bloser N, Reynolds K, He J, and Muntner P. Mortality Prediction with a Single General Self-Rated Health Question: A Meta-Analysis. *Journal of General Internal Medicine.* Springer, New York: Vol. 21, Number 3, March 2006, 267-275.

Table 4.2: Percentage of Reported Days of Poor Physical or Mental Health in Past 30 Days, 2016

DEMOGRAPHIC GROUP	14 –30 Days of Poor Physical Health		14 –30 Days of Poor Mental Health (FMD)	
	%	C.I. (95%)	%	C.I. (95%)
TOTAL	9.6	(8.8-10.4)	10.0	(9.0-11.0)
SEX				
Male	7.8	(6.8-8.8)	7.4	(6.2-8.6)
Female	11.3	(9.9-12.7)	12.4	(10.8-14.0)
RACE/ETHNICITY				
White/Non-Hisp.	9.5	(8.7-10.3)	9.7	(8.7-10.7)
Black/Non-Hisp	10.2	(4.4-16.0)	10.1	(3.6-16.6)
Other/Non-Hisp	15.0	(7.7-22.2)	17.3	(9.9-24.8)
Hispanic	6.5	(3.0-10.0)	9.1	(4.4-13.8)
AGE GROUP				
18-24	6.6	(3.9-9.3)	16.7	(12.6-20.8)
25-34	6.0	(3.8-8.2)	11.5	(8.8-14.2)
35-44	5.2	(3.4-7.0)	9.5	(7.1-11.9)
45-54	10.5	(8.3-12.7)	11.4	(9.0-13.8)
55-64	13.4	(11.4-15.4)	8.3	(6.7-9.9)
65-74	12.0	(10.0-14.0)	5.6	(4.1-7.1)
75+	15.9	(13.3-18.5)	4.4	(3.2-5.7)
EDUCATION				
Less than H.S.	14.6	(10.5-18.7)	15.0	(10.1-19.9)
H.S. or G.E.D.	11.9	(10.3-13.5)	11.1	(9.3-12.9)
Some Post-H.S.	9.3	(7.7-10.9)	10.3	(8.5-12.1)
College Grad.	5.1	(4.1-6.1)	6.1	(4.7-7.5)
HOUSEHOLD INCOME				
< $15,000	27.3	(22.0-32.6)	23.5	(18.2-28.8)
$15,000- 24,999	17.5	(14.4-20.6)	16.4	(12.9-19.9)
$25,000- 34,999	10.2	(7.3-13.1)	12.1	(8.6-15.6)
$35,000- 49,999	9.4	(7.0-11.8)	8.1	(5.9-10.3)
$50,000- 74,999	5.8	(4.0-7.6)	7.4	(5.2-9.6)
$75,000+	3.1	(2.1-4.1)	5.2	(3.8-6.6)

5. Insurance Coverage and
Access to Health Care

Background

Access to health care is important for the prevention of disease, the detection of illness through screening, treatment and management of illness and injuries. Adults who have a usual source of care are much more likely to use the health care system and obtain needed services (National Center for Health Statistics, 2011).

For those who lack health insurance, it may be impossible to obtain adequate health care. This not only includes expensive surgery and hospital stays, but also preventive care, management of chronic disorders such as diabetes or hypertension, and emergency treatment. Such a lack of access to health care allows small easily-treatable problems to become major health problems for many individuals (Hadley, 2007).

Accurate estimates of the uninsured are important to obtain. The landscape of health care coverage is rapidly changing with the implementation of the Affordable Care Act. It is critical to evaluate the effects of these vast changes in the health care delivery system.

Health care costs have increased. This is especially true of particular sectors of costs, such as pharmaceuticals. Such increases hit harder on individuals without health insurance and those living on fixed incomes. Both access and affordability of health care are important areas to monitor.

Insurance Coverage and Access to Health Care Results

In 2016, 6.5 percent of adult Iowans reported they had no health insurance. In 2015, the figure was 6.3 percent. For Iowans between age 18 and 64 years old, the figure was 7.8 percent, which is identical to the previous year (see figure 5.1). All remaining findings for coverage are for this age group, since almost everyone 65 years and older is covered by Medicare. It appears that the rapid decline in people without coverage, which has been seen in recent years, has stopped.

Table 5.1 shows that for people between ages 18 and 64 years, more males, younger people, less educated people, people with lower incomes, and racial and ethnic minorities were more likely to lack any health care coverage. People with less than a high school education had the highest percentage of individuals without health care coverage (27%). Both college graduates and people from households earning $75,000 per year had fewer than 3 percent having no coverage.

Two other demographic variables that had an impact on health care coverage were employment status and marital status. Unemployed Iowans reported 17.6 percent being not covered by health insurance, while 6 percent of employed or self-employed were not covered. Unemployed here excludes people who are retired or unable to work.

People who were married were much more likely to have health care coverage than those who were not. Only 4.4 percent of married respondents were without coverage, while 11.8 percent of unmarried respondents were not covered

Figure 5.1: No Health Insurance Coverage Trend 2011 – 2016
Iowans Age 18-64

Year	2011	2012	2013	2014	2015	2016
	14.2	13.4	12.7	9.6	7.8	7.8
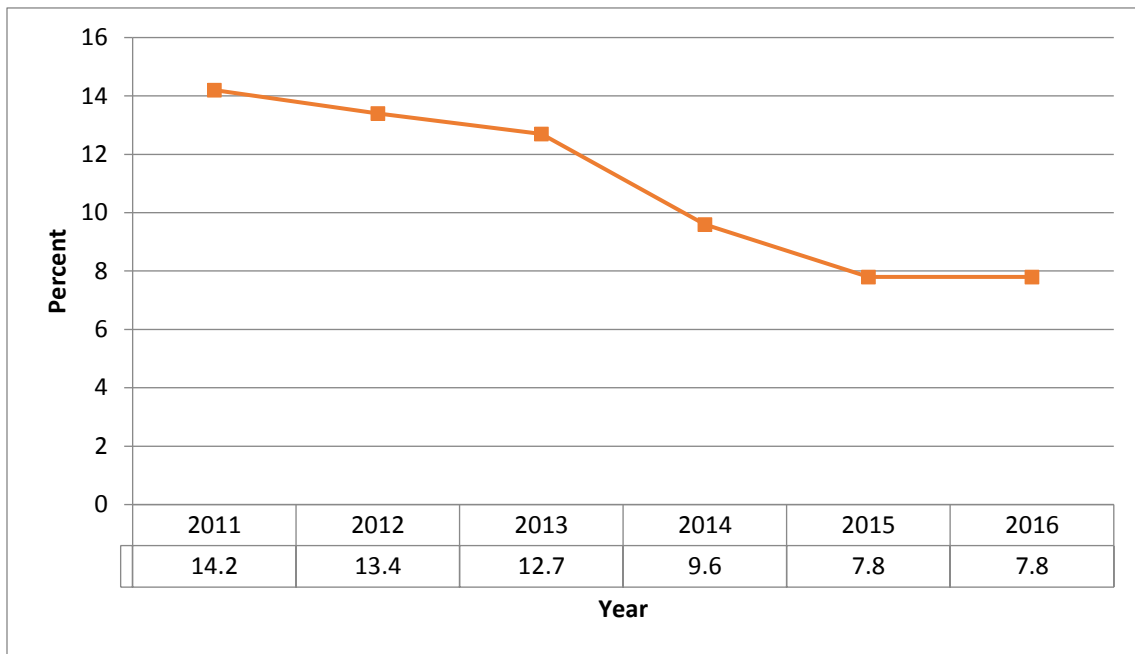
When asked if there was a time in the past 12 months when they needed to see a doctor but could not because of the cost, 7.7 percent of all adult Iowans said that there was. The percentage was higher for younger people, people with less education, people with lower incomes and racial and ethnic minorities. The youngest age group departed from these trends having a lower percentage who could not afford cost than the next higher group (see table 5.2). The lowest percentages were found in people with annual household incomes of $75,000 or more and people age 65 and over. These both had just over 2 percent not covered. The highest percentages were found in people from households earning less than $15,000 per year and in non-Hispanic people of other races or multi-racial. These both had nearly 21 percent not covered.

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 77.2 percent of adult Iowans. Women, White non-Hispanics, older people, people with more education and people with higher household incomes were more likely to report a regular provider. Hispanics were least likely to report one regular provider (61.2%), while those age 65 years old and older were most likely (87.5%).

When asked how long it had been since their last regular checkup, 71.6 percent said less than one year. On the other end, 1 percent said they had never had a checkup. Females or older people were more likely to have a checkup in the past year. Iowans who were 65 years old or older were most likely to have a checkup (88.6%), while those from age 25 to 34 years were least likely (58.8%). Non-Hispanic people of other race or multi-racial also had fewer than 60 percent with an annual checkup.

Table 5.1
Percentage of Iowans age 18-64 lacking health insurance, 2016

DEMOGRAPHIC GROUPS	No Health Insurance Coverage Age 18-64	
	%	C.I. (95%)
TOTAL	7.8	(6.6-9.0)
SEX		
Male	8.8	(7.2-10.4)
Female	6.8	(5.2-8.4)
RACE/ETHNICITY		
Non-Hispanic White	5.9	(4.9-6.9)
Non-White or Hisp.	18.9	(14-23.9)
AGE		
18-24	11.0	(7.3-14.7)
25-34	9.7	(7.0-12.4)
35-44	8.9	(6.2-11.6)
45-54	5.8	(3.8-7.8)
55-64	4.3	(3.1-5.5)
65+		
EDUCATION	27.0	(19.4-34.6)
Less than H.S.	9.6	(7.4-11.8)
H.S. or G.E.D.	5.4	(3.8-7.0)
Some Post-H.S.	2.8	(1.6-4.0)
College Graduate	7.8	(6.6-9.0)
HOUSEHOLD INCOME		
Less than $15,000	17.7	(11.0-24.4)
$15,000- 24,999	17.4	(12.5-22.3)
$25,000- 34,999	12.5	(7.6-17.4)
$35,000- 49,999	11.7	(8.0-15.4)
$50,000- 74,999	3.2	(1.6-4.8)
$75,000+	2.1	(0.9-3.3)

Comparison with Other States

In the 50 states and District of Columbia, the percent of non-elderly people without health insurance ranged from 5.9 percent to 25.6 percent. Only five states had a lower percentage of residents without health insurance than Iowa did. Iowa had 7.8 percent of its non-elderly respondents reporting not having any insurance. The median for states and the District of Columbia was 12.3 percent.

Health Objectives for Iowa and the Nation

The *Healthy People* 2020 and *Healthy Iowans* goals for health insurance coverage are to see all people be covered by some form of health insurance. In Iowa, only 92.2 percent of non-elderly adults have coverage. For all adults the figure was 93.5 percent. This is short of both goals.

Having one specific source of primary care also missed the mark. *Healthy People 2020* has separate goals for people age 18 to 64 and people 65 and over. The goal for 18 to 64 is 89.2 percent, while the goal for age 65 and over is 100 percent. The results for Iowa were 74.4 percent and 87.5 percent, respectively. The *Healthy Iowans* goal for all adults was 82.5 percent. The obtained prevalence of 77.2 percent also falls short.

References

1. National Center for Health Statistics. *Health, United States, 2010: With Special Feature on Death and Dying,* Hyattsville, Maryland: 2011.

2. Hadley J. Insurance Coverage, Medical Care Use, and Short-term Health Changes Following an Unintentional Injury or the Onset of a Chronic Condition. *Journal of the American Medical Association.* Vol. 297, No. 10: March, 2007.

Table 5.2
Percentage of Responses to Health Care Access Related Questions in Iowa, 2016

DEMOGRAPHIC GROUPS	Time Couldn't Afford Help		Have One Person as Health Provider		Had Checkup in Past Year	
	%	C.I. (95%)	%	C.I. (95%)	%	C.I. (95%)
TOTAL	7.7	(6.7-8.7)	77.2	(75.8-78.6)	71.6	(70.2-73.0)
SEX						
Male	7.3	(5.9-8.7)	70.8	(68.6-73.0)	66.4	(64.2-68.6)
Female	8.1	(6.7-9.5)	83.2	(81.4-85.0)	76.6	(74.6-78.6)
RACE/ETHNICITY						
White/Non-Hisp.	6.4	(5.6-7.3)	79.0	(77.6-80.3)	72.2	(70.7-73.6)
Black/Non-Hisp.	12.4	(5.1-19.8)	67.4	(56.4-78.3)	75.9	(65.9-85.8)
Other/Non-Hisp.	20.8	(12.8-28.9)	62.7	(53.0-72.4)	59.6	(49.6-69.6)
Hispanic	19.0	(12.0-26).0	61.2	(52.6-69.8)	64.4	(56.3-72.6)
AGE						
18-24	9.1	(6.0-12.2)	62.7	(57.4-68.0)	61.6	(56.3-66.9)
25-34	13.1	(10.0-16.2)	66.7	(62.6-70.8)	58.8	(54.5-63.1)
35-44	8.2	(5.7-10.7)	74.9	(71.2-78.6)	61.8	(57.7-65.9)
45-54	8.6	(6.4-10.8)	82.3	(79.6-85.0)	70.8	(67.5-74.1)
55-64	7.4	(5.6-9.2)	82.2	(79.8-84.6)	78.9	(76.5-81.3)
65+	2.2	(1.4-3.0)	87.5	(85.9-89.1)	88.6	(87.2-90.0)
EDUCATION						
Less than H.S.	17.7	(12.2-23.2)	69.1	(62.8-75.4)	70.4	(64.3-76.5)
H.S. or G.E.D.	7.4	(6-8.8)	77.1	(74.7-79.5)	72.1	(69.7-74.5)
Some Post-H.S.	7.3	(5.7-8.9)	77.4	(75-79.8)	72.6	(70.1-75.1)
College Graduate	4.9	(3.7-6.1)	79.9	(77.7-82.1)	69.6	(67.1-72.1)
HOUSEHOLD INCOME						
Less than $15,000	20.9	(15.0-26.8)	65.9	(59.2-72.6)	66.7	(60.0-73.4)
$15,000- 24,999	12.6	(9.5-15.7)	73.6	(69.5-77.7)	75.0	(71.1-78.9)
$25,000- 34,999	8.5	(5.6-11.4)	74.1	(69.0-79.2)	69.0	(63.9-74.1)
$35,000- 49,999	10.4	(7.7-13.1)	75.5	(71.8-79.2)	66.9	(62.8-71.0)
$50,000- 74,999	5.4	(3.2-7.6)	78.7	(75.6-81.8)	72.4	(69.1-75.7)
$75,000+	2.4	(1.4-3.4)	82.5	(80.3-84.7)	71.0	(68.5-73.5)

6. Exercise and Physical Activity

Background

A lifestyle lacking in regular physical activity has been associated with an increased risk for cardio-vascular illness, cancer, osteoporosis and other debilitating conditions (National Center for Health Statistics, 2008). Despite its risks, a large proportion of people remain inactive.

Although the percentage of people who do not engage in regular physical activity remains high, many efforts are underway to try to increase the physical activity level of Iowans. The Iowa Department of Public Health is actively working to increase the physical activity levels of Iowans. A lifestyle change may be as simple as taking the stairs instead of the elevator. Interventions to increase physical activity include:

1) Creating a culture where physical activity is the easy choice.
2) Creating the commitment of Iowans to walk and bike for transportation.
3) Creating policies that enable Iowans to be physically active.
4) Increasing the number of complete streets. (A complete street is a street that has been designed with all users in mind - cars, cyclists and pedestrians.)
5) Developing recreational trails.
6) Enhancing worksite wellness programs.
7) Continuing to promote 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 Iowa.

Exercise and Physical Activity Results

In 2016, 77.3 percent of respondents reported that they had engaged in some sort of physical activity for exercise during the past month other than their regular job. This is better than in 2015, when only 73.7 percent had engaged in exercise, but is about the same as the 77.4 percent found in 2014 (see figure 6.1). Although the prevalence of exercise varies from year to year, the overall trend appears level.

A larger proportion of younger respondents reported engaging in leisure physical activity than older respondents. The percentage of respondents who exercised also increased with education and household income. This percentage was somewhat higher for White non-Hispanics than for other racial or ethnic groups and for men. The lowest percentage of all examined demographic variables was for those age 75 years and older (62.8%), while the highest was for those age 18 to 24 years (88.3%).

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 75.9 percent of Iowans rated their neighborhood as a very pleasant place to walk. Sidewalks were said to be present by 67.2 percent of Iowans. Only 27.2 percent of Iowans used schools for public recreational activity. However, 65.9 percent of Iowans said they used walking trails or parks in their community.

Figure 6.1: Percentage of Iowans engaging in leisure-time physical activity in the past 30 days by year, 2011-2016

	2011	2012	2013	2014	2015	2016
Any Exercise	74.2	76.9	71.5	77.4	73.7	77.3

Year
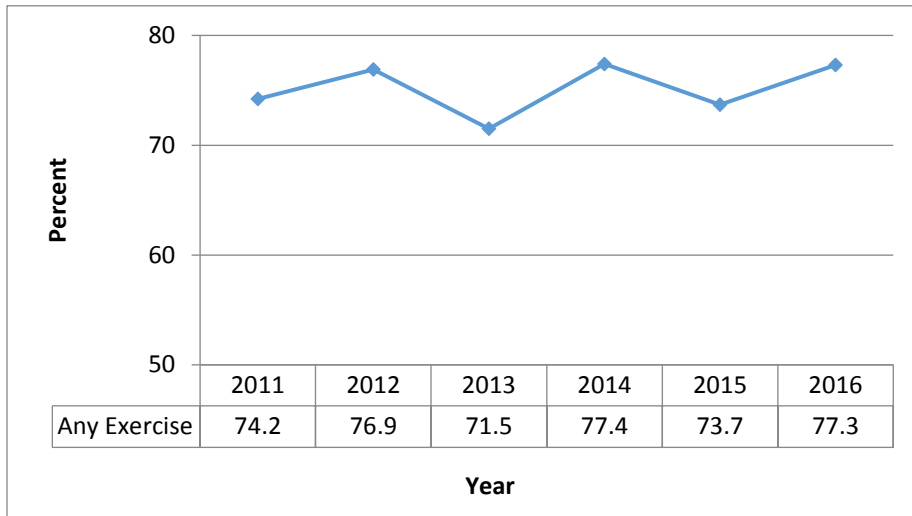
Comparison with Other States

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 15.7 percent to a high of 32.5 percent. Iowa ranked better than the median of 23.2 percent on not engaging in leisure time physical activity at 22.7 percent.

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 percent. Iowa's level of 22.7 percent is much better than this target.

References

National Center for Health Statistics. *Health, United States, 2007: With Chartbook on Trends in the Health of Americans*, Hyattsville, Maryland: 2008.

Table 6.1: Physical Activity in Iowans, 2016

Demographic Groups	Any Leisure Physical Exercise in Last Month	
	%	C.I. (95%)
TOTAL	77.3	(76.1-78.5)
SEX		
Male	78.3	(76.5-80.1)
Female	76.4	(74.6-78.2)
RACE/ETHNICITY		
White/Non-Hisp.	78.0	(76.8-79.2)
Black/Non-Hisp.	72.5	(62.8-82.2)
Other/Non-Hisp.	70.3	(61.3-79.4)
Hispanic	73.2	(65.8-80.5)
AGE		
18-24	88.3	(84.8-91.8)
25-34	80.3	(76.8-83.8)
35-44	80.4	(76.9-83.9)
45-54	76.6	(73.5-79.7)
55-64	74.9	(72.4-77.4)
65-74	72.9	(70.2-75.7)
75+	62.8	(59.4-66.2)
EDUCATION		
Less than H.S.	66.1	(60.0-72.2)
H.S. or G.E.D.	69.7	(67.3-72.1)
Some Post-H.S.	80.4	(78.4-82.4)
College Graduate	87.2	(85.6-88.8)
HOUSEHOLD INCOME		
Less than $15,000	64.1	(58.0-70.2)
$15,000- 24,999	66.9	(62.8-71.0)
$25,000- 34,999	70.5	(65.8-75.2)
$35,000- 49,999	75.1	(71.6-78.6)
$50,000- 74,999	82.9	(80.2-85.6)
$75,000+	87.3	(85.5-89.1)

7. Overweight and Obesity

Background

Overweight and obesity are among the most serious health problems in America today. Obesity is a condition linked to risk factors for heart disease, cancer and stroke, which are all leading causes of death. It is associated with type 2 diabetes, atherosclerosis (hardening of the arteries), gout, asthma, hypertension, sleep apnea and osteoarthritis (U. S. Department of Health and Human Services, 2001). Obesity has been increasing so rapidly that it may be regarded as an epidemic.

The origin of overweight involves many factors. It reflects inherited, environmental, cultural and socioeconomic traits. The increase in the prevalence of being overweight is a result of a shift in energy balance in which energy taken in from food is greater than energy used in physical activity (Centers for Disease Control and Prevention, 2016).

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; and
- Encourage employers to provide workplace wellness programs.

Exact measurements of body fat require sophisticated equipment. To eliminate this problem, obesity is often estimated from weight standards that are adjusted for body frame. Carefully measured weight and height remain the most easily performed and useful means to determine nutritional status and to predict mortality for the general population (Centers for Disease Control and Prevention, 2015).

Body mass index (BMI) is used 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 (m^2)]. 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. Obesity is considered to be a BMI greater than or equal to 30. This self-report method is likely to result in an underestimation of the actual extent of obesity. However, comparisons among states, demographic groups such as age or income levels , and years are likely to be valid. Furthermore, this is the only measure of overweight and obesity available on the state level.

Obesity and its associated health problems have a large economic impact on the United States. Medical costs associated with overweight and obesity may involve direct and indirect costs. Direct medical costs may include preventive, diagnostic and treatment services related to obesity. Indirect costs relate to morbidity and mortality costs, including productivity. In 2008 dollars, direct medical costs were estimated to be $147 billion. The annual nationwide productive costs of obesity range between $3.38 billion and $6.38 billion. Because of the large number of people in the Baby Boomer generation and its high rate of obesity, as this population ages, obesity-related costs to Medicare are likely to grow significantly. In 2007-2008, 5.7 million men and 16.5 million women who were eligible for military service exceeded the Army's enlistment standards for weight and body fat. There are other costs as well

that are more difficult to estimate. For instance, because people are fatter, airlines spend more on jet fuel and the obese themselves spend more on gasoline (Herper, 2009). It is estimated that Iowa could save 5.7 billion dollars by 2030 if BMI were lowered by just 5 percent (The Trust for America's Health, 2013).

Overweight and Obesity Results

The BRFSS data show that in 2016, 36.7 percent of non-pregnant adult Iowans were overweight and 32 percent were obese, based on BMI. The combined percentage of individuals who were overweight or obese was 68.7 percent. This combined prevalence is higher than that in 2015; however, the rate of obesity has remained the same while the rate of those overweight has increased. In 2015, 34.5 percent of non-pregnant adult Iowans were overweight and 32.1 percent were obese (see figure 7.1). The level of overweight and overweight and obesity combined were the highest they have been in the last six years.

Demographic factors behave somewhat differently for overweight and obesity. The self-reported weights show more males than females are overweight and obese. Prevalence of overweight and obesity increase with age until middle age. A large decline is seen in obesity, but not overweight, for people age 75 and older. More males are obese than females, except between ages 25 to 44. Females actually show a higher prevalence of obesity than males between ages 25 and 34.

Figure 7.1: Overweight and Obesity by Year, 2011-2016

	2011	2012	2013	2014	2015	2016
Overweight	35.8	34.3	35.7	36.0	34.5	36.7
Obesity	29.0	30.4	31.3	30.9	32.1	32.0
Combined	64.8	64.7	67.0	66.9	66.7	68.7

The effects of education and income are different for overweight and obesity as well. Obesity prevalence is lowest for college graduates, but education has little systematic effect on overweight. If anything, college graduates are slightly more likely to be overweight. Likewise, the percentage overweight tends to be lower at lower incomes. On the other hand, obesity is less

Figure 7.2: Obesity by Age and Sex, 2016
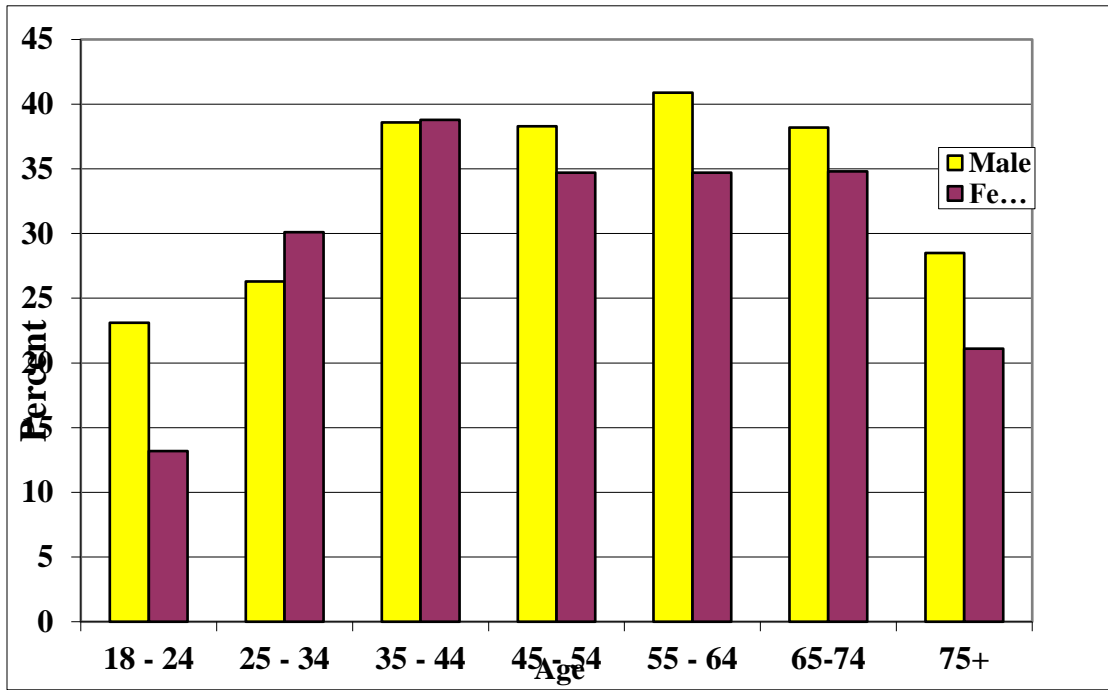
Figure 7.3: Overweight and Obesity by Income, Iowa 2016
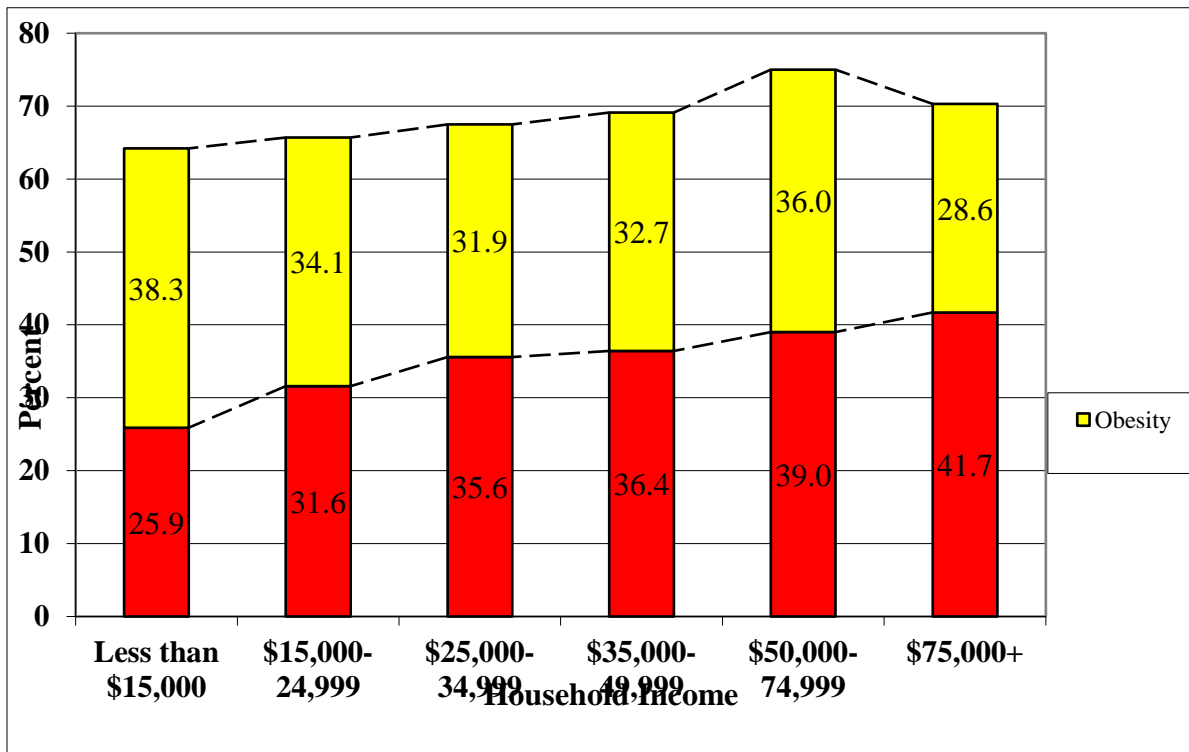
Table 7.1: Overweight and Obese Iowans Based on BMI, 2016

DEMOGRAPHIC GROUPS	Overweight		Obesity		Combined	
	%	C.I. (95%)	%	C.I. (95%)	%	C.I. (95%)
TOTAL	36.7	(35.1-38.3)	32.0	(30.6-33.4)	68.7	(67.1-70.3)
SEX						
Male	42.5	(40.3-44.7)	33.8	(31.6-36)	76.3	(74.3-78.3)
Female	30.6	(28.6-32.6)	30.0	(28.0-32.0)	60.6	(58.4-62.8)
RACE/ETHNICITY						
White/non-Hisp.	37.0	(35.4-38.6)	31.9	(30.3-33.5)	68.9	(67.3-70.5)
Black/Non-Hisp.	36.1	(24.2-48.0)	35.2	(24.3-46.1)	71.3	(60.5-82.1)
Other/Non-Hisp.	26.7	(17.8-35.6)	36.0	(25.4-46.7)	62.7	(52.6-72.8)
Hispanic	38.2	(29.5-46.9)	27.8	(19.7-35.8)	66.0	(57.2-74.8)
AGE GROUP						
18 - 24	26.3	(21.4-31.2)	18.4	(13.9-22.9)	44.8	(39.1-50.5)
25 - 34	35.8	(31.3-40.3)	28.0	(23.9-32.1)	63.9	(59.6-68.2)
35 - 44	38.0	(33.7-42.3)	38.7	(34.4-43.0)	76.7	(73.2-80.2)
45 - 54	39.3	(35.6-43.0)	36.5	(33.0-40.0)	75.9	(72.8-79.0)
55 - 64	38.1	(35.2-41.0)	38.0	(35.1-40.9)	76.0	(73.5-78.5)
65-74	38.8	(35.7-41.9)	36.6	(35.5-39.7)	75.4	(72.6-78.1)
75+	41.7	(38.1-45.2)	24.2	(21.1-27.4)	65.9	(62.6-69.2)
EDUCATION						
Less than H.S.	37.3	(30.6-44.0)	38.6	(31.7-45.5)	75.9	(70.0-81.8)
H.S. or G.E.D.	35.4	(32.9-37.9)	32.8	(30.3-35.3)	68.1	(65.6-70.6)
Some Post-H.S.	36.3	(33.6-39.0)	33.2	(30.7-35.7)	69.5	(67.0-72.0)
College Graduate	38.9	(36.4-41.4)	26.7	(24.3-29.1)	65.6	(63.1-68.1)
HOUSEHOLD INCOME						
Less than $15,000	25.9	(20.0-31.8)	38.3	(31.8-44.8)	64.2	(57.7-70.7)
$15,000- 24,999	31.6	(27.5-35.7)	34.1	(29.8-38.4)	65.8	(61.5-70.1)
$25,000- 34,999	35.6	(30.3-40.9)	31.9	(26.8-37.0)	67.5	(62.2-72.8)
$35,000- 49,999	36.4	(32.3-40.5)	32.7	(28.8-36.6)	69.1	(65.0-73.2)
$50,000- 74,999	39.0	(35.3-42.7)	36.0	(32.5-39.5)	75.0	(71.7-78.3)
$75,000+	41.7	(39.0-44.4)	28.6	(26.1-31.1)	70.3	(67.8-72.8)

common for people in households earning more than $75,000 per year (see table 7.1 and figure 7.3).

Comparison with Other States

Iowa's figure of 32 percent obese in 2016 was well above the U.S. median of 29.9 percent. The range of prevalence among the 50 states and District of Columbia for obesity ranged from a low of 22.3 percent to a high of 37.7 percent. For obesity and overweight combined, Iowa had a prevalence of 68.7 percent compared to a U.S. median of 65.4 percent.

Health Objectives for Iowa and the Nation

The *Healthy People 2020* objectives for the nation to be achieved on weight call for increasing the prevalence of healthy weight (neither overweight nor obese) to 33.9 percent among adults age 20 years and older. Iowa is well below this target, having 28.6 percent at healthy weight. The *Healthy People 2020* goal for obesity is 30.6 percent. Iowa has a prevalence of 33.2 percent for those over age 20. This does not reach the *HP 2020* target. The *Healthy Iowans* goal for obesity is 27 percent. Iowa's figure of 32 percent for all adults fails to achieve this goal.

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8. Diabetes

Background

Diabetes mellitus is a group of diseases characterized by high levels of blood glucose resulting from defects in insulin production, insulin action, or both. The most common type is type 2 diabetes, which is when the body does not use insulin properly, a condition known as insulin resistance (American Diabetes Association, 2017).

The rate of new cases of diagnosed diabetes in the United States has begun to fall, but the numbers are still very high (Centers for Disease Control and Prevention, 2016). More than 29 million people have diabetes and 86 million have pre-diabetes. Pre-diabetes often develops into full diabetes. Diabetes may affect persons of all ages, although prevalence increases with age.

Skyrocketing costs accompany this epidemic with an estimated total annual cost (direct and indirect) in 2012 of $245 billion. This figure represents a 41 percent increase over a five year period. This includes direct medical costs of $176 billion and indirect costs resulting from increased absenteeism, reduced productivity, disease-related unemployment disability and loss of productive capacity due to early mortality of another $69 billion. People with diagnosed diabetes, on average, have medical expenditures that are approximately 2.3 times higher than the expenditures would be in the absence of diabetes. Approximately one in five health care dollars is attributed to diabetes (American Diabetes Association, 2013).

The good news is that research studies have found that positive lifestyle changes can prevent or delay the onset of type 2 diabetes among high–risk adults. Lifestyle interventions include diet modification, weight loss and moderate-intensity physical activity (such as walking for two and one-half hours each week).

The complications of diabetes are many and severe. Diabetes is the seventh leading cause of death in the United States and this may underestimate it, since conditions caused by diabetes are sometimes considered the underlying cause. They can include heart disease, stroke, high blood pressure, kidney disease, blindness, diseases of the nervous system, dental disease, complications of pregnancy, lower extremity 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 lifestyles such as smoking and implementing healthy lifestyle interventions (Centers for Disease Control and Prevention, 2016).

The Diabetes Prevention and Control Program at the Iowa Department of Public Health acts as a resource for health care professionals regarding the latest guidelines for diabetes care, coordinates a statewide diabetes network and collaborates with local community projects to develop initiatives on public awareness, prevention and other areas of disease management. It also certifies programs for Medicaid reimbursement and assists certified programs in maintaining quality standards for outpatient education.

Diabetes Results

In 2016, 9.3 percent of respondents had ever been told by a physician that they have diabetes, excluding women told only during pregnancy. This is somewhat higher than the figure in 2015, when 8.8 percent

of Iowans had ever been told that they have diabetes, but very similar to the level seen in 2014 (see figure 8.1).

Table 8.1 shows that the rate of diabetes is much higher for Iowans who are older, lower in education and have a lower household income. The demographic group with the highest percentage of diagnosed diabetics is people age 65 to 74 years (22.6%), while the group with the lowest percentage is people age 18 to 24 years (0.3%) (see table 8.1).

Table 8.1: Iowans Ever Told They Had Diabetes, 2016

DEMOGRAPHIC GROUP	%	C.I. (95%)
TOTAL	9.3	(8.5-10.1)
SEX		
Male	9.1	(8.1-10.1)
Female	9.5	(8.5-10.5)
RACE/ETHNICITY		
White/Non-Hisp.	9.5	(8.7-10.3)
Black/Non-Hisp.	6.8	(1.5-12.1)
Other/Non-Hisp.	8.9	(4.2-13.6)
Hispanic	7.2	(3.7-10.7)
AGE GROUP		
18-24	0.3	(0-0.7.0)
25-34	2.0	(0.8-3.2)
35-44	3.5	(1.9-5.1)
45-54	9.0	(7.0-11.0)
55-64	13.3	(11.3-15.3)
65-74	22.6	(19.9-25.2)
75+	20.0	(17.1-22.8)
EDUCATION		
Less than H.S.	11.5	(8.2-14.8)
H.S. or G.E.D.	10.6	(9.2-12.0)
Some Post-H.S.	9.5	(8.1-10.9)
College Graduate	6.5	(5.5-7.5)
HOUSEHOLD INCOME		
Less than $15,000	14.5	(10.8-18.2)
$15,000- 24,999	14.0	(11.5-16.5)
$25,000- 34,999	11.3	(8.6-14.0)
$35,000- 49,999	9.6	(7.6-11.6)
$50,000- 74,999	7.6	(6.0-9.2)
$75,000+	5.2	(4.2-6.2)

Among individuals who had been told they had diabetes, the highest percentage reported being first diagnosed at age 46 to 60 years old (43.3%). The age group in which the least reported being first diagnosed was less than age 16 years (2.4%).

When asked if they had a test for diabetes in the past three years, 57.7 percent said they had. The highest percentage was between ages 65 and 74 (76.3%).

More attention has been given lately to pre or borderline diabetes. People who catch their diabetes before it is fully developed stand a good chance of avoiding it altogether by making lifestyle changes. In 2016, 7.8 percent of non-diabetic Iowans were told they had pre-diabetes. The highest percentage of these were also among those age 65 to 74 years (13.5%).

Comparison with Other States

The median prevalence of diagnosed diabetes for the 50 states and District of Columbia was 10.5 percent in 2016. Prevalence ranged from 6.6 percent to 15 percent. The figure for Iowa at 9.3 percent was better than the median.

References

1. American Diabetes Association. Diabetes Basics. 2017. Available at http://www.diabetes.org/diabetes-basics//?loc=db-slabnav.

Figure 8.1: Percent of Iowans with Diagnosed Diabetes per Year, 2011-2016

	2011	2012	2013	2014	2015	2016
Series2	8.2	9.7	9.3	9.5	8.8	9.3

Year
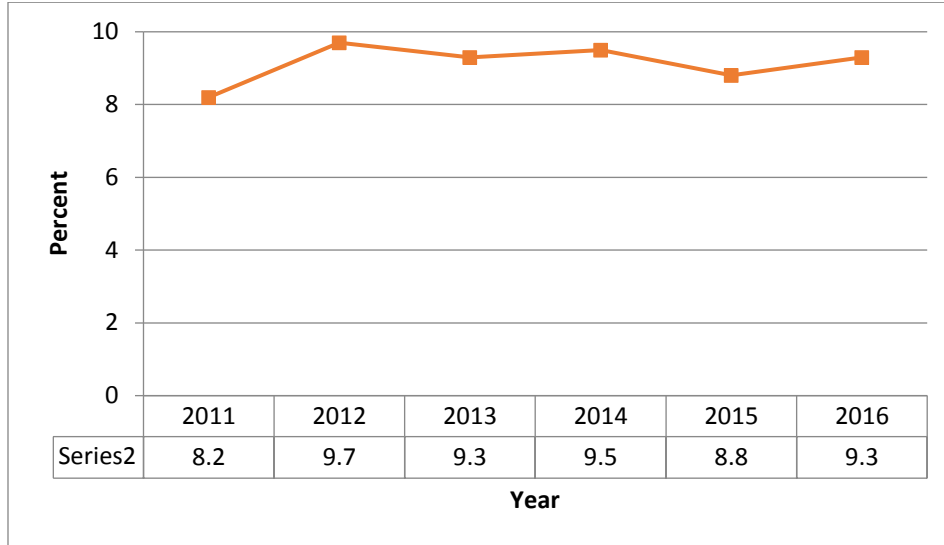
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9. Respiratory Diseases

Background

Few things are as immediately important to life as the ability to breathe. Several respiratory diseases exist that can make breathing difficult. Two 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, 2014).

This chronic disease affects more than 25 million Americans of all ages. Asthma is the most common chronic disease of childhood. About seven million children in the U.S. suffer from asthma. 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. 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, 2014).

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 use of drugs and 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 ($50.1 billion per year), loss of productivity resulting from missed school or work days ($3.8 billion per year) and premature death ($2.1 billion per year) was $56 billion (2009 dollars) in 2007; a $3 billion (5.7%) increase from 2002. Medical expenses associated with asthma were $3,259 per person per year during 2002—2007 **(**Centers for Disease Control and Prevention**,** 2011).

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, 2017).

Smoking is the leading cause of COPD. The more a person smokes, the more likely that person will develop COPD. Other causes are 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 2016, 12.1 percent of Iowans reported ever being diagnosed by a physician with asthma. Out of all adult Iowans, 7.8 percent currently had asthma and 4.1 percent formerly had asthma.[*] This is about the same as in 2015 when 12.2 percent of Iowans reported ever having and 7.6 percent reported currently having asthma. (see figure 9.1).

Figure 9.1: Current Asthma in Iowa by Year—2011-2016

	2011	2012	2013	2014	2015	2016
	8.3	8.1	7.8	8.5	7.6	7.8
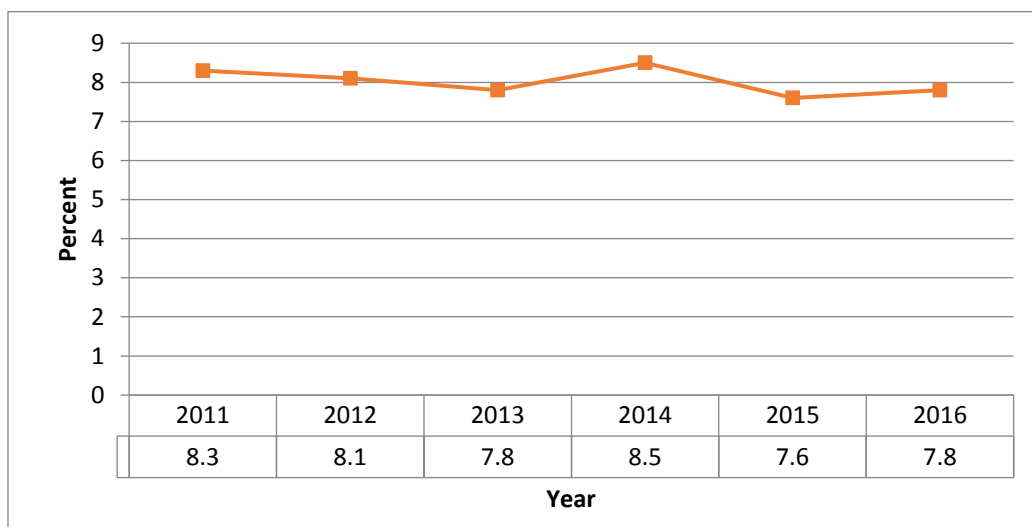
In Iowa, more women, people with less education, and people with lower annual household incomes currently have asthma. Fewer Hispanics report having asthma. The highest current asthma prevalence was among people earning less than $15,000 per year (17.8%). The lowest prevalence was among Hispanics (4.7%), although due to small numbers this is not statistically significant. Also showing low prevalence are people earning $50,000 to $75,000 per year (4.8%) (see table 9.1).

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.

When asked if they had been told they had COPD, 5.4 percent said they had. This is slightly lower than in 2015 when it was 5.7 percent. COPD was more common among women, older people, people with less education, and people with lower household income. Hispanics were less likely to report COPD (see Table 9.2). The highest prevalence of having COPD was found among those with annual household incomes less than $15,000 (14.6%). People age 18 to 24 years reported the lowest prevalence of COPD (1.1%).

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[*] For some who had ever had asthma, their current status could not be determined.

Table 9.1: Iowans Currently and Formerly Having Asthma, 2016

DEMOGRAPHIC GROUPS	Current Asthma		Former Asthma	
	%	C.I. (95%)	%	C.I. (95%)
TOTAL	7.8	(7.0-8.6)	4.1	(3.5-4.7)
SEX				
Male	5.6	(4.6-6.6)	4.3	(3.3-5.3)
Female	9.9	(8.5-11.3)	3.8	(2.8-4.8)
RACE/ETHNICITY				
White/non-Hispanic	7.7	(6.9-8.5)	3.8	(3.1-4.5)
Black Non-Hispanic	10.7	(4.6-16.8)	10.7	(4.8-16.7)
Other Non-Hispanic	10.3	(4.7-16.0)	10.4	(4.0-16.7)
Hispanic	4.7	(0.8-8.6)	6.1	(2.0-10.3)
AGE				
18-24	9.8	(6.5-13.1)	7.8	(4.9-10.7)
25-34	7.5	(5.3-9.7)	6.1	(3.9-8.3)
35-44	7.8	(5.4-10.2)	4.6	(2.8-6.4)
45-54	8.4	(6.4-10.4)	2.4	(1.2-3.6)
55-64	8.0	(6.2-9.8)	2.1	(1.3-2.9)
65-74	7.0	(5.5-8.6)	2.3	(1.3-3.3)
75+	5.6	(3.9-7.3)	2.6	(1.5-3.8)
EDUCATION				
Less than H.S.	12.2	(8.1-16.3)	12.2	(8.1-16.3)
H.S. or G.E.D.	8.4	(6.8-10.0)	8.4	(6.8-10.0)
Some Post-H.S.	7.5	(6.1-8.9)	7.5	(6.1-8.9)
College Graduate	5.8	(4.6-7.0)	5.8	(4.6-7.0)
HOUSEHOLD INCOME				
Less than $15,000	17.8	(13.1-22.5)	4.3	(1.8-6.8)
$15,000- 24,999	12.2	(9.3-15.1)	5.4	(3.2-7.6)
$25,000- 34,999	8.6	(5.7-11.5)	3.6	(1.4-5.8)
$35,000- 49,999	7.0	(5.0-9.0)	5.6	(3.4-7.8)
$50,000- 74,999	4.8	(3.0-6.6)	3.2	(1.8-4.6)
$75,000+	5.1	(3.9-6.3)	3.2	(2.2-4.2)

Comparison with Other States

While Iowa reported 7.8 percent of the entire adult population currently suffering from asthma, the median for the nation was 9.3 percent. The range was from 6.2 percent to 12.2 percent. There were only four states with a lower rate of reported current asthma than Iowa.

Table 9.2
Iowans who have been told they have COPD, 2016

DEMOGRAPHIC GROUPS	COPD	
	%	C.I. (95%)
TOTAL	5.4	(4.8-6.0)
SEX		
Male	4.7	(3.9-5.5)
Female	6.0	(5.0-7.0)
RACE/ETHNICITY		
White/Non-Hispanic	5.5	(4.9-6.1)
Black/Non-Hispanic	3.4	(0.9-6.0)
Other/Non-Hispanic	6.7	(1.3-12.1)
Hispanic	1.9	(0.1-3.6)
AGE		
18-24	1.1	(0.0-2.3)
25-34	2.0	(0.6-3.4)
35-44	3.6	(2.0-5.2)
45-54	4.5	(3.1-5.9)
55-64	8.3	(6.5-10.1)
65-74	8.8	(7.0-10.6)
75+	11.3	(9.1-13.5)
EDUCATION		
Less than H.S.	11.8	(8.1-15.5)
H.S. or G.E.D.	6.6	(5.4-7.8)
Some Post-H.S.	4.6	(3.6-5.6)
College Graduate	2.5	(1.7-3.3)
HOUSEHOLD INCOME		
Less than $15,000	14.6	(10.9-18.3)
$15,000- 24,999	10.7	(8.3-13.1)
$25,000- 34,999	8.1	(5.7-10.5)
$35,000- 49,999	5.6	(3.8-7.4)
$50,000- 74,999	2.8	(1.8-3.8)
$75,000+	1.9	(1.1-2.7)

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10. Cardiovascular Diseases

Background

Cardiovascular disease (CVD) refers in principle to any or all of the many disorders that can affect the circulatory system. CVD most often means heart disease, heart failure or stroke; taken together, these are the circulatory system disorders of greatest public health concern in the United States today. Heart disease includes coronary heart disease (CHD) or heart attack, also known as myocardial infarction (MI). Stroke refers to a sudden impairment of brain function, sometimes termed "brain attack," which results from interruption of circulation to one or another part of the brain. Heart disease and stroke are mainly consequences of clogged arteries (atherosclerosis) and high blood pressure (hypertension).

Heart disease and stroke are the most common cardiovascular diseases. Although the death rate from these diseases has fallen in the past few years, heart disease and stroke are still leading causes of death in the United States, accounting for nearly one-third of all annual deaths (Centers for Disease Control and Prevention, 2013).

Deaths are only part of the picture. More than 80 million Americans currently live with a cardiovascular disease. For example, coronary heart disease is a leading cause of premature, permanent disability in the U.S. workforce. Stroke alone accounts for disability in nearly 1 million Americans. Each year, 15 to 30 percent of stroke survivors are permanently disabled. For example, suffering a stroke may lead to paralysis, speech difficulties and emotional problems. Following a heart attack, individuals frequently suffer fatigue and depression and they may find it more difficult to engage in physical activities. More than seven million hospitalizations each year are because of cardiovascular disease (Go et al, 2013).

The economic impact of cardiovascular disease on our nation's health care system continues to grow as the population ages. About one in six health care dollars is devoted to cardiovascular disease. Heart disease and stroke cost the nation an estimated $316.6 billion in health care costs and lost productivity in 2011—and these costs are rising (Centers for Disease Control and Prevention, 2013). 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.

In Iowa, heart disease is the number one cause and stroke is the sixth leading cause of death. Even so, the death rate from these causes has steadily declined. The rate per 100,000 population has gone from363.9 in 1994 to 215 in 2015 for heart disease. The rate of deaths from stroke has gone from 82.9 in 1994 to 44.7 in 2015 (Iowa Department of Public Health, 2017). These decreases are mostly a result of emergency response, medicines, surgical procedures and improved systems of care after an acute event.

At the same time mortality has declined, the BRFSS is documenting noteworthy increases in many risk factors that lead to heart disease and stroke. Reducing cardiovascular disease risk requires an integrated strategy that includes:

1) Lifestyle behavior change - weight management; increased physical activity; no tobacco use; a low fat, low-cholesterol diet with moderate sodium, sugar and alcohol intake; and control of high blood cholesterol, elevated blood pressure and diabetes.

2) 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 trails for use by the public.

3) 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 2016, 4.3 percent of adult Iowans had been told by a doctor that they had had a heart attack or myocardial infarction; 3.9 percent had been told they had coronary heart disease or angina and 3.1 percent had been told they had a stroke. Although these values may seem small, they represent around 90,000 Iowans with a heart attack or heart disease, and 60,000 with a stroke. About 8.3 percent of Iowans reported being told they had any of the three conditions.

Table 10.1 shows the distribution of these conditions by demographic groups. Myocardial infarction and coronary heart disease/angina are combined when looking at the influence of various demographic factors.

More people experienced heart-related conditions if they were men, older people, people with lower education, people with lower household incomes or non-Hispanics. Age is the variable with the most impact on having had these conditions. Less than 2 percent of those under age 45 reported a heart condition, while 21.4 percent of those 75 years or older reported a heart condition and 27.2 percent reported any of the three cardiovascular conditions. The pattern was much the same for those who said they had a stroke with respect to age, education and income. There was no sex difference for reported strokes, however.

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

References

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2. Go AS., et al. Heart Disease and Stroke Statistics—2013 Update: A Report from the American Heart Association, 2013.

3. Iowa Department of Public Health. *2015 Vital Statistics of Iowa,* 2017.

Table 10.1: Prevalence among Iowans of Heart Attack, Heart Disease and Stroke, 2016

DEMOGRAPHIC GROUPS	Had any Heart Disease (MI or CHD)		Had Stroke		Had Any Cardio-vascular Disease	
	%	C.I. (95%)	%	C.I. (95%)	%	C.I. (95%)
TOTAL	6.3	(5.7-6.9)	3.1	(2.7-3.5)	8.3	(7.6-9.0)
SEX						
Male	8.1	(7.1-9.1)	3.4	(2.8-4.0)	10.1	(9.0-11.1)
Female	4.7	(3.9-5.5)	2.8	(2.2-3.4)	6.6	(5.8-7.4)
RACE/ETHNICITY						
White/Non-Hisp.	6.5	(5.9-7.1)	3.2	(2.7-3.6)	8.6	(7.9-9.4)
Black/Non-Hisp.	6.8	(1.3-12.4)	1.5	(0.0-3.7)	7.2	(1.6-12.8)
Other/Non-Hisp.	7.5	(2.7-12.2)	5.1	(1.5-8.6)	9.4	(4.2-14.5)
Hispanic	1.3	(0.2-2.3)	0.7	(0.0-1.6)	1.7	(0.4-2.9)
AGE						
18-24	0.0	(0.0-0.0)	0.0	(0.0-0.0)	0.0	(0.0-0.0)
25-34	0.6	(0.0-1.4)	0.7	(0.0-1.5)	1.3	(0.2-2.4)
35-44	1.6	(0.6-2.6)	0.9	(0.3-1.5)	2.3	(1.2-3.4)
45-54	4.2	(2.8-5.6)	2.2	(1.2-3.2)	5.3	(3.8-6.9)
55-64	9.5	(7.7-11.3)	3.9	(2.7-5.1)	12.2	(10.2-14.2)
65-74	13.8	(11.6-16.0)	6.6	(4.9-8.2)	18.0	(15.6-20.4)
75+	21.4	(18.5-24.3)	10.2	(8.1-12.3)	27.2	(24.1-30.3)
EDUCATION						
Less Than H.S.	11.0	(7.7-14.3)	6.0	(3.6-8.4)	14.3	(10.5-18.1)
H.S. or G.E.D.	7.8	(6.6-9.0)	3.9	(3.1-4.7)	10.1	(8.9-11.3)
Some Post-H.S.	5.2	(4.2-6.2)	2.5	(1.9-3.1)	6.8	(5.7-7.9)
College Graduate	4.4	(3.6-5.2)	1.9	(1.3-2.5)	5.9	(4.9-6.8)
HOUSEHOLD INCOME						
Less than $15,000	10.1	(7.2-13.0)	6.4	(3.9-8.9)	14.4	(10.9-17.9)
$15,000- 24,999	10.7	(8.3-13.1)	5.8	(4.0-7.6)	13.7	(11.1-16.3)
$25,000- 34,999	8.5	(6.1-10.9)	2.6	(1.4-3.8)	10.2	(7.7-12.7)
$35,000- 49,999	6.7	(5.1-8.3)	3.5	(2.3-4.7)	8.6	(6.7-10.5)
$50,000- 74,999	5.5	(4.1-6.9)	2.5	**(1.7-3.3)**	7.2	(5.7-8.7)
$75,000+	3.0	(2.2-3.8)	1.1	**(0.7-1.5)**	4.0	(3.1-4.9)

11. Tobacco Use

Background

Tobacco use remains the leading preventable cause of premature death in the United States. An estimated 46 million American adults currently smoke cigarettes, and, cigarette smoking causes more than 480,000 deaths each year, or one in every five deaths (Centers for Disease Control and Prevention, 2017).

The estimated economic costs attributable to smoking and exposure to tobacco smoke continue to increase and now approach $300 billion annually, with direct medical costs of at least $130 billion and productivity losses of more than $150 billion a year (U. S. Department of Health and Human Services, 2014).

Tobacco use is known to cause heart disease, stroke, peripheral vascular disease and 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 causes diseases in nearly every organ of the body (Centers for Disease Control and Prevention, 2017).

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. SHS also affects children by increasing lower respiratory tract infections and asthma, and by decreasing pulmonary function. According to the Surgeon General, there is no safe level of exposure to secondhand smoke (U. S. Department of Health and Human Services, 2006).

Public health efforts to reduce the prevalence of tobacco use began after the health risks were announced in the first Surgeon General's report on tobacco in 1964.

Many steps are being taken to prevent 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. The last component involves counter-advertising and promotion, product regulation and economic incentives against tobacco.

There is also support for smoking cessation through such efforts as Quitline Iowa, which has offered free nicotine replacement therapy (NRT).

The legal environment has recently made it much more difficult to continue smoking. In March of 2007, the Iowa state legislature passed a one dollar increase in the tax on a pack of cigarettes. In the end, this should further reduce the number of smokers by inducing people to try to quit and by making it less likely that new people will start. On July 1, 2008, a smoking ban in most public places in the state took effect. This not only made it more difficult for smokers to find a place to smoke, but was quite beneficial at reducing exposure to secondhand smoke.

These legal changes have spurred a host of new smokeless tobacco products such as electronic or "e-cigarettes," and smokeless tobacco in novel forms. The impact of these is just beginning to be studied.

Tobacco Use Results

Current smoking was 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 2016, 16.7 percent reported being a current smoker. This is a decrease from the 18.1 percent found in 2015 and is the lowest ever seen in the state (see figure 11.1).

The proportion of current smokers was higher for males than for females, people with less education and lower household income. Black non-Hispanics had a higher percent of current smokers, while Hispanics had a lower percentage. Smoking declined with increasing age after age 65, but was also lower for people age 18 to 24 than older age groups. Respondents with household incomes less than $15,000 reported the highest proportion of current smokers (33%). Only 4.2 percent of respondents age 75 years and older were current smokers (see table 11.1).

Figure 11.1: Current Smoking in Iowa by Year—2011-2016

	2011	2012	2013	2014	2015	2016
Current Smoker	20.4	18.1	19.5	18.5	18.1	16.7
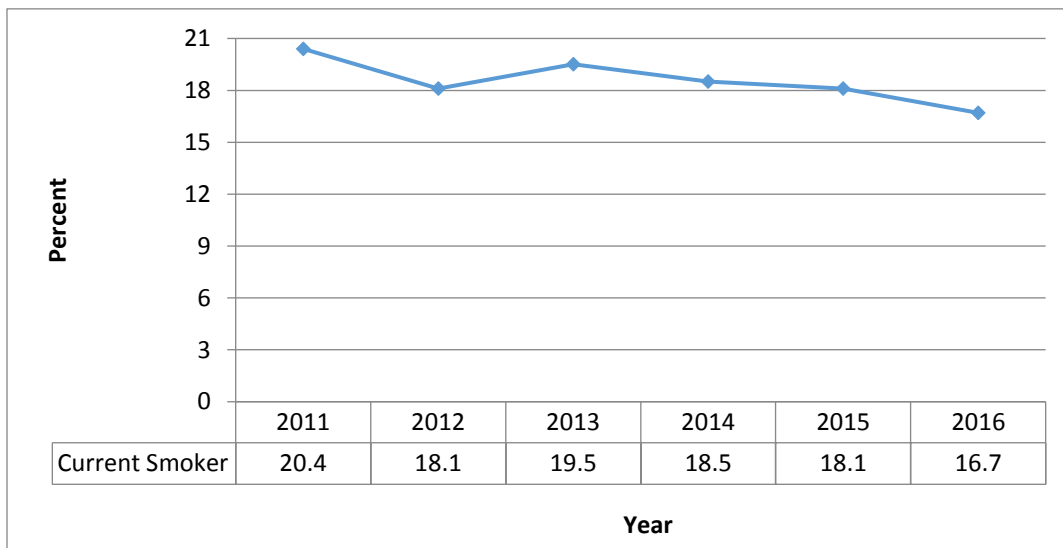
About 25.3 percent of respondents were former smokers. This means that they had smoked at least 100 cigarettes in their lifetime, but did not smoke now. While more males were former smokers than females, the percent of former smokers steadily increased with age. The 18 to 24-year age group had only 4.8 percent former smokers, while those 65 and older had over 42 percent (see table 11.1 and figure 11.2). Black/non-Hispanics had a lower percent of former smokers than other race/ethnicity groups. When former smokers were asked how long it had been since they last smoked cigarettes regularly, the majority (58.7%) said ten or more years.

When asked about attempts to quit smoking, 52.5 percent of current Iowa smokers reported they quit smoking for a day or more during the past year. Younger smokers were more likely to try to quit, as were people with the least education and income. People with the highest education and income actually had a lower percent making quit attempts.

Table 11.1: Percentage of Current and Former Smokers in Iowa, 2016

DEMOGRAPHIC	Current Smoker		Former Smoker	
GROUPS	%	C.I. (95%)	%	C.I. (95%)
TOTAL	16.7	(15.5-17.9)	25.3	(24.1-26.5)
SEX				
Male	17.7	(15.9-19.5)	29.6	(27.6-31.6)
Female	15.8	(14.2-17.4)	21.0	(19.4-22.6)
RACE/ETHNICITY				
White/Non-Hisp.	16.4	(15.2-17.6)	26.2	(24.8-27.6)
Black/Non-Hisp.	28.4	(17.4-39.4)	14.4	(6.2-22.6)
Other/Non-Hisp.	24.4	(15.7-33.2)	19.7	(11.9-27.5)
Hispanic	11.0	(5.1-16.9)	17.6	(11.3-23.9)
AGE				
18-24	15.5	(11.4-19.6)	4.8	(2.3-7.3)
25-34	23.6	(19.7-27.5)	19.2	(15.7-22.7)
35-44	18.9	(15.6-22.2)	23.4	(19.9-26.9)
45-54	19.3	(16.4-22.2)	23.2	(20.1-26.3)
55-64	17.9	(15.5-20.3)	30.2	(27.5-32.9)
65-74	11.6	(9.6-13.7)	42.1	(39.0-45.1)
75+	4.2	(2.6-5.8)	42.2	(38.8-45.7)
EDUCATION				
Less Than H.S.	28.6	(22.3-34.9)	26.4	(20.9-31.9)
H.S. or G.E.D.	21.2	(19-23.4)	27.7	(25.5-29.9)
Some Post-H.S.	17.2	(15-19.4)	25.2	(23-27.4)
College Graduate	6.2	(4.8-7.6)	21.8	(19.6-24.0)
HOUSEHOLD INCOME				
Less than $15,000	33.0	(26.9-39.1)	20.7	(16.0-25.4)
$15,000- 24,999	25.1	(21.2-29.0)	26.5	(22.8-30.2)
$25,000- 34,999	25.6	(20.5-30.7)	27.3	(22.8-31.8)
$35,000- 49,999	20.9	(17.4-24.4)	26.9	(23.4-30.4)
$50,000- 74,999	13.0	(10.3-15.7)	25.3	(22.2-28.4)
$75,000+	9.1	(7.3-10.9)	25.6	(23.2-28.0)

In order to look at the use of other tobacco products besides cigarettes, all respondents were asked if they currently use chewing tobacco, snuff or snus. Only 4.7 percent said they used every day or some days.

E-cigarettes had been used by 19.2 percent of Iowans, with 22.5 percent of those now using everyday or some days. This meant that in 2016, 4.3 percent of all Iowa adults currently used e-cigarettes. Use of e-cigarettes is particularly common among the young, less educated, lower income and males (see table 11.2).

Of all Iowans, 13 percent had tried smoking a hookah. Other tobacco products used every day or some days by Iowans were cigars (1.3%) and a pipe (0.7%).

Figure 11.2: Percentage of Current and Former Smokers by Age, 2016
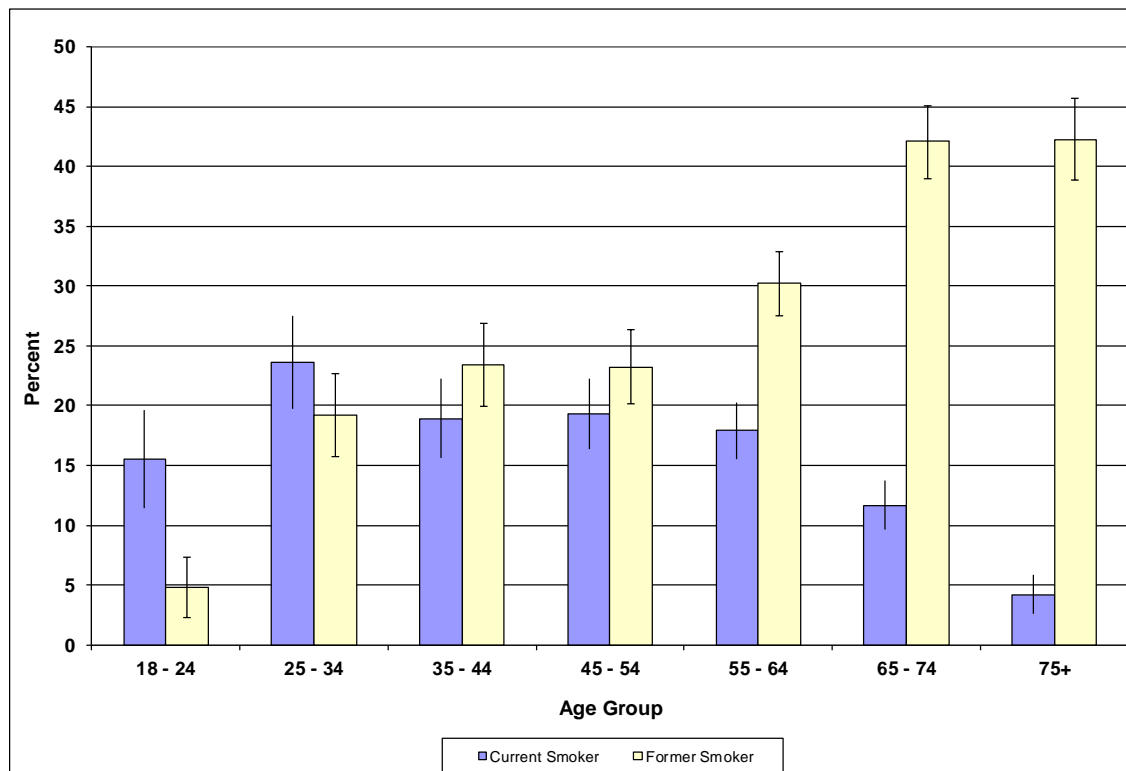
Of smokers who had seen a doctor in the past year, 69.1 percent of them reported that the doctor had advised them to quit smoking. The most common forms of assistance offered by doctors were medical resources (24.4%) or a quitline (25%).

Of smokers who had seen a dentist in the past year, 39.6 percent reported that the dentist had advised them to quit smoking. With respect to rules against smoking in their house, 85.4 percent of Iowans said they never allowed it. Further data on tobacco use will be available in separate reports.

Comparison with Other States

In all the states and District of Columbia, smoking prevalence ranged from a low of 8.8 percent to a high of 24.8 percent. Iowa's current smoking prevalence of 16.7 percent was slightly better than the median of 17.1 percent for all states. Both Iowa and the nation as a whole showed a decline in smoking prevalence from the previous year.

Health Objectives for Iowa and the Nation

The goal for *Healthy People* 2020 is to reduce the percentage of smokers to 12 percent, while the goal for *Healthy Iowans* is 15 percent. The prevalence of those reporting currently smoking is 16.7 percent in Iowa, which is higher than both goals.

Table 11.2: Percentage of Current E-cigarette Users in Iowa, 2016

DEMOGRAPHIC	Current User	
GROUPS	%	C.I. (95%)
TOTAL	4.3	(3.5-5.1)
SEX		
Male	4.5	(3.5-5.5)
Female	4.1	(3.1-5.1)
RACE/ETHNICITY		
White/Non-Hisp.	4.3	(3.5-5.1)
Black/Non-Hisp.	2.0	(0.0-5.5)
Other/Non-Hisp.	9.1	(3.2-15.0)
Hispanic	2.4	(0.0-4.8)
AGE		
18-24	8.0	(4.9-11.1)
25-34	7.6	(5.2-10.0)
35-44	4.1	(2.5-5.7)
45-54	3.8	(2.2-5.4)
55-64	3.7	(2.5-4.9)
65-74	1.1	(0.4-1.8)
75+	0.1	(0.0-0.2)
EDUCATION		
Less Than H.S.	7.4	(3.7-11.1)
H.S. or G.E.D.	5.8	(4.4-7.2)
Some Post-H.S.	3.7	(2.7-4.7)
College Graduate	2.2	(1.4-3.0)
HOUSEHOLD INCOME		
Less than $15,000	6.7	(3.6-9.8)
$15,000- 24,999	7.6	(5.1-10.1)
$25,000- 34,999	3.7	(1.5-5.9)
$35,000- 49,999	5.8	(3.6-8.0)
$50,000- 74,999	4.4	(2.4-6.4)
$75,000+	1.9	(1.1-2.7)

The *Healthy People 2020* goal for use of smokeless tobacco is only 0.3 percent. Iowa's prevalence of such use is 4.7 percent. There is a need for improvement in this area.

Iowa fell far short of the *Healthy People 2020* goal of 80 percent of current smokers attempting to quit in the past year. At 52.5 percent, the rate falls nearly 30 percentage points short of the goal.

Iowa also missed the *Healthy People 2020* goal for recent smoking cessation success by adult smokers. 4.7 percent of former smokers said they had not smoked regularly for six months to a year, while the goal was 8 percent.

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12. Alcohol Consumption

Background

Consumption of alcohol is a very widespread practice in our society; however, a large number of people get into serious trouble because of their consumption of alcohol. Alcohol consumed on an occasional basis will pose little risk to most people, and may even promote health. Even at this level, factors such as family history, health condition and use of medications can mean a person should not drink at all. Furthermore, many people find it impossible to consume alcohol in a controlled manner.

Several million adults engage in risky drinking that could lead to alcohol problems. These patterns include binge drinking (drinking too much at one time) and chronic heavy drinking (drinking a large quantity of alcohol on a regular basis) (Centers for Disease Control and Prevention, 2016).

Alcohol dependency and abuse are major public health problems carrying a large economic cost and placing heavy demands on the health care system. In fact, excessive alcohol use is the third leading lifestyle-related cause of death for people in the United States each year. Excessive drinking cost the US $249 billion in 2010 (Centers for Disease Control and Prevention, 2016).

Chronic alcohol use affects every organ and system of the body. It can lead to medical disorders (e.g., fetal alcohol syndrome, liver disease, cardiomyopathy and pancreatitis). Heavy drinking can increase the risk for certain cancers. Drinking increases the risk of death from automobile crashes as well as recreational and on-the-job injuries. Furthermore, both homicides and suicides are more likely to be committed by persons who have been drinking (Centers for Disease Control and Prevention, 2016).

Binge drinking is a serious problem. It has been a particularly serious problem on college campuses. Students who binge drink are more likely to damage property, have trouble with authorities, miss classes, have hangovers and experience injuries than those who do not.

Among men, research indicates that greater alcohol use is related to greater sexual aggression. Binge drinkers appear to engage in more unplanned sexual activity and to abandon safe sex techniques more often than students who do not binge (National Institute on Alcohol Abuse and Alcoholism, 2016).

Several groups and techniques exist to help people control their problem drinking. Although it can be difficult, it is possible to solve a drinking problem before it causes serious damage.

Alcohol Consumption Results

In the BRFSS survey, a standard drink is defined as one 12-ounce beer, one 5-ounce glass of wine, or a drink with one shot of hard liquor. In 2016, 59.2 percent of Iowans reported that they had at least one drink of alcohol in the past 30 days. On the days when they drank, 35.8 percent had an average of only one drink. The median was two drinks. About 11.9 percent reported drinking five or more drinks per day on the average.

Table 12.1
Heavy Drinking Among Iowans, 2016

DEMOGRAPHIC GROUPS	Heavy Drinking	
	%	C.I. (95%)
TOTAL	6.9	(6.1-7.7)
SEX		
Male	8.1	(6.7-9.5)
Female	5.9	(4.7-7.1)
RACE/ETHNICITY		
White/Non-Hisp.	7.4	(6.5-8.3)
Black/Non-Hisp.	4.3	(0.0-10.0)
Other/Non-Hisp.	2.0	(0.0-4.7)
Hispanic	3.8	(0.5-7.0)
AGE		
18-24	10.1	(6.6-13.6)
25-34	8.8	(6.1-11.5)
35-44	6.5	(4.3-8.7)
45-54	8.0	(6.0-10.0)
55-64	5.7	(4.3-7.1)
65-74	5.2	(3.9-6.6)
75+	2.9	(1.6-4.2)
EDUCATION		
Less than H.S.	5.0	(1.9-8.1)
H.S. or G.E.D.	7.5	(5.9-9.1)
Some Post-H.S.	7.3	(5.7-8.9)
College Graduate	6.4	(5.0-7.8)
HOUSEHOLD INCOME		
Less than $15,000	5.7	(2.6-8.8)
$15,000- 24,999	5.9	(3.5-8.3)
$25,000- 34,999	7.8	(4.5-11.1)
$35,000- 49,999	8.9	(6.4-11.4)
$50,000- 74,999	6.2	(4.2-8.2)
$75,000+	8.5	(6.9-10.1)

Table 12.2
Binge Drinking Among Iowans, 2016

DEMOGRAPHIC GROUPS	Binge Drinking	
	%	C.I. (95%)
TOTAL	21.2	(19.8-22.6)
SEX		
Male	27.1	(24.9-29.3)
Female	15.4	(13.6-17.2)
RACE/ETHNICITY		
White/Non-Hisp.	22.0	(20.6-23.4)
Black/Non-Hisp.	18.0	(8.0-28.0)
Other/Non-Hisp.	13.1	(5.7-20.5)
Hispanic	15.0	(9.2-20.8)
AGE		
18-24	31.8	(26.7-36.9)
25-34	34.9	(30.6-39.2)
35-44	26.4	(22.7-30.1)
45-54	21.4	(18.3-24.5)
55-64	14.7	(12.5-16.9)
65-74	8.7	(6.9-10.5)
75+	2.0	(1.0-2.9)
EDUCATION		
Less than H.S.	12.2	(7.3-17.1)
H.S. or G.E.D.	18.6	(16.4-20.8)
Some Post-H.S.	23.5	(21.0-26.0)
College Graduate	24.3	(21.9-26.7)
HOUSEHOLD INCOME		
Less than $15,000	16.7	(11.6-21.8)
$15,000- 24,999	16.2	(12.7-19.7)
$25,000- 34,999	19.8	(14.7-24.9)
$35,000- 49,999	23.0	(19.1-26.9)
$50,000- 74,999	23.6	(20.3-26.9)
$75,000+	28.0	(25.5-30.5)

In our analysis, chronic heavy drinking was defined to be an average of greater than 14 drinks per week for men and seven drink per week for women. According to this definition, 6.9 percent of all Iowans were heavy drinkers. This is more than in 2015, when 5.9 percent were heavy drinkers (see figure 12.1).

In spite of the fact that men had to have a larger number of drinks to be considered heavy drinkers, 8.1 percent of men were considered to be heavy drinkers, while only 5.9 percent of women were considered to be heavy drinkers. Older people, racial/ethnic minorities, people with less than a high school education and people with household incomes $50,000 to $75,000 and less than $15,000 reported a lower prevalence of heavy drinking (see table 12.1).

Figure 12.1: Binge and Heavy Drinkers by year, 2011-2016

	2011	2012	2013	2014	2015	2016
Binge	23.1	21.7	21.7	21.4	19.8	21.2
Heavy	8.1	6.2	6.5	6.3	5.9	6.9
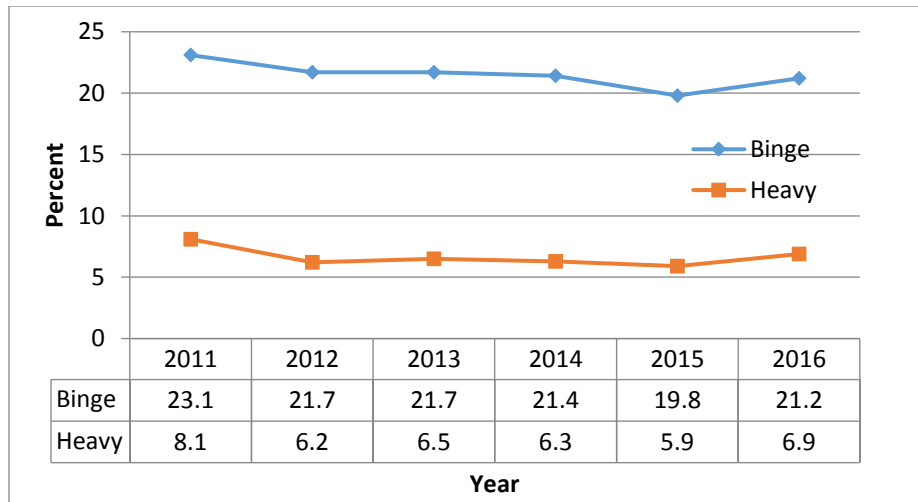
The definition of binge drinking is when a man drinks more than five drinks or a woman drinks more than four drinks on one occasion. Among all adult Iowans, 21.2 percent reported at least one binge episode in the last 30 days. This is higher than in 2015 when it was 19.8 percent but is about the same as that seen in 2014 (see figure 12.1).

Even with the lessened requirement on females, almost twice as many males binge than females (27.1% versus 15.4%). Men binged more than women at all ages (see figure 12.2). Age made the most difference with people of younger age binging more. The likelihood of binging decreases with age from 34.9 percent for 25 to 34-year-olds to only 2 percent for those 75 years old and older. A higher percent of non-Hispanic Whites binge than do racial and ethnic minorities. Unlike most risky behaviors, people with more education and higher income were more likely to engage in binge drinking (see table 12.2).

Comparison with Other States

The prevalence of people reporting heavy drinking in the 50 states and District of Columbia ranged from 3.5 percent to 11.1 percent. Iowa's figure of 6.9 percent is greater than the median of 6.5 percent.

For binge drinking, the range is from a low of 11.3 percent to a high of 25.5 percent, with a median of 16.9 percent. Iowa's figure of 21.2 percent is well above the median. There are only four states with a higher prevalence of reported binge drinking.

Health Objectives for Iowa and the Nation

The *Healthy People 2020* goal for the nation for binge drinking is 24.3 percent. This modest goal is met in Iowa with 21.2 percent. The *Healthy Iowans* goal for binge drinking is 16 percent. Iowa's prevalence was greater than this goal.

Figure 12.2: Binge Drinking in Iowa by Age and Sex, 2016
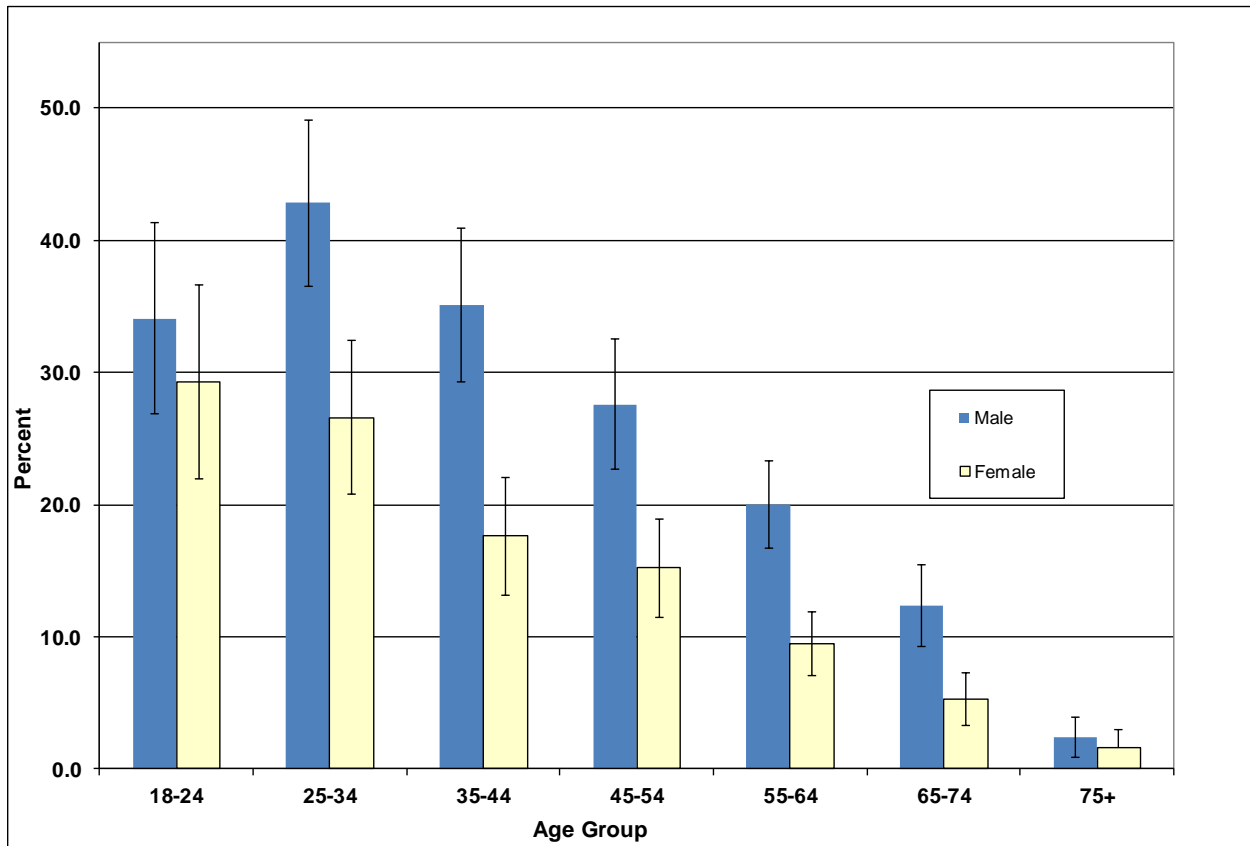
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13. Breast and Cervical Cancer Screening

Breast Cancer Screening

Background

Breast cancer is a malignant (cancerous) tumor that starts from cells of the breast. The disease occurs mostly in women, but men can get breast cancer as well (American Cancer Society, 2016).

Other than skin cancer, breast cancer is the most common cancer among women. After lung cancer, it is the second leading cause of cancer death in women. About 252,710 women in the United States are predicted to be found to have invasive breast cancer in 2017. About 40,610 women will die from the disease this year. Breast cancer death rates have been going down. This is probably the result of finding the cancer earlier and improved treatment. Currently, there are more than 3.1 million women living in the U.S. who have been treated for breast cancer (American Cancer Society, 2016). In Iowa, 386 women died from breast cancer in 2015 (Iowa Department of Public Health, 2017).

There are many factors that increase the risk of breast cancer. The chance of getting breast cancer increases as a woman gets older (American Cancer Society, 2014). Individual factors other than age that increase the risk for developing breast cancer include family history, a personal history of breast cancer, possession of certain genes (BRCA1 or BRCA2), race, earlier abnormal breast biopsy, a long menstrual history, obesity after menopause, recent use of oral contraceptives, postmenopausal hormone therapy, never having children or having a first child after age 30, consuming one or more alcoholic beverages per day and lack of exercise (American Cancer Society, 2016). However, many women develop breast cancer without having any of the usual known risk factors.

Early detection of breast cancer is key to surviving the disease and regular screening is key to detecting the disease early. There may be no detectable symptoms apart from screening until the disease is quite advanced.

The chief method for early detection of breast cancer is mammography. Mammography involves an x-ray examination of the breast and can detect abnormalities in the breast before they can be felt. Because the risk of developing breast cancer increases as women get older, mammography, with its increased sensitivity, is recommended for older women.

There has lately been some disagreement about mammography recommendations. Two agencies making recommendations are the American Cancer Society and the Preventive Services Task Force. Despite differences on exactly when to start and how often mammography screening should occur, the following are generally suggested:

- Older women, age 40 or 50 years and older, should be screened every one to two years with mammography.
- Women at higher than average risk of breast cancer should seek expert medical advice about whether they should begin screening before age 40 and the frequency of screening (National Cancer Institute, 2016).
- Women at higher than average risk of breast cancer should also be screened with magnetic resonance imagery (MRI).

Most cancer organizations also believe that adult women should have a clinical breast exam (CBE) by a health care provider as part of regular, routine care.

Although no screening method is foolproof, there is no doubt that screening for breast cancer saves lives.

Breast Cancer Screening Results

In 2016, when asked if they had ever had a mammogram, 92 percent of all female Iowans ages 40 and older reported having one. Women in their 40s were less likely to have a mammogram than older ones. In addition, women with higher household income were more likely to have a mammogram. Women with less than a high school education were less likely to have one (see table 13.1).

Table 13.1: Use of Mammography by Iowa Women, 2016

DEMOGRAPHIC GROUPS	Ever had a Mammogram		Had Mammogram in Last 2 Years	
	Age 40 and over			
	%	C.I. (95%)	%	C.I. (95%)
TOTAL FEMALES	92.0	(90.5-93.4)	72.2	(70.0-74.4)
Race/Ethnicity				
Non-Hispanic White	92.6	(91.2-93.9)	72.4	(70.3-74.5)
Non-White or Hispanic	83.5	(73.3-93.7)	70.5	(59.2-81.7)
AGE				
40 – 54	85.4	(81.9-88.8)	67.5	(63.2-71.9)
55 – 64	95.5	(93.5-97.6)	77.5	(74.0-81.1)
65 – 74	95.7	(93.9-97.6)	80.1	(76.7-83.5)
75 & up	95.8	(94.0-97.7)	64.9	(60.6-69.2)
EDUCATION				
Less than H.S.	77.8	(68.2-87.5)	61.7	(51.3-72.1)
H.S. or G.E.D.	93.2	(91.1-95.3)	71.1	(67.8-74.4)
Some Post-H.S.	93.1	(90.8-95.5)	72.0	(68.3-75.7)
College Graduate	93.3	(91.1-95.5)	77.9	(74.6-81.2)
HOUSEHOLD INCOME				
Less than $15,000	87.8	(79.0-96.6)	61.8	(52.4-71.2)
$15,000- 24,999	90.0	(85.7-94.2)	66.6	(60.9-72.3)
$25,000- 34,999	90.2	(84.9-95.4)	71.9	(65.2-78.6)
$35,000- 49,999	88.7	(83.8-93.6)	72.8	(66.9-78.7)
$50,000- 74,999	92.3	(88.7-95.8)	75.0	(69.5-80.5)
$75,000+	94.7	(92.5-96.9)	76.7	(72.6-80.8)

When asked if they had a mammogram in the past two years, 72.2 percent of all Iowa women over age 40 said they had. For women between age 50 and 75, the figure was 77.6 percent. Older women (until age 75), women with a higher education level and those with a higher household income tended to have higher percentages of having a mammogram in the past two years (see table 13.1).

Comparison with Other States

In all states and the District of Columbia, the percent of women age 40 and older who have had a mammogram in the past two years ranged from 59.7 percent to 80.9 percent. Iowa's figure of 72.2 percent is almost identical to the median of 72.5 percent.

Health Objectives for Iowa and the Nation

The national health objectives for *Healthy People 2020* include an increase to at least 81.1 percent of women age 50 to 75 who have had a mammogram within the preceding two years. Iowa falls short of this goal with 77.6 percent. The *Healthy Iowans* goal is 88 percent for women 50 years and older. Iowa falls short here as well with 74.8 percent.

Cervical Cancer Screening

Background

Cancer of the cervix begins in the lining of the cervix, the lower part of the uterus (womb). This cancer does not form suddenly. First, some cells begin to change from normal to pre-cancer and then to cancer. This can take a number of years, although sometimes it happens more quickly. These changes may go away without any treatment. More often, they need to be treated to keep them from changing into true cancer (American Cancer Society, 2017).

Approximately 12,820 new cases of invasive cervical cancer and 4,210 cervical cancer-related deaths were projected to occur in the United States (American Cancer Society, 2017). Overall rates of U.S. women diagnosed with invasive cervical cancer have declined greatly in the last few decades.

Although there are several risk factors for cervical cancer, the most important risk factor is infection with the human papilloma virus (HPV). This virus is often, though not always, transmitted sexually. A vaccine now exists for HPV. Not all women infected with HPV get cervical cancer. Some other risk factors that may play a role are smoking, HIV infection, chlamydia infection and obesity (American Cancer Society, 2014).

The principal screening test for cervical cancer is the Papanicolaou (Pap) test. This test allows the cellular changes in the cervix to be detected when they are precancerous or at an early stage. Early detection through Pap tests can dramatically lower the incidence of invasive disease and can nearly eliminate deaths from cervical cancer.

The American Cancer Society recommends Pap tests begin no later than age 21 years. The test should be done every three years until age 30. It could be done every three years after that or every five years when combined with an HPV test. If the woman is at high risk, the test needs to be done more frequently. Women are at high risk of cervical cancer if, among other things, they have a weak immune system from HIV infection, organ transplant, long-term steroid use or because they were exposed to the drug DES when their mothers were pregnant with them.

Pap tests are not necessary for women who have had a total hysterectomy that was not due to cancer or are over age 65 and not high risk (American Cancer Society,2017). However, women who have been vaccinated against HPV should still follow these guidelines.

Table 13.2: Proportion of Iowa Women Having Pap Test, 2016

DEMOGRAPHIC GROUPS	Ever had a Pap test		Had Pap test in last 3 years Age 21 - 65	
	%	C.I. (95%)	%	C.I. (95%)
FEMALES	90.3	(88.7-91.9)	81.6	(79.2-84.0)
Race/Ethnicity				
Non-Hispanic White	91.9	(90.3-93.5)	81.3	(78.8-83.8)
Non-White or Hispanic	78.2	(70.7-85.7)	83.1	(75.7-90.4)
AGE				
18-24	42.1	(34.1-50.1)	55.8	(44.4-67.2)
25-34	95.5	(92.8-98.2)	89.4	(85.5-93.3)
35-44	98.7	(97.3-100.0)	86.4	(82.1-90.7)
45-54	99.9	(99.7-100).0	82.6	(77.9-87.3)
55-64	97.9	(96.3-99.5)	79.8	(75.9-83.7)
65-74	98.2	(97.2-99.3)		
75+	94.1	(92.2-95.9)		
EDUCATION				
Less than H.S.	84.9	(76.9-92.9)	80.4	(69.4-91.4)
H.S. or G.E.D.	86.1	(82.8-89.4)	76.1	(71.0-81.2)
Some Post-H.S.	90.7	(88.0-93.4)	80.3	(76.2-84.4)
College Graduate	96.4	(94.6-98.2)	87.3	(84.2-90.4)
HOUSEHOLD INCOME				
Less than $15,000	80.0	(72.2-87.8)	77.2	(67.0-87.4)
$15,000- 24,999	86.4	(81.9-90.9)	74.1	(66.5-81.7)
$25,000- 34,999	94.4	(90.7-98.1)	75.2	(66.4-84.0)
$35,000- 49,999	90.3	(85.2-95.4)	80.9	(73.3-88.5)
$50,000- 74,999	94.6	(91.3-97.9)	83.9	(78.8-89.0)
$75,000+	93.6	(90.7-96.5)	86.8	(83.3-90.3)

Comparison with Other States

In all states and the District of Columbia, the percent of women age 21 to 65 who have had a Pap test in the past three years ranged from 73.2 percent to 85.7 percent. The median was 80.2 percent. Iowa's figure of 81.6 percent is better than the median for the nation.

Health Objectives for Iowa and the Nation

For *Healthy People 2020,* the goal for the proportion of women over the age of 18 who have had a Pap test in the last three years is 93 percent. For *Healthy Iowans,* the goal for those over age 21 years is 92 percent. The figure for 2014 of 75.8 percent over 18 and 79.3 percent over 21 years falls short of both of these goals.

References

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14. Colorectal Cancer Screening

Background

Colorectal cancer is the second leading cause of cancer-related deaths in both the United States and Iowa. Colorectal cancer occurs in the colon or rectum. It may also be referred to as colon cancer. The colon is the large intestine or large bowel. The rectum is the passageway that connects the colon to the anus (American Cancer Society, 2017).

Colorectal cancer usually develops from abnormal growths known as precancerous polyps in the colon and rectum. In the early stages, there are often no symptoms. Some screening tests can detect polyps so they can be removed before they turn into cancer (Centers for Disease Control and Prevention, 2017).

An estimated 95,520 new cases of colon and 39,910 new cases of rectal cancer are expected to exist in the United States in 2017 (American Cancer Society, 2017). There are estimated to be 50,260 deaths from this disease (American Cancer Society, 2017). Incidence and mortality rates have been decreasing for most of the last two decades. The decline has been steeper in the most recent time period, partly due to an increase in screening, which can result in the detection and removal of colorectal polyps before they progress to cancer.

Although the exact causes of colorectal cancer are unknown, risk factors include:

- **Age** – Approximately 93 percent of colorectal cancer cases occur in people age 50 and older and the risk of developing the disease increases with age.
- **Family History** –Those who have family members diagnosed with colorectal cancer or pre-cancerous polyps are at high risk for the disease.
- **Personal History** – Persons who have inflammatory bowel diseases are at increased risk.

Modifiable risk factors include smoking, heavy alcohol use, obesity, a diet high in red meat and physical inactivity.

The U.S. Preventive Services Task Force (2017) recommends that men and women who are not at a high risk begin regular screening for colorectal cancer at age 50. If everyone ages 50 to 75 had regular screening, as many as 60 percent of deaths from colorectal cancer could be prevented. Recommended options include the following:

- **Annual screening with high-sensitivity fecal occult blood testing (FOBT)**
- **Sigmoidoscopy every five years, with high-sensitivity fecal occult blood testing every three years**
- **Screening colonoscopy every 10 years**.

The colonoscopy has the advantage over the other tests because it can remove polyps as well as detect them. The FOBT has the advantage that it is simplest and least expensive to use, but it cannot find or remove pre-cancerous polyps.

Colorectal Cancer Screening Results

In 2016, 31.4 percent of Iowans 50 years or older reported ever using a home blood-stool testing kit (FOBT). Of those who had ever had the test, 33.6 percent had it within the past two years.

In 2016, 72.5 percent of Iowans 50 years or older reported ever having a sigmoidoscopy or colonoscopy screening test. This is an increase from 71.2 percent found in 2014. Respondents with more education and a higher annual household income were more likely to have the test.

Having a colonoscopy was far more common than having a sigmoidoscopy (97.9 percent compared to only 2.1 percent for sigmoidoscopy). Nearly everyone who had one of these tests had a colonoscopy.

To determine the percentage of Iowans being adequately screened, the percent of respondents who had either screening method within the proper time interval was calculated for individuals with normal screening results. The result was that 68.6 percent of Iowans 50 to 75 years old had, at least, one of the colorectal screening methods within the prescribed time. This is about the same as the 68 percent that was reported in 2014. Respondents from households earning less than $15,000 had the lowest percentage (55.6%), while college graduates had the highest (76.1%) (see table 14.1).

Table 14.1: Prevalence of Colorectal Cancer screening in Iowans Meeting Recommendations, 2016

DEMOGRAPHIC GROUPS	Met Screening Criteria from any Method	
	%	C.I. (95%)
TOTAL	68.6	(66.6-70.6)
SEX		
Male	68.5	(65.8-71.2)
Female	68.8	(66.3-71.3)
EDUCATION		
Less than H.S.	58.6	(48.6-68.6)
H.S. or G.E.D.	65.1	(61.8-68.4)
Some Post-H.S.	69.0	(65.7-72.3)
College Graduate	76.1	(73.2-79.0)
HOUSEHOLD INCOME		
Less than $15,000	55.6	(47.6-63.6)
$15,000- 24,999	61.8	(55.5-68.1)
$25,000- 34,999	66.2	(59.1-73.3)
$35,000- 49,999	68.2	(63.1-73.3)
$50,000- 74,999	69.2	(64.9-73.5)
$75,000+	74.2	(70.9-77.5)

Since 2004, a number of additional questions have been included in the survey concerning colorectal cancer screening. A few findings from these are given here.

Iowans 50 years and older reported that 62 percent of them had been talked to by a health care professional about colorectal cancer screening. When the health care professional talked about screening, 90.8 percent recommended having a sigmoidoscopy or colonoscopy. Of the respondents who had a test recommended, 82.4 percent then had the test.

Comparison with Other States

The proportion of people in all states and the District of Columbia who have received the adequate level of colorectal cancer screening ranges from 58.8 percent to 76.3 percent. Iowa's prevalence of 68.6 percent is slightly better than the median of 67.7 percent.

Health Objectives for Iowa and the Nation

The *Healthy People 2020* and *Healthy Iowans* goals are for 70 percent of people age 50 to 75 to be screened according to the latest guidelines. Iowa's figure of 68.6 percent does not quite reach these goals.

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15. Other Cancer prevalence and screening

Background

Cancer is a very common condition and the second most common cause of death in The United States. Cancer occurs when a group of cells grows out of control and has the ability to invade normal tissue (American Cancer Society, 2015). Cancer may arise almost anywhere in the body, though some locations are more common than others are. Skin cancer is a very common form of cancer. Other common types are lung, breast, prostate and colon cancer.

For the past 40 years we have been fighting "a war on cancer." While cancer is still a very common disease, more people are surviving cancer. Overall, the American Cancer Society predicted In 2015, there would be an estimated 1,658,370 new cancer cases diagnosed and 589,430 cancer deaths in the U.S. (American Cancer Society, 2015b). However, death rates for all cancer types fell by 1.9 percent a year from 2001 to 2007 in men and by 1.5 percent a year in women from 2002 through 2007 (Reuters, 2011). Steady overall declines in cancer death rates have meant about 898,000 who would have died prematurely from cancer in the past 17 years did not.

Other Cancer prevalence and screening Results

In 2016, 5.6 percent of Iowans had ever been told they had skin cancer, while 7.1 percent reported having been told they had some other type of cancer. This is a decline from 2015 in reported skin cancer, when 6.4 percent of Iowans reported having had it. The prevalence reporting having been told they had some other type of cancer was essentially unchanged.

Skin cancer behaves somewhat differently from other types of cancers, which themselves may vary in prevalence and prognosis according to type. Most cancers, however, are more common with age. Skin cancer is more common among white non-Hispanics. Other cancers, on the other hand, were more common among females and lower income and education. Other cancers were only less common for Hispanics, rather than all non-Whites. The highest prevalence of ever having cancer was for people age 75 and over. In this age group, the prevalence was 21.5 percent for skin cancer and 21.8 percent for other cancers. Black/non-Hispanics and Hispanics as well as those age 18 to 44 years had a skin cancer prevalence of less than 2 percent, while for other cancers only people age 18 to 44 years had as low a prevalence (see table 15.1).

Another type of cancer screening that was asked about was prostate cancer. Screening for this cancer has been controversial since there are many false positive outcomes that can lead to unnecessary treatment.

For Iowa men age 40 and older, a doctor or health professional had talked to 57 percent about the advantages of a prostate specific antigen (PSA) screening test, while only 22.4 percent had been talked to about the disadvantages. The test was recommended by 48.2 percent of the doctors and 88.5 percent of those for whom it was recommended had the test.

Table 15.1 Prevalence of Iowans Reporting ever having Cancer, 2016

DEMOGRAPHIC GROUPS	Ever Had Skin Cancer		Ever Had Other Cancer	
	%	C.I. (95%)	%	C.I. (95%)
TOTAL	5.6	(5.0-6.2)	7.1	(6.5-7.7)
SEX				
Male	5.9	(5.1-6.7)	5.5	(4.7-6.3)
Female	5.3	(4.5-6.1)	8.7	(7.7-9.7)
RACE/ETHNICITY				
White/Non-Hisp.	6.1	(5.6-6.7)	7.4	(6.8-8.0)
Black/Non-Hisp.	1.2	(0.0-3.6)	7.3	(1.4-13.2)
Other/Non-Hisp.	3.9	(0.0-7.8)	6.9	(2.4-11.4)
Hispanic	0.0	(0.0-0.0)	2.3	(0.2-4.4)
AGE				
18-24	0.2	(0.0-0.6)	0.0	(0.0-0.0)
25-34	0.3	(0.0-0.7)	1.8	(0.6-3.0)
35-44	0.9	(0.3-1.5)	1.5	(0.5-2.5)
45-54	2.1	(1.1-3.1)	6.2	(4.4-8.0)
55-64	7.9	(6.3-9.5)	10.0	(8.2-11.8)
65-74	12.9	(10.9-14.9)	14.9	(12.6-17.2)
75+	21.5	(18.7-24.2)	21.8	(18.8-24.8)
EDUCATION				
Less Than H.S.	4.8	(2.6-7.0)	8.8	(5.7-11.9)
H.S. or G.E.D.	6.5	(5.5-7.5)	7.4	(6.4-8.4)
Some Post-H.S.	5.2	(4.2-6.2)	7.0	(5.8-8.2)
College Graduate	5.4	(4.6-6.2)	6.3	(5.3-7.3)
HOUSEHOLD INCOME				
Less than $15,000	5.3	(2.9-7.7)	8.0	(5.3-10.7)
$15,000- 24,999	6.0	(4.2-7.8)	10.4	(8.0-12.8)
$25,000- 34,999	5.5	(3.7-7.3)	6.9	(4.9-8.9)
$35,000- 49,999	8.0	(6.2-9.8)	6.9	(5.3-8.5)
$50,000- 74,999	5.6	(4.4-6.8)	7.1	(5.5-8.7)
$75,000+	4.5	(3.7-5.3)	5.1	(4.1-6.1)

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16. Disability

Background

The World Health Organization's *International Classification of Functioning, Disability and Health (ICF)* (World Health Organization, 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 and 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."

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. With advancing age, an increasing percentage of adults experience limitation of activity (Centers for Disease Control and Prevention, 2016).

The latest available census estimates for 2011 found that nearly 57 million people in the United States (nearly 20 percent) had a disability that prevented or limited their ability in some way (U. S. Bureau of the Census, 2013).

Disability may not only be considered a health condition. It may also be seen as a demographic condition that affects health. This source of health disparities may arise due to difficulties with health access faced by people with disabilities deriving from physical, financial or social sources. Special considerations need to be made for people with disabilities to participate in the health care system on an equal basis with the non-disabled (World Health Organization, 2015). Having a disability does not necessarily need to be 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

In 2016, disability is being determined by two different methods. The first "classic" method uses the questions about being limited and the use of special equipment, which have been in the survey for many years. Whether someone is considered to have a disability in this analysis is based on a positive response to either of these two questions. In 2016, 19.1 percent of Iowans responded "yes" to being limited in any way in activities due to an impairment or health problem. When asked whether they had a health problem requiring the use of special equipment, 7.4 percent of adult Iowans said they needed such items as a cane, a wheelchair, a special bed or a special telephone. According to the "classic" method, 21.3 percent of Iowans were considered to have a disability. This compares to 20.6 percent in 2015, but is nearly identical to that found in 2014 (see figure 16.1).

Figure 16.1: People with Disability in Iowa Trend, 2011-2016
Classic Method

	2011	2012	2013	2014	2015	2016
Disabled	21.7	20.4	20.9	21.5	20.6	21.3
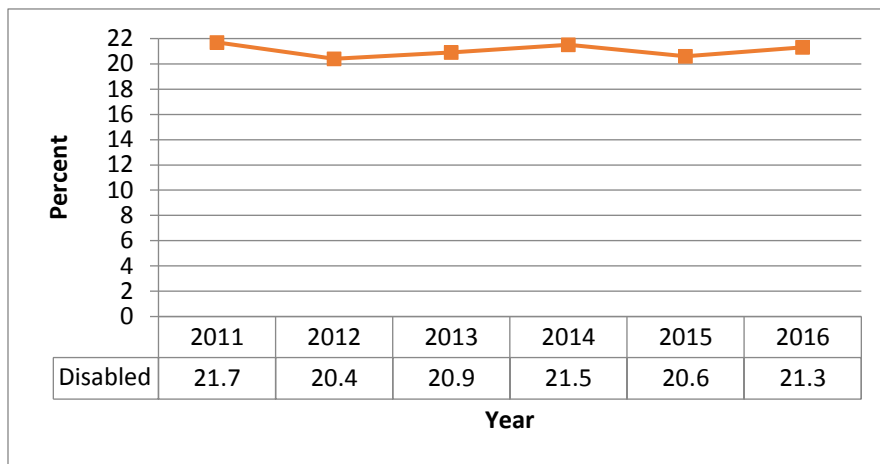
Recently, six functional questions have been added to the BRFSS. The "new" method of determining disability requires a "yes" response to any of these six questions. In 2016, 6.5 percent of Iowans said they were deaf or had trouble hearing; 2.5 percent said they were blind; 9.4 percent said they had serious difficulty concentrating, remembering or making decisions; 11.4 percent said they had serious difficulty walking or climbing stairs; 3.2 percent said they had difficulty dressing or bathing; and 5 percent 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 22.5 percent.

Table 16.1 shows the results of both disability determination methods. Although the values differ somewhat, the pattern of relationship to the demographic variables are similar. Females, older people, people with less education, and people with lower household incomes reported higher percentages of disability. Hispanics showed a lower level of disability. Those with household incomes less than $15,000 reported the highest percentage of disability (43.5 percent classical, 48.4 percent new). Many disabled people are unable to work due to their disability. The second highest reporting group was those ages 75 and over (39.1 percent classic, 47.3 percent new). This group is the most rapidly growing group in the population.

Arthritis is the leading cause of 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, 2017). Arthritis may be caused by a wearing down of cartilage, a change in bone composition or inflammation in the joints.

In 2016, a doctor had told 25.5 percent of Iowans that they had some form of arthritis. This is slightly less than in 2015 (see figure 16.2). Since the percent reporting arthritis is higher than the percent reporting disability, not all people diagnosed with arthritis find it to be a limitation.

Table 16.1
Percent Reporting Being Disabled, 2016

Demographic Groups	Classic Method		New Method	
	%	C.I. (95%)	%	C.I. (95%)
TOTAL	21.3	(20.1-22.5)	22.5	(21.3-23.7)
SEX				
Male	20.1	(18.4-21.8)	21.0	(19.3-22.7)
Female	22.5	(20.9-24.2)	24.0	(22.2-25.7)
RACE/ETHNICITY				
White/Non-Hisp.	21.5	(20.3-22.7)	22.2	(21.0-23.5)
Black/Non-Hisp	25.6	(15.5-35.7)	31.8	(20.9-42.8)
Other/Non-Hisp.	23.0	(14.6-31.3)	27.1	(18.3-35.9)
Hispanic	12.5	(7.1-18.0)	18.7	(11.8-25.6)
AGE				
18-24	10.8	(7.4-14.2)	16.8	(12.5-21)
25-34	10.3	(7.4-13.2)	12.8	(9.9-15.8)
35-44	13.7	(10.6-16.8)	13.2	(10.2-16.2)
45-54	23.0	(19.9-26.2)	19.3	(16.4-22.2)
55-64	27.9	(25.2-30.9)	25.8	(23.2-28.4)
65-74	29.6	(26.7-32.5)	33.4	(30.4-36.4)
75+	39.1	(35.6-42.5)	47.8	(44.3-51.3)
EDUCATION				
Less than H.S.	30.6	(24.7-36.6)	38.9	(32.5-45.3)
H.S. or G.E.D.	23.2	(21.1-25.3)	26.7	(24.5-28.9)
Some Post-H.S.	20.8	(18.7-22.8)	22.2	(20.1-24.4)
College Grad.	16.3	(14.5-18.1)	11.7	(10.3-13.1)
HOUSEHOLD INCOME				
<$15,000	43.5	(37.0-49.9)	48.4	(41.9-54.8)
$15,000- 24,999	34.4	(30.2-38.5)	36.8	(32.6-40.9)
$25,000- 34,999	24.0	(19.5-28.4)	31.1	(26.2-36.0)
$35,000- 49,999	21.3	(18.2-24.4)	22.4	(19.7-25.1)
$50,000- 74,999	14.4	(12.1-16.8)	13.5	(11.2-15.7)
$75,000+	12.9	(11.1-14.8)	10.2	(8.5-11.9)

More women than men reported having arthritis. The prevalence decreased with greater education and income. Fewer racial and ethnic minorities reported having arthritis than White non-Hispanics. Age had the strongest association, however. The demographic group reporting the highest prevalence of arthritis was people age 75 years and older (58.4%). The group with the lowest prevalence was people age 18 to 24 years old (1.5%) (see table 16.2 and figure 16.3).

Table 16.2

Percent Having Been Told by a Doctor They Had
Some Form of Arthritis, 2016

DEMOGRAPHIC GROUPS	Told by doctor you have Arthritis	
	%	C.I. (95%)
TOTAL	25.5	(24.3-26.7)
SEX		
Male	22.1	(20.5-23.7)
Female	28.8	(27.0-30.6)
RACE/ETHNICITY		
White/Non-Hispanic	26.6	(25.4-27.9)
Black/non-Hispanic	20.7	(12.6-28.8)
Other/ non-Hispanic	18.8	(11.6-25.9)
Hispanic	12.2	(6.7-17.6)
AGE		
18-24	1.5	(0.3-2.7)
25-34	7.3	(4.9-9.7)
35-44	13.8	(10.9-16.7)
45-54	23.9	(20.8-27.0)
55-64	37.6	(34.9-40.3)
65-74	50.4	(47.3-53.5)
75+	58.4	(55.0-61.9)
EDUCATION		
Less Than H.S.	31.5	(26.0-37.0)
H.S. or G.E.D.	29.8	(27.6-32.0)
Some Post-H.S.	25.0	(22.8-27.2)
College Graduate	18.4	(16.6-20.2)
HOUSEHOLD INCOME		
<$15,000	35.7	(30.0-41.4)
$15,000- 24,999	32.8	(29.1-36.5)
$25,000- 34,999	33.0	(28.3-37.7)
$35,000- 49,999	25.3	(22.2-28.4)
$50,000- 74,999	22.0	(19.3-24.7)
$75,000+	17.7	(15.7-19.7)

Comparison with Other States

The percent of people in the 50 states and District of Columbia reporting being disabled ranged from 18.8 percent to 39.8 percent with a median of 24.8 percent. Iowa's rate of disability at 22.7 percent was much better than the nation as a whole despite our large elderly population.

For diagnosed arthritis, the range was from 16.9 percent to 38.9 percent. The median of all states was 25.8 percent. Iowa was slightly better than the median at 25.5 percent.

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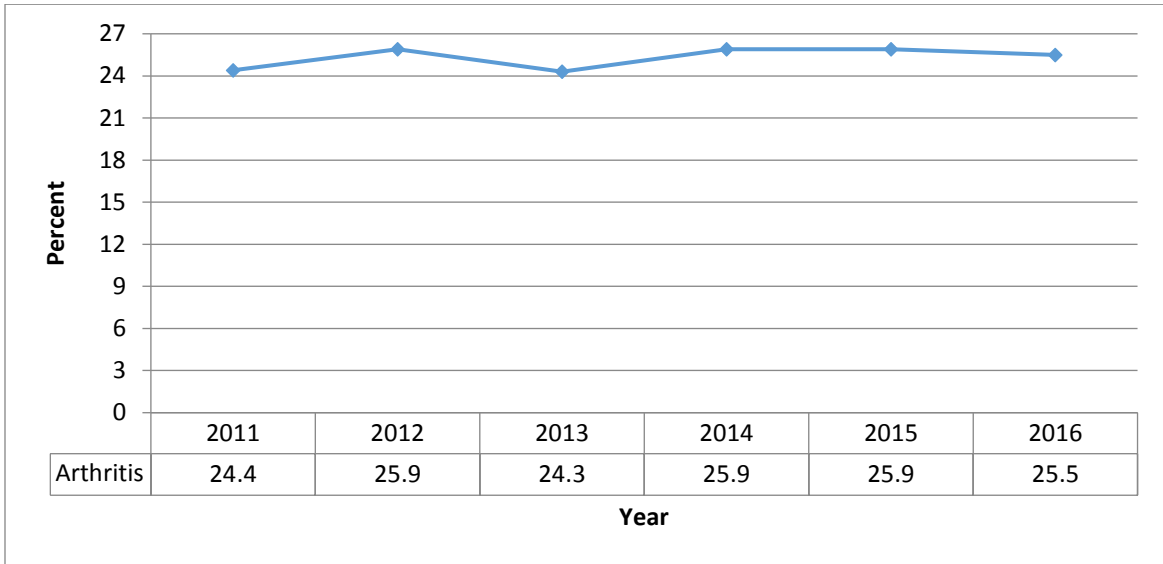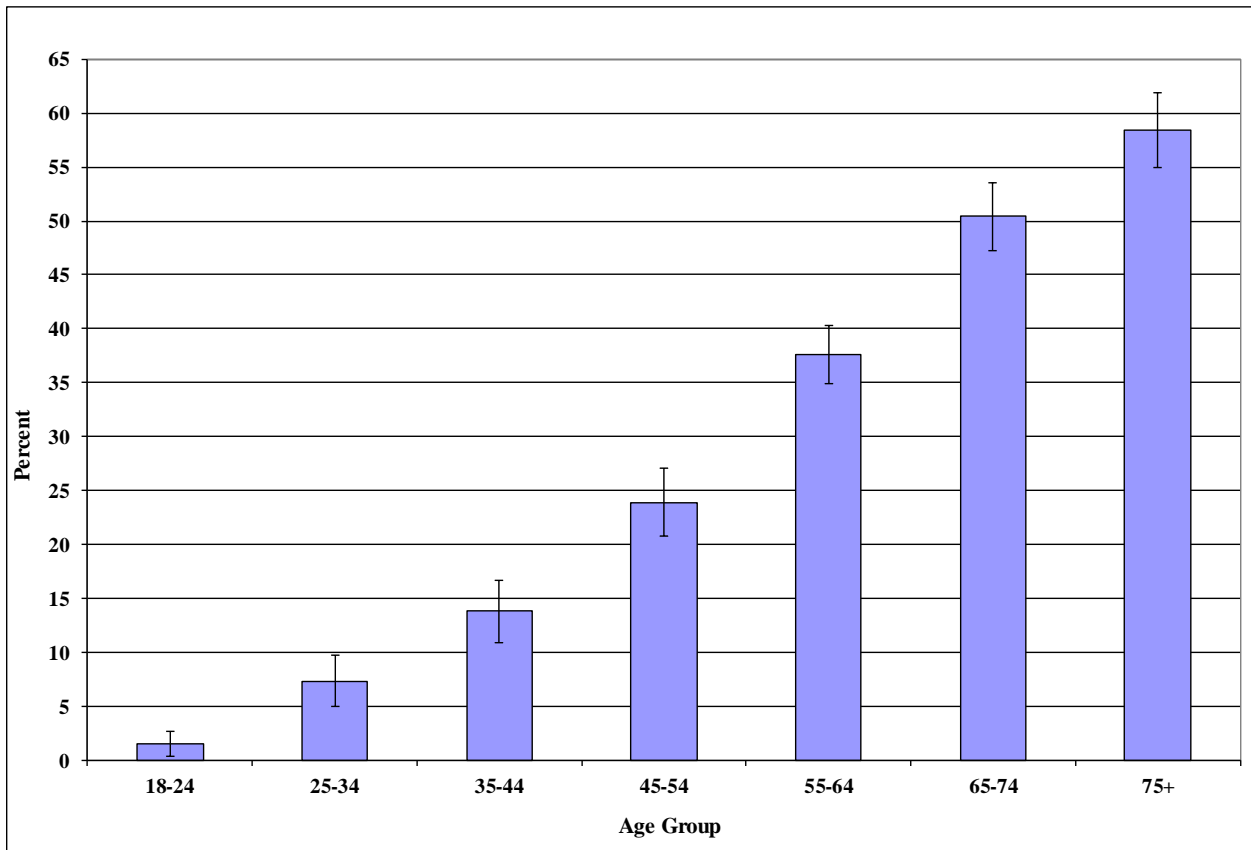## Figure 16.2: Percent of Iowans Diagnosed with Arthritis by Year 2011-2016

	2011	2012	2013	2014	2015	2016
Arthritis	24.4	25.9	24.3	25.9	25.9	25.5

Figure 16.3: Percent of Iowans with Arthritis by Age, 2016

17. Injury Control

Background

The 2016 BRFSS examines three areas related to injury control. These are falls, seatbelt use and drinking and driving.

Falls

Unintentional falls are the leading cause of both fatal and nonfatal serious injuries among the fastest growing segment of the U.S. population, older adults. In the United States, one of every three people age 65 years and older falls each year (Centers for Disease Control and Prevention, 2016). The leading injuries resulting from falls are traumatic brain injuries (TBI), hip fractures, other fractures and damage to internal organs.

The direct medical costs of falls, adjusted for inflation, were $31 billion (Centers for Disease Control and Prevention, 2016). The financial toll for older adult falls is expected to increase as the population ages, and may reach $54.9 billion by 2020. This projection includes indirect costs such as the costs of disabilities resulting from falls.

Elderly persons who survive a fall experience significant morbidity. Hospital stays are almost twice as long in elderly patients who are hospitalized after a fall than in elderly patients who are admitted for another reason. People age 75 and older who fall are four to five times more likely than those age 65 to 74 to be admitted to a long-term care facility for a year or longer.

Compared with elderly persons who do not fall, those who fall experience greater functional decline in activities of daily living (ADLs) and in physical and social activities, and they are at greater risk for subsequent institutionalization (Centers for Disease Control and Prevention., 2016). Some of this is due to a fear of falling again.

Each year, 2.8 million older people are treated in emergency departments for fall injuries (Centers for Disease Control and Prevention, 2016). In Iowa in 2015, the number of fatal falls was 547, with 423 being among those 75 years of age or older (Iowa Department of Public Health, 2017). The number of people age 65 years and older is projected to double in the next 50 years. For people age 85 years and older, relative growth rates are even faster.

One of the strongest predictors of a fall is having sustained a previous fall (American Academy of Family Physicians, 2000). A fall is often a marker of increasing fragility, functional decline, or neurological impairment, and may indicate the need for a secondary prevention strategy (e.g., hip protectors to prevent hip fractures.)

Falls Results

The BRFSS defines a fall as when a person unintentionally comes to rest on the ground or another lower level. Respondents age 45 years and older were asked how many times they had experienced a fall in the last 12 months. In this group, 29.6 percent said they had fallen at least once. Some, 3.2 percent, reported they had fallen five or more times. Of those who had fallen, 34.4 percent said that at least one fall had injured them. Some, 1.9 percent, had been injured five or more times. In this instance, injury was defined as limiting activity for at least a day or causing them to see a doctor.

DEMOGRAPHIC GROUPS	Any Falls in Last 12 Months	
	%	*C.I. (95%)*
TOTAL	29.6	(28.1-31.2)
SEX		
Male	29.3	(27.0-31.6)
Female	30.0	(27.9-32.0)
RACE/ETHNICITY		
White/Non-Hisp.	29.5	(27.9-31.0)
Non-White or Hisp.	32.9	(24.2-41.6)
AGE		
45-54	27.0	(23.7-30.3)
55-64	29.8	(27.2-32.4)
65-74	30.4	(27.5-33.2)
75+	33.5	(30.2-36.9)
EDUCATION		
Less than H.S.	38.3	(30.9-45.7)
H.S. or G.E.D.	29.9	(27.4-32.5)
Some Post-H.S.	26.0	(23.4-28.6)
College Graduate	31.7	(29.0-34.3)
HOUSEHOLD INCOME		
Less than $15,000	41.2	(34.4-48.0)
$15,000- 24,999	36.9	(32.2-41.7)
$25,000- 34,999	31.1	(25.9-36.3)
$35,000- 49,999	31.5	(27.3-35.6)
$50,000- 74,999	26.5	(22.8-30.1)
$75,000+	24.0	(21.3-26.6)

Surprisingly, household income had more relationship to whether people experienced a fall than anything else. More people who were older or who had a lower level of education or a lower household income reported falls. The group reporting the highest prevalence of falls was those with an annual household income less than $15,000 (41.2%), while the group with the lowest prevalence was those with annual household incomes of $75,000 and above (24%) (see table 17.1).

Seatbelt Use

In addition to being the leading cause of death among U.S. residents aged 5-34 years, motor vehicle-occupant injuries account for approximately 15 percent of all nonfatal injuries treated in U.S. emergency departments. In 2013, there were 30,057 passenger vehicles involved in fatal crashes. More than 22,300 passenger vehicle occupants lost their lives in traffic crashes in 2013. There were 1,591,000 crashes involving injuries with 2,099,000 occupants injured (National Highway Traffic Safety Administration, 2015). In 2012, an estimated 2,519,471 ED visits resulted from nonfatal crash injuries, with an estimated lifetime medical cost of $18.4 billion (2012 U.S. dollars). Approximately 7.5 percent of these

visits resulted in hospitalizations that required an estimated 1,057,465 hospital days (Bergen et al., 2014).

Seatbelts save lives. Seat belts, which reduce the risk for fatal injuries from motor vehicle crashes by approximately 45 percent and serious injuries by approximately 50 percent, are the most effective intervention for protecting motor vehicle occupants (Centers for Disease Control and Prevention, 2011).

Failure to wear a seat belt contributes to more fatalities than any other single traffic safety-related behavior. Sixty-three percent of people killed in accidents are not wearing seat belts. Unbelted occupants were five times more likely to die when involved in a crash than belted occupants. Wearing a seat belt is still the single most effective thing we can do to save lives and reduce injuries on America's roadways. The National Highway Traffic Safety Administration (NHTSA) estimates that in 2013, the use of seat belts in passenger vehicles saved 12,584 lives for occupants five years of age and older (National Highway Traffic Safety Administration, 2015).Apart from this, seatbelt use would lead to a substantial saving in hospital costs and disability, particularly from head trauma.

Seatbelt Use Results

In 2016, when respondents were asked how often they wore a seatbelt when driving or riding in a car, 94.9 percent said always or nearly always. Wearing seatbelts was more common among females than males (97.1% vs. 92.7%). It also was less prevalent among those with less education (see table 17.2).

Drinking and Driving

An automobile crash is considered to be alcohol-related when the driver is reported to have a blood alcohol level of .08 grams per deciliter or higher. Considering that blood alcohol level may not be reported for every crash and that any amount of alcohol causes some amount of impairment, figures for its impact are conservative.

Even though the number of fatalities from drunk driving has fallen by about a third over the past decade, about three in every ten American auto crash deaths involve alcohol. Every day, 28 people in the United States die in an alcohol-related vehicle crash—that's one person every 51 minutes (National Highway Traffic Safety Administration, 2017). About one-third of these deaths involved someone other than the driver.

Alcohol-related crashes in the United States cost the public an estimated $52 billion. Even more than that cost was paid in terms of loss of quality of life. People, other than the drinking driver, paid 63 percent of the total cost of these crashes (National Highway Traffic Safety Administration, 2014).

Drinking and Driving Results

In 2016, 6.2 percent of adult Iowans reported that within the past 30 days they had driven when they had too much to drink at least once. More men than women had reported doing this (8.7% vs. 3.4%). A larger percentage of younger people reported driving under the influence, except for the youngest group. The prevalence varied widely but unsystematically for people from different household income groups. The range was 9.7 percent for people age 25 to 34 years to 0.4 percent for those age 75 years and up (see table 17.2).

Comparison with Other States

In all states and the District of Columbia, the range of people reporting at least one fall in the last year ranged from 23.9 percent to 39 percent with a median of 29.6 percent. Iowa was exactly on the median.

In terms of seatbelt use, the percent reporting their use always or nearly always ranged from 81.4 percent to 97.9 percent with a median of 94.3 percent. Iowa was a little better than the median with 94.9 percent.

Drinking and driving at least once in the past month ranged from only 2.3 percent to 19.8 percent. The next highest was only 6.4 percent. Iowa was the third highest state in terms of driving under the influence with 6.2 percent. The median was 4 percent.

Table 17.2: Prevalence of Risks for Motor Vehicle Related Injury in Iowa, 2016

DEMOGRAPHIC GROUPS	Always or Nearly Always Wear Seatbelts		Drink and Drive	
	%	C.I. (95%)	%	C.I. (95%)
TOTAL	94.9	(94.1-95.7)	6.2	(5.2-7.2)
SEX				
Male	92.7	(91.5-93.9)	8.7	(7.1-10.3)
Female	97.1	(96.3-97.9)	3.4	(2.2-4.6)
RACE/ETHNICITY				
White/Non-Hisp.	94.9	(94.1-95.7)	6.3	(5.3-7.3)
Black/Non-Hisp.	94.6	(88.7-100.0)	7.6	(0.0-18.7)
Other/Non-Hisp.	94.7	(90.1-99.4)	4.9	(0.0-11.5)
Hispanic	97.3	(94.5-100).0	6.5	(0.0-13.7)
AGE				
18-24	93.6	(90.9-96.3)	7.2	(3.9-10.5)
25-34	95.6	(93.8-97.4)	9.7	(6.4-13.0)
35-44	93.8	(91.6-96.0)	6.8	(4.1-9.5)
45-54	95.6	(94.0-97.2)	5.7	(3.7-7.7)
55-64	95.7	(94.5-96.9)	5.6	(3.8-7.4)
65-74	95.0	(93.6-96.4)	3.4	(1.7-5.0)
75+	94.8	(93.1-96.5)	0.4	(0.0-0.9)
EDUCATION				
Less than H.S.	93.3	(90.2-96.4)	5.1	(0.0-11.4)
H.S. or G.E.D.	92.5	(90.9-94.1)	6.1	(4.1-8.1)
Some Post-H.S.	95.9	(94.9-96.9)	7.0	(5.0-9.0)
College Graduate	97.3	(96.5-98.1)	5.6	(4.2-7.0)
HOUSEHOLD INCOME				
Less than $15,000	94.6	(91.9-97.3)	6.4	(1.1-11.7)
$15,000- 24,999	92.0	(89.3-94.7)	1.9	(0.1-3.7)
$25,000- 34,999	96.1	(94.3-97.9)	8.4	(3.7-13.1)
$35,000- 49,999	94.4	(92.4-96.4)	9.5	(5.6-13.4)
$50,000- 74,999	95.2	(93.6-96.8)	5.9	(3.9-7.9)
$75,000+	95.8	(94.6-97.0)	6.9	(5.1-8.7)

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18. Immunization

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, 2016).

Influenza can vary greatly from year to year in the severity of its impact. For instance, the usual seasonal influenza primarily was a problem for the elderly, while the recent H1N1 pandemic focused more on younger people. 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 be between 67 percent and 92 percent effective in preventing influenza and reducing its severity. The vaccine may be taken through several methods, but the most common is a shot in the arm. The best time to receive the influenza vaccine is soon after the vaccine becomes available in the fall of each year. The recommendation for annual vaccination against seasonal influenza includes almost everyone in the United States population from six months old and older (Grohskopf et al., 2015).

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 head ache (Centers for Disease Control and Prevention, 2016).

Pneumonia is a lung disease caused by bacteria, viruses and other infectious agents, such as fungi. Pneumonia is frequently a complication of influenza and is responsible for the vast majority of deaths from the two. Each year, over one million people in the U.S. are hospitalized with pneumonia and more than 50,000 people die from the disease (Centers for Disease Control and Prevention, 2016). Influenza and pneumonia combined are the eighth leading cause of death among all Americans and the seventh leading cause for people over age 65. Influenza and pneumonia together resulted in 608 deaths in Iowa in 2015 (Iowa Department of Public Health, 2017).

The Advisory Committee on Immunization Practices (ACIP) recommends that persons aged 65 years old or older receive at least one lifetime dose of pneumococcal vaccine (Tomczyk et al., 2014). A second vaccine is now also recommended to follow the first for added protection. People at higher risk should

receive the pneumonia vaccine at age 18 and older. People at high risk includes smokers, people with respiratory problems such as asthma or COPD, and those with compromised immunity.

Immunization Results

In 2016, 67 percent of Iowans age 65 and over reported having a flu shot in the past 12 months. This is lower than the 70.3 percent reported in 2015, but is about the same as reported in 2014 (see figure 18.1).

Among all adults, 46.6 percent had a flu immunization in the past 12 months. Females, older people, people with more education, people with higher household incomes and non-Hispanic Whites were more likely to have a flu immunization. The lowest percentage was found among Non-Hispanic Blacks (31.2%), while the highest was for those age 75 and older (68.7%) (see table 18.1).

In 2016, 76.3 percent of Iowans age 65 and over reported ever having a pneumonia vaccination. This is slightly higher than the figure found in 2015 (75.8%). It is the highest level seen in the past six years (see figure 18.1).

Among all adults, 34.6 percent had ever received a pneumonia vaccination. Older people were much more likely to have been vaccinated, although 18 to 24-year-olds were more likely than the immediately older groups to do so. Men, Non-Hispanic Blacks, Hispanics, and people with higher education, or higher household income were less likely to have pneumonia vaccinations. The relation with education and income is the opposite of most health risk measures. The lowest percentage of pneumonia vaccination occurred among those who were 35 to 44 years old (11.1%), while those 75 years old and older were highest by far (81.3%) (see Table 18.1). Pneumonia vaccination did not really increase with increasing age until age 55. It dramatically increased after age 65. Since vaccination is only recommended for those age 65 years and older except under special conditions, this is not surprising.

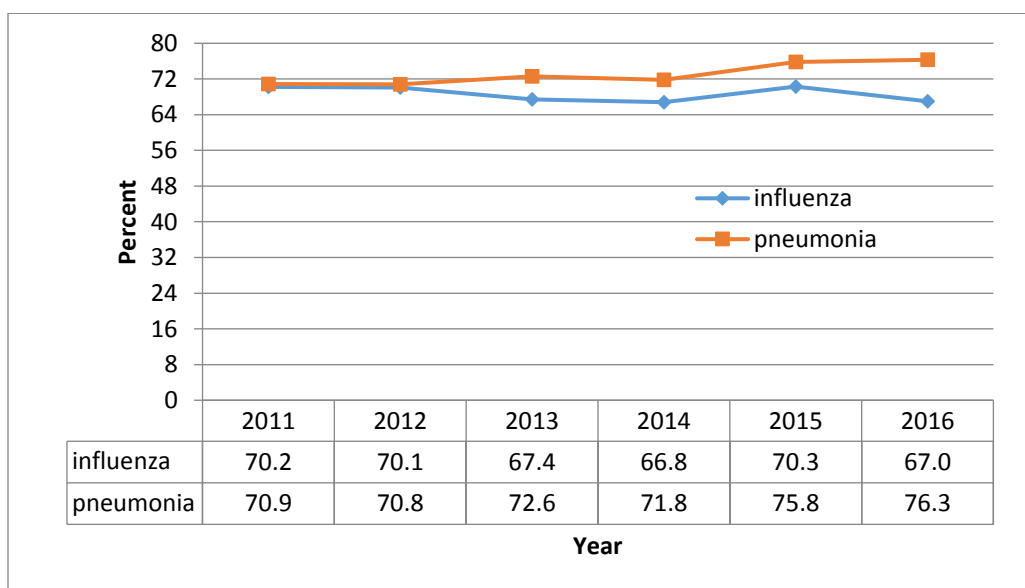## Figure 18.1: Flu and Pneumonia Immunizations by year, 2011-2016
Age >= 65

	2011	2012	2013	2014	2015	2016
influenza	70.2	70.1	67.4	66.8	70.3	67.0
pneumonia	70.9	70.8	72.6	71.8	75.8	76.3

Year

Table 18.1: Percentage of influenza and Pneumonia Immunizations in Adult Iowans, 2016

DEMOGRAPHIC	Influenza		Pneumonia	
GROUPS	%	C.I. (95%)	%	C.I. (95%)
TOTAL	46.6	(45.0-48.2)	34.6	(33.2-36.0)
SEX				
Male	39.8	(37.6-42.0)	32.1	(29.9-34.3)
Female	53.1	(50.9-55.3)	37.0	(35.0-39.0)
RACE/ETHNICITY				
White/Non-Hispanic	48.1	(46.5-49.7)	35.9	(34.3-37.5)
Black/Non-Hispanic	31.2	(20.6-41.8)	25.0	(15.2-34.8)
Other/Non-Hispanic	38.1	(28.4-47.8)	34.2	(24.6-43.8)
Hispanic	36.9	(28.5-45.3)	15.3	(9.2-21.4)
AGE GROUP				
18-24	36.7	(31.4-42.0)	31.5	(25.4-37.6)
25-34	38.4	(34.1-42.7)	19.2	(15.3-23.1)
35-44	37.5	(33.4-41.6)	11.1	(8.4-13.8)
45-54	37.7	(34.2-41.2)	18.3	(15.4-21.2)
55-64	53.5	(50.6-56.4)	29.4	(26.7-32.1)
65-74	65.6	(62.6-68.6)	72.4	(69.6-75.3)
75+	68.7	(65.3-72.0)	81.3	(78.4-84.1)
EDUCATION				
Less than H.S.	37.7	(31.4-44.0)	35.8	(29.5-42.1)
H.S. or G.E.D.	43.0	(40.5-45.5)	38.9	(36.4-41.4)
Some Post-H.S.	46.2	(43.5-48.9)	34.5	(32.0-37.0)
College Graduate	54.8	(52.3-57.3)	28.7	(26.3-31.1)
HOUSEHOLD INCOME				
Less than $15,000	42.1	(35.0-49.2)	38.7	(32.4-45.0)
$15,000- 24,999	47.3	(42.0-52.6)	47.1	(42.6-51.6)
$25,000- 34,999	46.8	(41.1-52.5)	41.2	(35.9-46.5)
$35,000- 49,999	45.4	(40.7-50.1)	38.5	(34.6-42.4)
$50,000- 74,999	51.2	(46.9-55.5)	29.4	(26.1-32.7)
$75,000+	54.9	(51.6-58.2)	22.9	(20.5-25.3)

Those who had ever been told they had several chronic conditions that could increase the risk from flu or pneumonia were more likely to receive their flu and pneumonia vaccinations than those who had not been told they had any of these conditions. Of all respondents ever told they had diabetes, asthma, COPD or kidney disease, 55 percent had a flu vaccination and 54.1 percent had a pneumonia vaccination. This compares with 44.4 percent and 29.4 percent respectively for those who did not have any of these conditions.

Comparison with Other States

The median percentage of the population age 65 and over who have had a flu shot in the past 12 months from all the states and the District of Columbia was 58.6 percent in 2016. The range was from 49.5 percent to 67.5 percent. The prevalence in Iowa was near the maximum at **6**7 percent. There was only one state with a higher rate.

The median percentage of the population age 65 years old and older who ever had a pneumonia vaccination was 73.4 percent. The range was from 64.4 percent to 79.8 percent. Iowa's value of 7**6.3** percent 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 2016 figures of 67 percent for having a flu vaccination and 76.3 percent for ever having a pneumonia shot have a long way to go to meet these targets. The Healthy People 2020 goal for flu immunization of people age 18 to 64 is 80 percent. Iowa misses this by an even greater amount having an immunization prevalence of only 41.1 percent.

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19. HIV/AIDS

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, 2016).

The HIV epidemic has been with us for more than 30 years (Centers for Disease Control and Prevention, 2011a). Worldwide, 36.9 million persons were living with HIV infection at the end of 2014. About 1.1 million people in the United States are living with HIV (Centers for Disease Control and Prevention, 2017). Of those people, about one in seven do not know they are infected. Not knowing puts them and others at risk.

In 2015, an estimated 39,513 people were diagnosed with HIV infection in the United States. The number of new HIV diagnoses fell 19 percent from 2005 to 2014. Because HIV testing has remained stable or increased in recent years, this decrease in diagnoses suggests a true decline in new infections. The decrease may be due to targeted HIV prevention efforts; however, progress has been uneven and diagnoses have increased among a few groups. (Centers for Disease Control and Prevention, 2017).

Groups with the largest exposure include "men who have sex with men," injection drug users, African Americans and Hispanics. New diagnoses are occurring among women and people infected heterosexually. These data must be used to ensure targeted prevention efforts to reach those in greatest need, with a primary focus on young African American and Hispanic men and women at risk through sexual and drug-related behaviors.

African Americans and Hispanics continue to be over-represented among persons with HIV diagnoses when compared to the sizes of their populations in Iowa; however, it is important to keep in mind that non-Hispanic whites account for 60 percent of new HIV diagnoses and 65 percent of persons living with HIV/AIDS (Iowa Department of Public Health, 2017).

HIV/AIDS prevalence continues to increase in Iowa. As of December 31, 2016, there were 2,371 persons living with HIV or AIDS who were Iowa residents at the time of their diagnoses. There were 136 new diagnoses during 2016, which was the highest number ever recorded. (Iowa Department of Public Health, 2017).

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, 2017).

CDC recommends routine HIV testing in health care settings. People need to get tested so they can get treated and not infect others. Being tested will save their lives and the lives of other people (Centers for Disease Control and Prevention, 2011). Treatment for HIV is more effective than ever before.

HIV/AIDS Results

In 2016, 26.8 percent of all adult Iowans reported ever being tested for HIV, not including part of a blood donation. This is a slight decrease from 2015, when 27.3 percent said they had been tested (see figure 19.1).

Females, minority race/ethnicity, younger people except those under 25 years, and those with low household incomes were more likely to be tested. The largest proportion of respondents tested was among Non-Hispanic Blacks (60.6%). The smallest proportion reporting being tested was those age 75 years and older (3.5%) (see table 19.1).

Table 19.1: Percentage of Iowans Tested for HIV/AIDS, 2016

DEMOGRAPHIC GROUPS	Had HIV Test	
	%	C.I. (95%)
TOTAL	26.8	(25.4-28.2)
SEX		
Male	24.9	(22.7-27.1)
Female	28.5	(26.3-30.7)
RACE/ETHNICITY		
Non-Hispanic White	24.9	(23.3-26.5)
Non-Hispanic Black	60.6	(48.6-72.6)
Non-Hispanic Other	34.4	(24.5-44.3)
Hispanic	37.6	(28.8-46.4)
AGE		
18-24	21.0	(16.3-25.7)
25-34	43.6	(39.1-48.1)
35-44	42.7	(38.4-47.0)
45-54	32.9	(29.4-36.4)
55-64	18.3	(15.9-20.7)
65-74	11.1	(9.0-13.3)
75+	3.5	(2.2-4.8)
EDUCATION		
Less than H.S.	28.0	(21.5-34.5)
H.S. or G.E.D.	23.7	(21.2-26.2)
Some Post-H.S.	28.7	(26.2-31.2)
College Graduate	27.2	(24.8-29.6)
HOUSEHOLD INCOME		
<$15,000	38.0	(31.1-44.9)
$15,000- 24,999	30.3	(26.0-34.6)
$25,000- 34,999	27.0	(21.7-32.3)
$35,000- 49,999	22.3	(18.6-26.0)
$50,000- 74,999	26.9	(23.4-30.4)
$75,000+	27.4	(24.9-29.9)

There is an interesting interaction between sex and age. Figure 19.2 shows that in younger people, many more women have been tested, while men are more likely to be tested in the older age groups.

Comparison with Other States

In all states and the District of Columbia, the percentage of people who had a test for HIV ranged from 22.9 percent to 71.3 percent. The median percentage of people tested was 35.6 percent. There were only two states with a lower percentage than Iowa's figure of 26.8 percent.

Health Objectives for the Nation

Healthy People 2020 has the goal of 16.9 percent of people age 15 to 44 being tested for HIV in the past 12 months. Iowa had a level of 9.3 percent for respondents age 18 to 44 tested within this time period. This is far below the goal.

Figure 19.1: Iowans having HIV test by year—2011-2016

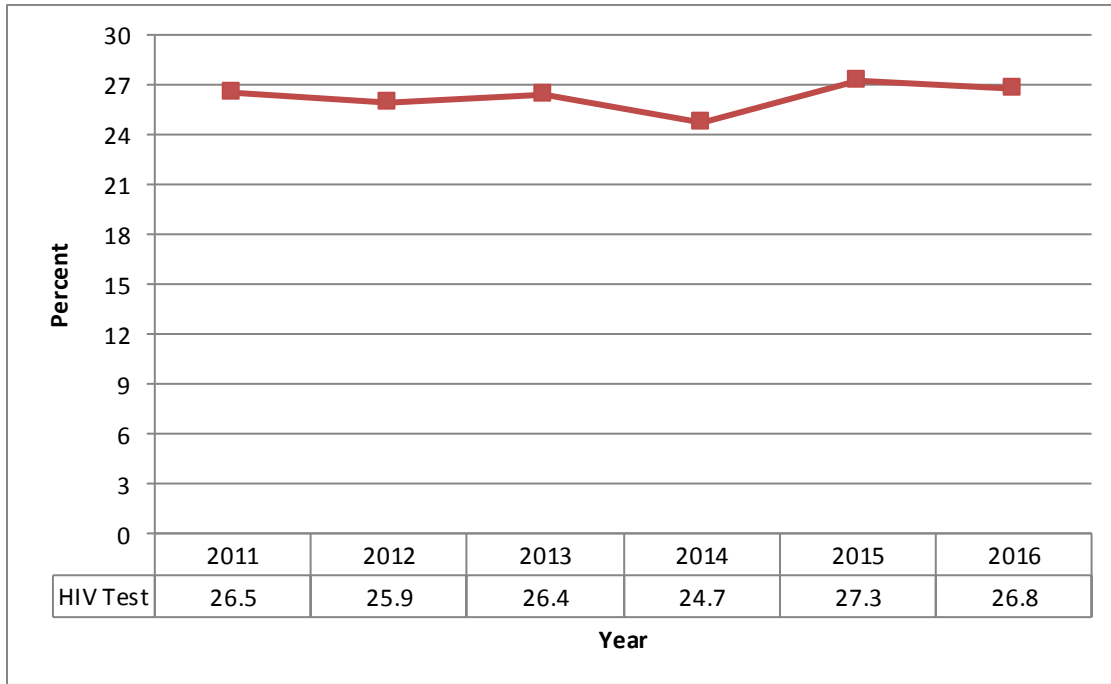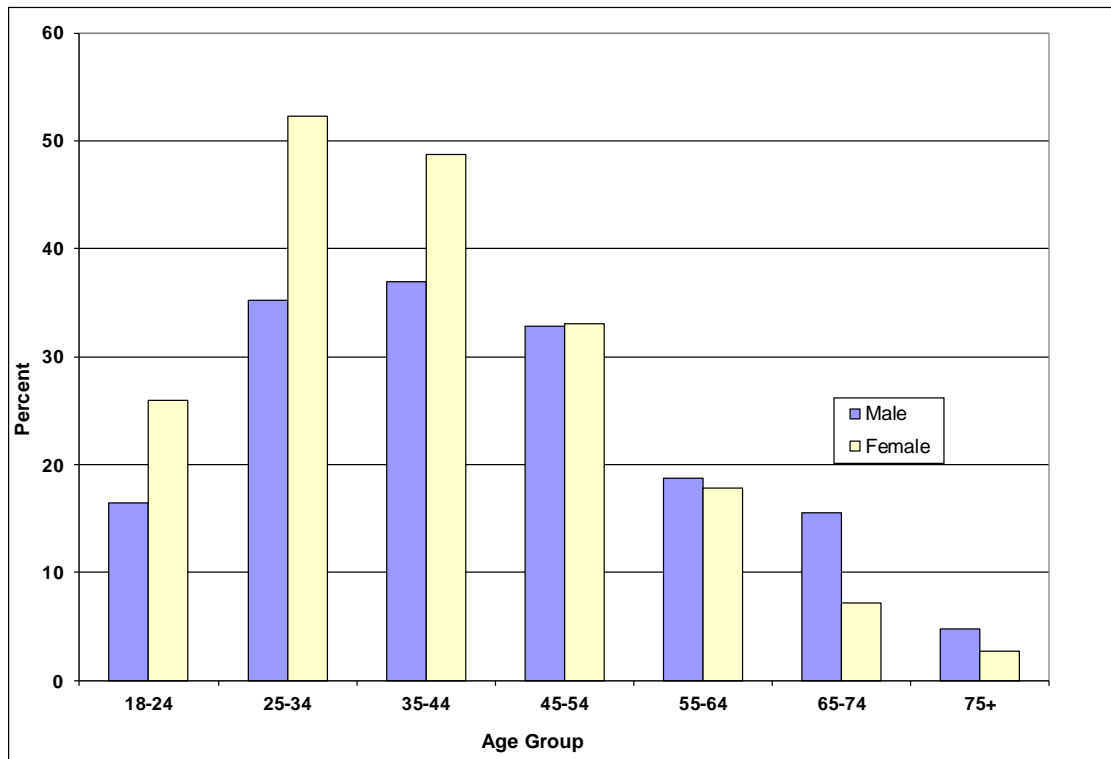|	2011	2012	2013	2014	2015	2016
HIV Test	26.5	25.9	26.4	24.7	27.3	26.8

Figure 19.2: Percentage of Iowans Reporting Ever Being Tested for HIV by Age and Gender, 2016

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20. Oral Health

Background

Good overall health requires good oral health. Oral health complications not only reflect general health conditions, but also exacerbate them. Oral diseases are linked to poor pregnancy outcomes, cardiovascular disease, diabetes and respiratory disease. Poor oral health results in chronic and acute pain, loss of days from work and school, and inappropriate use of emergency rooms. Untreated oral diseases and conditions can affect the ability to eat and drink, swallow, maintain proper nutrition, smile and communicate (Institute of Medicine (IOM) and National Research Council (NRC), 2011).

There are threats to oral health across the lifespan. Nearly one-third of all adults in the United States have untreated tooth decay. One in seven adults aged 35 to 44 years has gum disease. In addition, nearly a quarter of all adults have experienced some facial pain in the past six months. Oral cancers are most common in older adults, particularly those over 55 years who smoke and are heavy drinkers (Centers for Disease Control and Prevention, 2013).

The baby boomer generation will be the first where the majority will maintain their natural teeth over their entire lifetime, having benefited from water fluoridation and fluoride toothpastes. Over the past 10 years, the number of adults missing all their natural teeth has declined from 31 percent to 25 percent for those aged 60 years and older, and from 9 percent to 5 percent for those adults between 40 and 59 years. However, 5 percent means a surprising one out of 20 middle-aged adults is missing all their teeth (Centers for Disease Control and Prevention, 2013).

Toothaches are the most common pain of the mouth or face reported by adults. This pain can interfere with vital functions such as eating, swallowing and talking. Almost one of every four adults reported some form of facial pain in the past six months (Centers for Disease Control and Prevention, 2013).

Most adults show signs of gum disease. Severe gum disease affects about 14 percent of adults aged 45 to 54 years. This increases to one in every four adults aged 65 years and older. Signs and symptoms of soft tissue diseases such as cold sores are common in adults and affect about 19 percent of those aged 25 to 44 years (Centers for Disease Control and Prevention, 2013).

Profound disparities remain that affect those without the resources to achieve good oral care or the knowledge of its importance. Over 40 percent of poor adults (20 years and older) have at least one untreated decayed tooth compared to 16 percent of non-poor adults. This fact inspired the first Surgeon General's Report on Oral Health, which identified a "silent epidemic" of dental and oral diseases and called for a national effort to improve Americans' oral health (U. S. Department of Health and Human Services, 2000).

Many studies document that those in poverty, racial minorities, and those in rural areas have less access to dental care. For example, poor children are more likely to have unmet dental need than children from families with higher incomes. The most common barriers to good oral health are a lack of dental insurance or the inability to pay for care and problems of access involving transportation and travel, as well as the need to take time off work for appointments (U. S. Department of Health and Human Services, 2000).

Increasing access to preventive care is an important way to improve oral health for all populations, but in particular, for the vulnerable and underserved. Many oral diseases can be prevented through a combination of behavior changes (e.g., home care and hygiene, proper food choices, tobacco cessation) and system changes (e.g., community water fluoridation, oral health promotion and awareness, increasing accessibility to care, and increasing the dental safety net).

Oral Health Results

In 2016, 71.3 percent of Iowans surveyed reported visiting a dentist, dental hygienist or dental clinic within the past year. Females, people with higher education and greater income were more likely to report a dental visit during the past 12 months. Whites and Hispanics were more likely to have a dental visit than other race and ethnic groups. Iowans with a household income of $75,000 or more had the highest proportion reporting recent dental visits (84.9%). At the other extreme, only 47.5 percent of those from households earning less than $15,000 annually reported visiting a dentist in the past 12 months (see table 20.1).

A majority of adult respondents (61.4%) had no permanent teeth removed due to tooth decay or gum disease. The percentage of those with permanent teeth removed rose with increasing age, lower income, and lower education. The percentage with no permanent teeth removed was highest for those age 18 to 24 years old (89.4%). The lowest percent having all their own teeth was 75 years and older (27.1%) (see Table 20.1). The percent of Iowans age 65 and older with all permanent teeth removed was 14.9 percent.

Health Objectives for Iowa and the Nation

Healthy People 2020 had a goal of 31.2 percent of Americans age 45 to 64 years having no permanent teeth extracted. Iowa far surpassed this goal with 54.7 percent having no extractions in this age group.

In *Healthy People 2020* the goal was 21.6 percent of people age 65 to 74 years having all permanent teeth extracted. Iowa surpassed this goal having only 13 percent with all permanent teeth extracted.

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3. U. S. Department of Health and Human Services. Oral Health in America: A Report of the Surgeon General, Atlanta, GA., 2000. Available at http://www.surgeongeneral.gov/library/reports/oralhealth/index.html.

Table 20.1:
Percentage of Iowans Having Dental Care, 2016

DEMOGRAPHIC GROUPS	Last Dental Visit Within 12 Months		No Permanent Teeth Removed	
	%	C.I. (95%)	%	C.I. (95%)
TOTAL	71.3	(69.9-72.7)	61.4	(60.0-62.8)
SEX				
Male	67.9	(65.7-70.1)	61.1	(58.9-63.3)
Female	74.7	(72.9-76.5)	61.8	(59.8-63.8)
RACE/ETHNICITY				
White/Non-Hisp.	72.4	(71.0-73.8)	61.2	(59.8-62.6)
Black/Non-Hisp.	61.6	(50.4-72.9)	59.8	(49.0-70.6)
Other/Non-Hisp.	51.3	(41.0-61.6)	63.9	(54.4-73.4)
Hispanic	72.9	(65.5-80.2)	63.7	(55.5-71.9)
AGE				
18-24	74.6	(69.7-79.5)	89.4	(85.7-93.1)
25-34	67.2	(63.1-71.3)	79.5	(76.0-83.0)
35-44	71.7	(67.6-75.8)	72.3	(68.6-76.0)
45-54	71.6	(68.3-74.9)	61.9	(58.4-65.4)
55-64	73.3	(70.8-75.8)	48.2	(45.3-51.1)
65-74	72.8	(70.0-75.7)	35.6	(32.6-38.5)
75+	67.1	(63.7-70.5)	27.1	(24.0-30.1)
EDUCATION				
Less than H.S.	52.5	(45.8-59.2)	37.7	(31.0-44.4)
H.S. or G.E.D.	65.8	(63.3-68.3)	52.7	(50.2-55.2)
Some Post-H.S.	73.5	(71.1-75.9)	64.2	(61.7-66.7)
College Graduate	82.3	(80.3-84.3)	77.3	(75.3-79.3)
HOUSEHOLD INCOME				
Less than $15,000	53.0	(47.3-58.7)	41.3	(34.6-48.0)
$15,000- 24,999	53.7	(49.4-58)	45.9	(41.4-50.4)
$25,000- 34,999	60.5	(56.2-64.8)	48.8	(43.3-54.3)
$35,000- 49,999	67.5	(64.0-71.0)	59.8	(55.9-63.7)
$50,000- 74,999	75.6	(72.5-78.7)	65.9	(62.6-69.2)
$75,000+	83.4	(81.2-85.6)	76.2	(73.8-78.6)

21. Mental Health and Adverse Childhood Experiences

Background

Mental Health and mental illness are two different things. Mental Health is a general term referring not only to the absence of mental disorder, but also to the ability of a person to successfully handle the daily challenges and social interactions of life (Centers for Disease Control and Prevention, 2013). Mental illness refers to disorders of mood, thought or behavior.

Health is not merely physical health, but also mental health; nor are these two independent of each other. Poor physical health can lead to poor mental health and poor mental health can lead to poor physical health.

Depression is characterized by a state of low mood and an aversion to activity. Depression is the most common type of mental illness, affecting more than 26 percent of the U.S. adult population. It has been estimated that by the year 2020, depression will be the second leading cause of disability throughout the world, trailing only ischemic heart disease (Centers for Disease Control and Prevention, 2013).

Anxiety disorders are also common in the general population. Anxiety disorders are characterized by excessive worry about everyday events.

Dementias such as Alzheimer's have become an increasing problem due to the aging of the population. Dementias are characterized by increasing inability to remember and concentrate.

The economic costs of mental illness are difficult to pin down. Serious mental illness costs America $193.2 billion in lost earnings per year (National Alliance on Mental Illness, 2017). Much of the economic burden of mental illness is not the cost of care, but the loss of income due to unemployment, expenses for social supports, and a range of indirect costs due to a chronic disability that begins early in life.

Mental health and mental disorders also have a significant impact on the total health care system. Up to half of all visits to primary care physicians are due to conditions caused by or made worse by mental or emotional problems. Evidence has shown that mental disorders, especially depressive disorders, are strongly related to the occurrence, successful treatment, and course of many chronic diseases including diabetes, cancer, cardiovascular disease, asthma and obesity, and many risk behaviors for chronic disease, such as physical inactivity, smoking, excessive drinking and insufficient sleep (Centers for Disease Control and Prevention, 2013).

Adverse childhood experiences (ACEs) are stressful or traumatic events, 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. 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).

Mental Health and Adverse Childhood Experiences Results

When asked about various chronic conditions in 2016, 14.8 percent of adults reported that they had ever been told they had a depressive disorder. This is significantly lower than in 2015 when it was 19

percent. This is a major reversal of the trend from previous years, and is the lowest level found in the past six years (see figure 21.1).

Figure 21.1: Percent of Iowans Ever Told They Had Depression by Year, 2011 – 2016

	2011	2012	2013	2014	2015	2016
Depression	15.2	17.0	19.2	18.7	19.0	14.8

Year
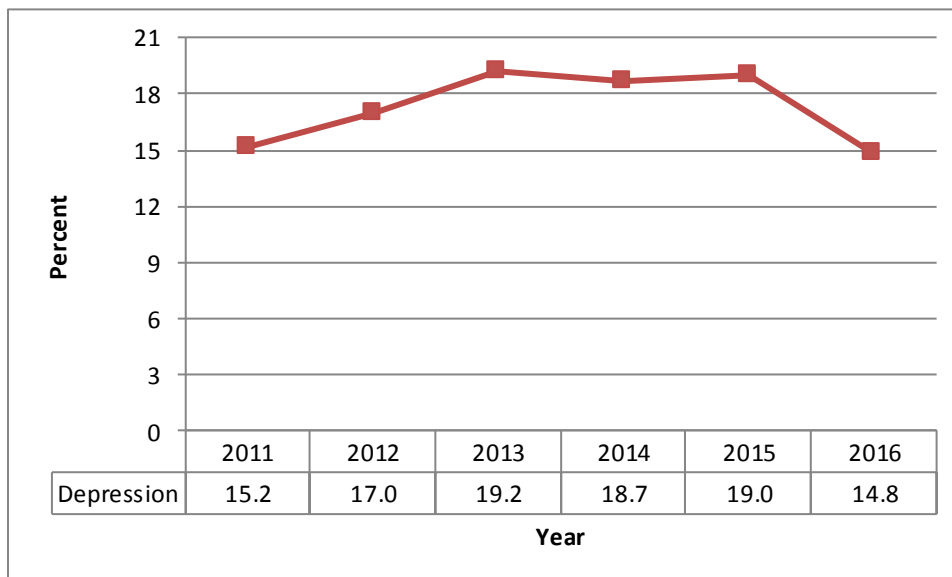
The prevalence of depression was greater among women, people with less education and lower income individuals, and less among the elderly. The highest prevalence was among those with annual household incomes less than $15,000 (31.6%). The lowest prevalence was among those age 75 years or more (8.2%) (see table 21.1).

The BRFSS contained many questions in three modules to explore the early childhood experiences of the respondents. These were adverse childhood experiences (ACEs), physical and emotional neglect and resilience. Respondents were asked to answer questions about the time before they were 18 years old. Rather than look at each question from these modules individually, a single score was determined for each module based on all the responses to the questions in that module.

ACEs look at a wide range of experiences from less than ideal parents such as divorced, incarcerated or drug abusing to physical, psychological or sexual abuse. This module contained 11 questions. For Iowans, 39.8 percent indicated no adverse childhood experiences, 22.8 percent indicated one, 21.5 percent indicated two or three, 9 percent indicated four or five and 7 percent indicated six or more.

The resilience and physical and emotional neglect modules both contained six questions. A higher score on these modules indicated a more positive experience during childhood. For resilience, each question was scored from zero to four points with four being the most positive.

Table 21.1
Prevalence of Reported Depression in
Iowa, 2016

DEMOGRAPHIC GROUPS	Depressive Disorder	
	%	C.I. (95%)
TOTAL	14.8	(13.6-16.0)
SEX		
Male	10.5	(9.1-11.9)
Female	19.0	(17.2-20.8)
RACE/ETHNICITY		
White/Non-Hispanic	14.6	(13.4-15.8)
Black/Non-Hispanic	14.1	(5.7-22.5)
Other/Non-Hispanic	21.3	(13.2-29.4)
Hispanic	15.3	(9.2-21.4)
AGE GROUP		
18-24	16.2	(12.1-20.3)
25-34	15.7	(12.6-18.8)
35-44	16.3	(13.2-19.4)
45-54	16.7	(14.0-19.4)
55-64	15.6	(13.4-17.8)
65-74	12.3	(10.2-14.4)
75+	8.2	(6.3-10.2)
EDUCATION		
Less than H.S.	22.6	(17.1-28.1)
H.S. or G.E.D.	14.6	(12.6-16.6)
Some Post-H.S.	15.9	(13.9-17.9)
College Graduate	10.8	(9.2-12.4)
HOUSEHOLD INCOME		
Less than $15,000	31.6	(25.5-37.7)
$15,000- 24,999	21.6	(17.9-25.3)
$25,000- 34,999	20.9	(16.6-25.2)
$35,000- 49,999	11.4	(8.9-13.9)
$50,000- 74,999	10.9	(8.5-13.3)
$75,000+	8.8	(7.2-10.4)

Over half of Iowans, 52.8 percent, scored between 19 and 24 points on this module; however, 3.6 percent only scored between zero and six points.

For physical and emotional neglect, each question was scored from zero to three points,

with three being the most positive. A majority (54.3%) scored a full 18 points for the module, while nearly 2 percent scored six points or less.

The number of ACEs was positively related to other physical and mental health measures. Days of bad physical health, frequent mental distress (FMD) and diagnosed depression all were related to number of ACEs reported, with the mental health measures being the most strongly related (see Table 21.2).

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 has a goal of 6.1 percent of people experiencing a major depression episode. The 2016 Iowa BRFSS shows 14.8 percent of adult Iowans reporting ever having a depressive episode. Although it is not certain if all these would have been considered major depression, Iowa very likely exceeds the goal.

References

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3. National Alliance on Mental Illness. Mental Health by the Numbers, 2017. Available at https://www.nami.org/Learn-More/Mental-Health-By-the-Numbers.

Table 21.2

Percent of mental and physical health measures by Adverse Childhood Experiences Reported

ACE Experiences	Depression		Frequent Mental Distress		>14 Days Bad Physical Health	
	Percent	95% CI	Percent	95% CI	Percent	95% CI
0	7.1	5.8-8.3	4.7	3.6-5.7	6.8	5.8-7.9
1	11.8	9.7-13.9	7.0	5.3-8.8	8.1	6.4-9.8
2 or 3	15.4	12.7-18.1	9.6	7.6-11.7	9.4	7.5-11.3
4 or 5	30.0	24.4-35.6	19.5	14.6-24.5	16.3	11.8-20.8
6 or more	46.5	39.6-53.4	31.8	25.3-38.3	17.2	12.3-22.1

Year 2020 Health Objectives for the Nation
State Summary of BRFSS[1] Data for 2016
Iowa

Healthy People 2020[2] Objective[3]	Yr. 2020 Target	State, 2016
Health Insurance (Objective #AHS-1.1) Ages >=18	100.0%	93.5%
Specific Source of Ongoing Primary Care (Objective #AHS-5.3) Ages 18-64	89.4%	74.4%
Specific Source of Ongoing Primary Care (Objective #AHS-5.4) Ages >= 65	100.0%	87.5%
Pap Test, Within Past Three Years according to latest guidelines (Objective #C-15), Women, Ages 21-65	93.0%	81.6%
Colorectal cancer screening according to latest guidelines (Objective #C-16) Ages 50-75	70.5%	68.6%
Mammogram, Within Past Two Years according to latest guidelines (Objective #C-17), Women, Ages 50-74	81.1%	77.6%
Increase the proportion of adolescents and adults who have been tested for HIV in the past 12 months (Objective #HIV-14.1) Ages 18 – 44	16.9%	9.3%
Influenza Immunization, Within Past Year (Objective # IID-12.5) Ages 18 – 64	80.0%	41.1%
Influenza Immunization, Within Past Year (Objective # IID-12.7) Ages >= 65	90.0%	67.0%
Pneumococcal Pneumonia Vaccination, Ever Had (Objective # IID-13.1) Ages >= 65	90.0%	76.3%
Increase the proportion of adults who are at a healthy weight (Objective #NWS-8) Ages >= 20	33.9%	28.6%
Obese, BMI >= 30 (Objective NWS-9) Ages >= 20	30.6%	33.2%
Any Permanent Teeth Extracted Due to Caries or Periodontal Disease (Objective #OH-4.1) Ages 45-64	68.8%	45.3%
Extraction of All Natural Teeth (Objective # OH-4.2) Ages 65-74	21.6%	13.0%
No Leisure Time Physical Activity (Objective # PA-1) Ages >= 18	32.6%	22.7%
Binge Drinking, During the Past Month (Objective #SA-14.3) Ages >= 18	24.3%	21.2%
Cigarette Smoking (Objective #TU-1.1) Ages >= 18	12.0%	16.7%

Healthy People 2020[2] Objective[3]	Yr. 2020 Target	State, 2016
Smokeless Tobacco Use (Objective #TU-1.2) Ages >= 18	0.3%	4.7%
Increase smoking cessation attempts by adult smoker (Objective #TU-4.1) Ages >= 18	80.0%	52.5%
Increase recent smoking cessation success by adult smokers 6 Mo. To 1 Yr. (Objective #TU-4.1) Ages >= 18	8.0%	4.7%
Use of safety belts (Objective #IVP-15)	92.4%	94.9%
Adults getting sufficient sleep (Objective #SH-4) Age >= 18 Sufficient > 7 hrs. if age > 21, else > 8 hrs.	71.1%	68.9%

Health Objectives for Iowa:
State Summary of BRFSS[1] Data for 2016

Healthy Iowans[2] Objective[3]	Yr. 2016 Target	Iowa, 2014
An increase in the proportion of people with health insurance Ages 18 – 64	100.0%	92.2%
An increase in the proportion of people who have one person as a health provider.	82.5%	77.2%
Influenza Immunization, Within Past Year (Objective #10-2) Ages >= 65	90.0%	67.0%
Pneumonia Vaccination, Ever Had Ages >= 65	90.0%	76.3%
A reduction in adult binge drinking	16.0%	21.2%
A reduction in adult tobacco use (Cigarette Smoking)	17.0%	16.7%
Mammogram screening in past 2 years Women Ages >= 50	88.0%	74.8%
Colorectal cancer screening Ages $\geq$ 50 < 75	70.0%	68.6%
Pap test in past 3 years Women Ages >= 21 years	92.0%	68.7%
A reduction in the proportion of adults who are obese	27.0%	32.0%
An increase in seatbelt usage to reduce injuries and deaths from motor vehicle crashes.	96.0%	94.9%

[1]Behavioral Risk Factor Surveillance System
[2]Iowa Department of Public Health, *Healthy Iowans: Iowa's Health Improvement Plan 2012-2016, 2013 Progress Report*.
[3]In some cases, BRFSS definitions of objectives differ slightly from those in Healthy Iowans. See Healthy Iowans for the exact definition of the objective.

Section 1: Health Status

1.1: Would you say that in general your health
is:

1 Excellent
2 Very good
3 Good
4 Fair or
5 Poor

Section 2: Healthy Days - Health-related Quality of Life

2.1: 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?

    Number of days

8 8   None

2.2: 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?

_ _   Number of days

8 8   None If Q2.1 also "None", skip to next module

If Q2.1 and Q2.2=88 (None), ⇨ Go to next section.

2.3: 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?

_ _   Number of
days
8 8   None

Section 3: Health Care Access

3.1: Do you have any kind of health care coverage, including health
    insurance, prepaid plans such as HMOs, or government plans
    such as Medicare?

1 Yes
2 No

3.2: Do you have one person you think of as your personal doctor or
    health care provider?
If "No," ask: "Is there more than one, or is there no person who you
    think of as your personal doctor or health care provider?"
1 Yes, only one
2 More than one
3 No

3.3: Was there a time in the past 12 months when you needed to
    see a doctor but could not because of the cost?
1 Yes
2 No

3.4: About how long has it been since you last visited a doctor for a
    routine checkup?   A routine checkup is a general physical
    exam, not an exam for a specific injury, illness, or condition.
1 Within past yr. (any time less than 12 months ago)
2 Within past 2 yrs. (one year but less than 2 years ago)
3 Within past 5 yrs. (two years but less than 5 years ago)

4 5 or more years ago
8 Never

Section 4: Exercise

4.1: 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?
1 Yes
2 No

Section 5: Inadequate Sleep

I would like to ask you about your sleep pattern.
5.1: On average, how many hours of sleep do you get in a 24-hour
period?
**INTERVIEWER NOTE: Enter hours of sleep in whole numbers,
rounding 30 minutes (1/2 hour) or more up to the next whole hour
and dropping 29 or fewer minutes.**
_ _   Number of hours [01-24]

Section 6: Chronic Health Conditions

Now I would like to ask you some questions about general
    health conditions.
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."
6.1: (Ever told) you had a heart attack, also called a myocardial
    infarction?
1 Yes
2 No

6.2: (Ever told) you had angina or coronary heart disease?
1 Yes
2 No

6.3: (Ever told) you had a stroke?
1 Yes
2 No

6.4: (Ever told) you had asthma?
1 Yes
2 No ⇨ **Go to Q6.6**

6.5: Do you still have asthma?
1 Yes
2 No

6.6: (Ever told) you had skin cancer?
1 Yes
2 No

6.7: (Ever told) you had any other types of cancer?
1 Yes
2 No

6.8: (Ever told) you have Chronic Obstructive Pulmonary Disease or COPD, emphysema or chronic bronchitis?
1 Yes
2 No

6.9 (Ever told) you have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia?
1 Yes
2 No
INTERVIEWER NOTE: Arthritis diagnoses include:
- rheumatism, polymyalgia rheumatica
- 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)

6.10: (Ever told) you have a depressive disorder, including depression, major depression, dysthymia, or minor depression?
1 Yes
2 No

6.11: (Ever told) you have kidney disease? Do NOT include kidney stones, bladder infection or incontinence.
INTERVIEWER NOTE: Incontinence is not being able to control urine flow.
1 Yes
2 No

6.12: (ever told) you have diabetes?
(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

CATI NOTE: If Q6.12 = 1 (Yes), go to next question. If any other response to Q6.12, go to Pre-Diabetes Optional Module.
6.13: How old were you when you were told you have diabetes?
__ __ Code age in years [97 = 97 and older]

Module 1: Pre-Diabetes
NOTE: Only asked of those not responding "Yes" (code=1) to Core Q6.12 (Diabetes awareness question).
1. Have you had a test for high blood sugar or diabetes within the past three years?
1 Yes
2 No

CATI note: If Core Q6.12 = 4 (No, pre-diabetes or borderline diabetes); answer Q2 "Yes" (code = 1).
2. Have you ever been told by a doctor or other health professional that you have pre-diabetes or borderline diabetes?

If "Yes" and respondent is female, ask: "Was this only when you were pregnant?"
1. Yes
2. Yes, during pregnancy
3. No

Section 7: Oral Health
7.1: How long has it been since you last visited a dentist or a dental clinic? Include visits to dental specialists, such as orthodontists.
1 Within the past year (any time 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
8 Never

7.2: How many of your permanent teeth have been removed because of tooth decay or gum disease? Do not include teeth lost for other reasons, such as injury or orthodontics.
NOTE: If wisdom teeth are removed because of tooth decay or gum disease, they should be included in the count for lost teeth.
1 1 to 5
1 6 or more but not all
2 All
8 None

Section 8: Demographics
8.1: Are you …
1 Male
2 Female

8.2: What is your age?
__ __ Code age in years

8.3: Are you Hispanic Latino/a, or Spanish origin?
If yes, ask: 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
5 No, not of Hispanic, Latino/a, or Spanish origin

8.4: Which one or more of the following would you say is your race?
Interviewer Note: Select all that apply.
Interviewer Note: If 40 (Asian) or 50 (Pacific Islander) is selected read and code subcategories underneath major heading.
10 White
20 Black or African American
30 American Indian, 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

60 Other [specify]

88 No additional choices

CATI note: If more than one response to Q8.4, continue. Otherwise, go to Q8.6.

8.5: Which one of these groups would you say best represents your race?

Interviewer Note: If 40 (Asian) or 50 (Pacific Islander) is selected read and code subcategory underneath major heading.

10 White
20 Black or African American
30 American Indian, 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

60 Other [specify]

8.6: Are you...?
1 Married
2 Divorced
3 Widowed
4 Separated
5 Never married or
6 A member of an unmarried couple

8.7: What is the highest grade or year of school you completed?
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)

8.8: Do you own or rent your home?
1 Own
2 Rent
3 Other arrangement

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.

INTERVIEWER NOTE: We ask this question in order to compare health indicators among people with different housing situations.

8.9: In what county do you live?
__ __ __ ANSI County Code (formerly FIPS county code)

8.10: What is the ZIP Code where you currently live?
_ _ _ _ _ ZIP Code

CATI NOTE: If cellular telephone interview skip to 8.14

8.11: Do you have more than one telephone number in your household?

Do not include cell phones or numbers that are only used by a computer or fax machine.
1 Yes
2 No ⇨ Go to Q8.13

8.12: How many of these are residential numbers?
__   Residential telephone numbers [6=6 or more]

8.13: Do you have a cell phone for personal use? Please include cell phones used for both business and personal use.
1 Yes
2 No

8.14: 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? 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

8.15: Are you currently:
1 Employed for wages
2 Self-employed
3 Out of work for more than 1 year
4 Out of work for less than 1 year
5 A Homemaker
6 A Student
7 Retired or
8 Unable to work

SAEMP1   Which of the following best reflects your current or most recent employment status?
1 Full-time employee (work 40 hours each week)
2 Part-time employee (work less than 40 hours each week)
3 Seasonal employee (farming, construction, or sales during specific times of year)
4 Contractual employee (work for businesses or companies on contract)
[INTERVIEWER NOTE: A contractual employee works only on a specific contracted task; writing a piece of software, or construction. This is not ongoing work, but temporary.

8.16: How many children less than 18 years of age live in your household?
_ _ Number of children
8 8 None

8.17: Is your annual household income from all sources:
01 Less than $10,000
02 $10,000 to less than $15,000
03 $15,000 to less than $20,000
04 $20,000 to less than $25,000
05 $25,000 to less than $35,000
06 $35,000 to less than $50,000
07 $50,000 to less than $75,000
08 $75,000 or more

8.18: Have you used the internet in the past 30 days?
1 Yes
2 No

8.19: About how much do you weigh without shoes?
If respondent answers in metric, put "9" in the first position, Round fractions up
__ __ __ Weight pounds/kilograms

8.20: About how tall are you without shoes?
If respondent answers in metric, put "9" in the first position, Round fractions down
__/__ __ Height ft./inches/meters/centimeters

If male, go to Module 25: Q1, if female respondent is 45 years old or older, go to Module 25: Q1
8.21: To your knowledge, are you now
pregnant?
1 Yes
2 No

Module 25: Disability
The following questions are about health problems or impairments you may have.
1: Are you limited in any way in any activities because of physical, mental, or emotional problems?
1 Yes
2 No

2: Do you now have any health problem that requires you to use special equipment, such as a cane, a wheelchair, a special bed, or a special telephone?
Include occasional use or use in certain circumstances
1 Yes
2 No

Some people who are deaf or have serious difficulty hearing **may or may not** use equipment to communicate by phone.
8.22: Are you deaf or do you have serious difficulty hearing?
1 Yes
2 No

8.23: Are you blind or do you have serious difficulty seeing, even when wearing glasses? (182)
1 Yes
2 No

8.24: Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions?
1 Yes
2 No

8.25: Do you have serious difficulty walking or climbing stairs?
1 Yes
2 No

8.26: Do you have difficulty dressing or bathing?
1 Yes
2 No

8.27: Because of a physical, mental, or emotional condition, do you have difficulty doing errands alone such as visiting a doctor's office or shopping?)
1 Yes
2 No

Section 9: Tobacco Use
9.1: Have you smoked at least 100 cigarettes in your entire life?
        5 packs = 100 cigarettes
1 Yes
2 No ⇨ Go to Q9.5

9.2: Do you now smoke cigarettes every day, some days, or not at all?
1 Every day
2 Some days
3 Not at all ⇨ Go to Q9.4

9.3: During the past 12 months, have you stopped smoking for one day or longer because you were trying to quit smoking?
1 Yes   ⇨ Go to Q9.5
2 No   ⇨ Go to Q9.5

9.4: How long has it been since you last smoked cigarettes regularly?
0 1 Within the past month (less than 1 month ago)
0 2 Within the past 3 months (1 month but less than 3 months ago)
0 3 Within the past 6 months (3 months but less than 6 months ago)
0 4 Within the past year (6 months but less than 1 year ago)
0 5 Within the past 5 years (1 year but less than 5 years ago)
0 6 Within the past 10 years (5 years but less than 10 years ago)
0 7 10 years or more
0 8 Never smoked regularly

9.5: Do you currently use chewing tobacco or snuff, or snus every day, some days, or not at all?
NOTE: Snus (Swedish for snuff) is a moist smokeless tobacco, usually sold in small pouches that are placed under the lip against the gum. Snus (rhymes with 'goose'
1 Every day
2 Some days
3 Not at all

Section 10: E-Cigarettes
Read if necessary: Electronic cigarettes (e-cigarettes) and other electronic "vaping" products include electronic hookahs (e-hookahs), vape pens, e-cigars, and others. These products are battery-powered and usually contain nicotine and flavors such as fruit, mint, or candy.
10.1: 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 section]**

10.2:   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

Section 11: Alcohol Consumption

11.1: During the past 30 days, how many days per week or per month did you have at least 1 drink of any alcoholic beverage such as beer, wine, a malt beverage or liquor?

1 __ __ Days per week
2 __ __ Days in past 30
8 8 8 No drinks in past 30 days   **Go to next section**

11.2: 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?

NOTE: A 40 ounce beer would count as 3 drinks, or a cocktail drink with 2 shots would count as 2 drinks
__ __ Number of drinks

11.3: Considering all types of alcoholic beverages, how many times during the past 30 days did you have **X [X = 5 for men, X = 4 for women]** or more drinks on one occasion?
__ __ Number of times
8 8 None

11.4: During the past 30 days, what is the largest number of drinks you had on any occasion?
_ _ Number

Section 12: Immunization

Now I will ask you questions about seasonal flu vaccine. There are two ways to get the seasonal flu vaccine, one is a shot in the arm and the other is a spray, mist, or drop in the nose called FluMist™.

12.1: During the past 12 months, have you had either a seasonal flu shot or a seasonal flu vaccine that was sprayed in your nose?

READ 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 Q12.3**

12.2: During what month and year did you receive your most recent flu shot injected into your arm or flu vaccine that was sprayed in your nose?
_ _/_ _ _ _ Month/Year

12.3: A pneumonia shot or pneumococcal vaccine is usually given only once or twice in a person's lifetime and is different from the flu shot. Have you ever had a pneumonia shot?

1 Yes
2 No

12.4: Since 2005, have you had a tetanus shot?
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 since 2005

Section 13: Falls
If respondent is 45 years or older continue, otherwise go to next section.

The next questions ask about recent falls. By a fall, we mean when a person unintentionally comes to rest on the ground or another lower level.

13.1: In the past 12 months, how many times have you fallen?
_ _ Number of times [76 = 76 or more]
8 8 None   **[Go to next section]**

13.2: [Fill in "Did this fall (from Q13.1) cause an injury?"]. If **only one fall from Q13.1 and response is "Yes" (caused an injury); code 01. If response is "No", code 88.**
How many of these falls caused an injury? By an injury, we mean the fall caused you to limit your regular activities for at least a day or to go see a doctor.
_ _ Number of falls   [76 = 76 or more]
8 8 None

Section 14: Seatbelt Use
14.1: How often do you use seat belts when you drive or ride in a car? Would you say…
1 Always
2 Nearly always
3 Sometimes
4 Seldom
5 Never
8 Never drive or ride in a car

Section 15: Drinking and driving
CATI note: If Q14.1 = 8 (Never drive or ride in a car), go to Section 16, otherwise continue.
CATI note: If Q11.1 = 888 (No drinks in the past 30 days); go to next section.
The next question is about drinking and driving.
15.1: During the past 30 days, how many times have you driven when you've had perhaps too much to drink?
_ _ Number of times
8 8 None

Section 16: Breast /Cervical Cancer Screening
CATI Note: If respondent is male, go to the next section.
The next questions are about breast and cervical cancer.
16.1: A mammogram is an x-ray of each breast to look for breast cancer. Have you ever had a mammogram?
1 Yes
2 No **Go to Q15.3**

16.2: How long has it been since you had your last mammogram?
1 Within the past year (any time less than 12 months ago)
2 Within the past 2 years (1 year but less than 2 years ago)
3 Within the past 3 years (2 years but less than 3 years ago)
4 Within the past 5 years (3 years but less 5 years ago)
5 5 or more years ago

16.3: A Pap test is a test for cancer of the cervix. Have you ever had a Pap test?
1Yes
2 No **Go to Q16.5**

16.4: How long has it been since you had your last Pap test?
1 Within the past year (any time less than 12 months ago)
2 Within the past 2 years (1 year but less than 2 years ago)
3 Within the past 3 years (2 years but less than 3 years ago)
4 Within the past 5 years (3 years but less than 5 years ago)
5 5 or more years ago

Now, I would like to ask you about the Human Papillomavirus (Pap·uh·loh·muh virus) or HPV test.

16.5: An HPV test is sometimes given with the Pap test for cervical cancer screening. Have you ever had an HPV test?
1 Yes
2 No   [Go to Q16.7]

16.6: How long has it been since you had your last HPV test?
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 3 years (2 years but less than 3 years ago)
4 Within the past 5 years (3 years but less than 5 years ago)
5 5 or more years ago

CATI NOTE: If response to core Q8.21 = 1 (is pregnant) then go to next section.
16.7: Have you had a hysterectomy?

A hysterectomy is an operation to remove the uterus (womb)
1 Yes
2 No

Section 17: Prostate Cancer Screening
CATI Note: If respondent is <39 years of age, or is female, go to next section.
Now, I will ask you some questions about prostate cancer screening.
17.1: A Prostate-Specific Antigen test, also called a PSA test, is a blood test used to check men for prostate cancer. Has a doctor, nurse, or other health professional EVER talked with you about the advantages of the PSA test?
1 Yes
2 No

17.2: Has a doctor, nurse, or other health professional EVER talked with you about the disadvantages of the PSA test?
1 Yes
2 No

17.3: Has a doctor, nurse, or other health professional EVER recommended that you have a PSA test?
1 Yes
2 No

17.4: Have you ever had a PSA test?
1 Yes
2 No   [Go to next section]

17.5: How long has it been since you had your last PSA test?
1 Within the past year (any time less than 12 months ago)
2 Within the past 2 years (1 year but less than 2 years)
3 Within the past 3 years (2 years but less than 3 years)
4 Within the past 5 years (3 years but less than 5 years)
5 5 or more years ago

17.6: What was the MAIN reason you had this PSA test – was it?
1 Part of a routine exam
2 Because of a prostate problem
3 Because of a family history of prostate cancer
4 Because you were told you had prostate cancer
5 Some other reason

Section 18: Colorectal Cancer Screening
CATI Note: If respondent is < 49 years of age, go to next section
18.1: A blood stool test is a test that may use a special kit at home to determine whether the stool contains blood.
Have you ever had this test using a home kit?
1 Yes
2 No   Go to Q18.3.

18.2: How long has it been since you had your last blood stool test using a home kit?
1 Within the past year (any time 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

18.3: Sigmoidoscopy and colonoscopy are exams in which a tube is inserted in the rectum to view the colon for signs of cancer or other health problems. Have you ever had either of these exams?
1 Yes
2 No Go to next section.

18.4: For a SIGMOIDOSCOPY, a flexible tube is inserted into the rectum to look for problems. A COLONOSCOPY is similar, but uses a longer tube, and you are usually given medication through a needle in your arm to make you sleepy and told to have someone else drive you home after the test. Was your MOST RECENT exam a sigmoidoscopy or a colonoscopy?
1 Sigmoidoscopy
2 Colonoscopy

18.5: How long has it been since you had your last sigmoidoscopy or colonoscopy?
1 Within the past year (any time less than 12 months ago)
2 Within the past 2 years (1 year but less than 2 years ago)
3 Within the past 3 years (2 years but less than 3 years ago)
4 Within the past 5 years (2 years but less than 5 years ago)
5 Within the past 10 years (5 years but less than10 years ago)
6 10 or more years ago

Section 19: HIV/AIDS
The next few questions are about the national health problem of HIV, 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 don't want to. Although we will ask you about testing, we will not ask you about the results of any test you may have had.
19.1: Have you ever been tested for HIV? Do not count tests you may have had as part of a blood donation.
Include tests using fluid from your mouth.
1 Yes
2 No ➡ Go to Q19.3

19.2: Not including blood donations, in what month and year was your last HIV test?

Note: If response is before January 1985, code "Don't know".
CATI INSTRUCTION: 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.
__ __/__ __ __ __   Code month and year

19.3: 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.   (234)

You have used intravenous drugs in the past year.

You have been treated for a sexually transmitted or venereal disease 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

Module 5: Health Literacy

1. How difficult is it for you to get advice or information about health or medical topics if you need it? Would you say it is…

1 Very easy
2 Somewhat easy
3 Somewhat difficult
4 Very difficult
5 I don't look for health information

INTERVIEWER NOTE: Respondent can answer based on any source of health or medical advice or information. If the respondent asks what is meant by advice or information, interviewer re-reads the question to the respondent. If the respondent still doesn't understand, interviewer can say, "You can think about any source of health or medical advice or information."

2. How difficult is it for you to understand information that doctors, nurses and other health professionals tell you? Would you say it is…

1 Very easy
2 Somewhat easy
3 Somewhat difficult
4 Very difficult

3. You can find written information about health on the Internet, in newspapers and magazines, and in brochures in the doctor's office and clinic. In general, how difficult is it for you to understand written health information? Would you say it is…

1 Very easy
2 Somewhat easy
3 Somewhat difficult
4 Very difficult
5 I don't pay attention to written health information

Module 8: Sugar Sweetened Beverages

Now I would like to ask you some questions about sugary beverages.

1. 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.

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
8 8 8 None

2. During the past 30 days, how often did you drink sweetened fruit drinks (such as Kool-aid, cranberry juice cocktail, and lemonade, sweet tea, and sports or energy drinks (such as Gatorade and Red Bull)? Do not include 100% fruit juice, diet drinks, or artificially sweetened drinks.   .

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
8 8 8 None

State Added Nutrition

1. How often do you use low-fat or fat-free dairy products such as milk, yogurt, or cheese to cook with or eat directly? Would you say…

1 Less than 1/week
2 Once a week
3 2-3 times a week
4 4-6 times a week
5 Once a day

Module 21: Sexual Orientation and Gender Identity

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.

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

1. Do you consider yourself to be one, Straight; two, Lesbian or gay; three, Bisexual?

1 - Straight
2 - Lesbian or gay
3 - Bisexual
4 Other

2. Do you consider yourself to be transgender?

If yes, ask "Do you consider yourself to be one, male-to-female; two, female-to-male; or three, gender non-conforming?"

1 Yes, Transgender, male-to-female
2 Yes, Transgender, female-to-male
3 Yes, Transgender, gender non-conforming
4 No

INTERVIEWER NOTE: If asked about definition of transgender:

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 transgendered. 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 asked about definition of gender non-conforming:

Some people think of themselves as gender non-conforming when they do not identify only as a man or only as a woman.

State Added Colorectal Cancer Screening
[ASK IF AGE > 49]
1. Next, I would like to ask you some additional questions about colorectal cancer screening.
Has a health care provider ever talked to you about being tested for colorectal or colon cancer?
1 Yes
2 No ➡ Go to Next module

2. What test did your health care provider recommend?
1 Blood Stool Kit
2 Sigmoidoscopy or colonoscopy (exams in which a tube is inserted in the rectum to view the colon for signs of cancer or other health problems)
3 Other test
4 Did not recommend a test ➡Go to next module.
5 Recommended both Blood Stool Kit and sigmoidoscopy or Colonoscopy

3. Did you have the test [if Q2 = 5, tests] your health care provider recommended?
1 Yes
2 No

State Added Neighborhood Physical Activity (
1. 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

2. Does your neighborhood have any sidewalks?
1 Yes
2 No

3. 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

4. Do you use walking trails, parks, playgrounds, or sports fields in your community for physical activity?
1 Yes
2 No
3 My community does not have these facilities

State Added Tobacco Use
[Ask if Q9.2 = 1 or 2 & Q9.1 = 1]
1. 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,
4 Rarely, or
5 Never?

[For Everyone]
2. Do you now smoke cigars, cigarillos, or little filtered cigars every day, some days, rarely or not at all?
1 Every day
2 Some days

3 Rarely
4 Not at all

3. Do you now smoke a regular pipe filled with tobacco every day, some days, rarely or not at all?
1 Every day
2 Some days
3 Rarely
4 Not at all

4. 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 Q6]

5. Do you now smoke tobacco in a water pipe or hookah every day, some days, rarely or not at all?
1 Every day
2 Some days
3 Rarely
4 Not at all

6. If you have ever smoked part or all of a cigarette, even just one time in your entire life, how old were you?
_ _ _ AGE IN YEARS
888 Never

[SKIP IF Q10.1 > 1]
7. How old were you the first time you smoked an e-cigarette, even one or two puffs?
_ _ _ AGE IN YEARS

Quit lines are telephone or internet/web-based services that help people quit smoking or quit tobacco use.
8. Have you ever heard of Quitline Iowa?
1 Yes
2 No

[SKIP if Q9.3 = 1]
9. During the past 12 months, have you made a serious attempt to stop smoking cigarettes because you were TRYING to quit – even if you stopped for less than a day?
1 Yes
2 No

[ASK IF Q9.5 = 1 or 2 OR Q2 = 1 or 2 OR Q3 = 1 or 2 OR Q5 = 1 or 2]
10. During the past 12 months, have you made a serious attempt to stop using smokeless tobacco, cigars or pipe tobacco because you were TRYING to quit – even if you stopped for less than a day?
1 Yes
2 No

[ASK IF Q9.3 = 1 OR Q9.4 < 5 OR Q9 = 1 OR Q10 = 1]
11. 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

[ASK IF Q11H = 1]

12. 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

[ASK IF Q10.2 = 1 or 2, ELSE GO TO Q14]

13. The next question is about the reasons people use e-cigarettes. Please tell me which reasons apply to you.

[INTERVIEWER NOTE: Say about E-cigarettes if required: You may also know them as vape pens, hookah-pens, e-hookahs, e-vaporizers, e-cigars, or e-pipes]

a I can use e-cigarettes at times or in places where smoking cigarettes isn't allowed.

b They might be less harmful to me than cigarettes.

c They might be less harmful to people around me than cigarettes.

d Using e-cigarettes helps people to quit smoking cigarettes.

e They seem cheaper than cigarettes.

1 Yes

2 No

[ASK IF Q10.1 = 2 AND AGE = 18-34 YEARS, ELSE GO TO Q15]

14. The next question is about the reasons people use e-cigarettes. Which of the following statements do you think applies to people who use e-cigarettes?

[INTERVIEWER NOTE: Say about E-cigarettes if required: You may also know them as vape pens, hookah-pens, e-hookahs, e-vaporizers, e-cigars, or e-pipes]

a Someone can use e-cigarettes at times or in places where smoking cigarettes isn't   allowed.

b They might be less harmful to someone than cigarettes.

c E-cigarettes might be less harmful to people around a user than cigarettes.

d Using e-cigarettes helps people to quit smoking cigarettes.

e They seem cheaper than cigarettes.

1 Yes

2 No

[Skip to Q16 if Q3.4 = 1]

15. 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

[ASK IF Q9.2 = 1 or 2 OR Q9.4 < 5 OR Q9.5 = 1 or 2 OR Q2 = 1 or 2 OR Q3 = 1 or 2 OR Q5 = 1 or 2]

16. In the PAST 12 MONTHS, when you visited your health care provider, did they…

a Advise you to stop smoking or using tobacco?

b Suggest that you call or use a telephone or web-based quit line?

c Suggest that you use a smoking or tobacco use cessation class, program, or counseling?

d Recommend or prescribe a medicine to help you quit?

e Suggest that you set a specific date to stop smoking or using tobacco?

f Suggest that you stop cold turkey?

1 Yes

2 No

[(ASK IF Q9.2 = 1 or 2 OR Q9.4 < 5 OR Q9.5 = 1 or 2 OR Q2 = 1 or 2 OR Q3 = 1 or 2 OR Q5 = 1 or 2) AND Q7.1=1]

17. In the PAST 12 MONTHS, when you visited your dentist or dental hygienist, did they…

advise you to stop smoking or using tobacco?

b Suggest that you call or use a telephone or web-based quit line?

c Suggest that you use a smoking or tobacco use cessation class, program, or counseling?

d Recommend or prescribe a medicine to help you quit?

e Suggest that you set a specific date to stop smoking or using tobacco?

f Suggest that you stop cold turkey?

1 Yes

2 No

18. 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

19. Not counting decks, porches, or garages, inside your home, is smoking …

[INTERVIEWER NOTE: The order of the response categories for this question is being randomly reversed.]

1 Always Allowed

2 Allowed only at some times or in some places, or

3 Never allowed

6 Family does not have a smoking policy

20. Should all tobacco use at parks be …

[INTERVIEWER NOTE: The order of the response categories for this question is being randomly reversed.]

1 Always allowed

2 Allowed only at some times or in some places

3 Never allowed

State Added Physical and Emotional Neglect

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. Now, looking back before you were 18 years of age, how true were each of the following statements:

1. You knew there was someone to take care of you and protect you. Was this never true, rarely true, often true, or very often true?
1 never true,
2 rarely true,
3 often true, or
4 very often true?

2. Your parents were too drunk or high to take care of the family. Was this never true, rarely true, often true, or very often true?
1 never true,
2 rarely true,
3 often true, or
4 very often true?

3. There was someone in your family who helped you feel important or special. Was this never true, rarely true, often true, or very often true?
1 never true,
2 rarely true,
3 often true, or
4 very often true?

4. You felt loved? Was this never true, rarely true, often true, or very often true?
1 never true,
2 rarely true,
3 often true, or
4 very often true?

5. There was someone to take you to the doctor if you needed it. Was this never true, rarely true, often true, or very often true?
1 never true,
2 rarely true,
3 often true, or
4 very often true?

6. Your family was a source of strength and support. Was this never true, rarely true, often true, or very often true?
1 never true,
2 rarely true,
3 often true, or
4 very often true?

State Added: Resiliency
The next questions also refer to the time before you were eighteen years of age.
1. 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
Note: (If respondent attended multiple high schools, ask respondent to respond about the high schools in general.)

2. How often did you feel supported by your friends? Would you say...
1 Never,
2 Rarely,
3 Sometimes,
4 Often, or
5 Very often?
Note: (If respondent says some friends did/didn't, ask respondent to answer about friends in general.)

3. 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?

4. 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?

5. 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?
Note: If respondent asks what we mean by "community" or "traditions", say "whatever it means to you.

6. 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?
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 Adverse Childhood Experience
Again, we are still talking about before you were 18 years of age.
1. Did you ever live with anyone who was depressed, mentally ill, or suicidal?
1 Yes
2 No

2. Did you live with anyone who was a problem drinker or alcoholic?
1 Yes
2 No

3. Did you live with anyone who used illegal street drugs or who abused prescription medications?
1 Yes
2 No

4. 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

5. Were your parents separated or divorced?
1 Yes
2 No
8 Parents not married

6. How often did your parents or adults in your home ever slap, hit, kick, punch or beat each other up?
1 Never
2 Once
3 More than once

7. Before age 18, how often did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way? Do not include spanking. Would you say---
1 Never
2 Once
3 More than once

8. How often did a parent or adult in your home ever swear at you, insult you, or put you down?
1 Never
2 Once
3 More than once

9. How often did anyone at least 5 years older than you or an adult ever touch you sexually?
1 Never
2 Once
3 More than once

10. How often did anyone at least 5 years older than you or an adult, try to make you touch them sexually?
1 Never
2 Once
3 More than once

11. How often did anyone at least 5 years older than you or an adult, force you to have sex?
1 Never
2 Once
3 More than once

State Added Gambling
1. Have you gambled or bet for money or possessions in the past 12 months?
1 Yes
2 No   **[SKIP TO close]**

2. 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

3. During the past 12 months, have you tried to keep your family or friends from knowing how much you gamble?
1 Yes
2 No

4. 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

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