

2001 FINAL REPORT

Survey Results From the 1999 Behavioral Risk Factor Surveillance System



Iowa Department of Public Health

State Center for Health Statistics

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INTRODUCTION

Morbidity and mortality data have been recorded by health departments for quite some time. However, before 1981, there was no ongoing attempt to monitor behaviors associated with premature death and disability. In 1981, the Centers for Disease Control and Prevention (CDC) began assisting states in conducting such a risk factor survey.

Following point-in-time surveys in 1982 and 1988, Iowa began full participation in **CDC's Behavioral Risk Factor Surveillance System (BRFSS)**. The Iowa Behavioral Risk Factor Surveillance System is an ongoing telephone survey. It is financially and technically supported by the CDC.

The BRFSS is designed to collect information on the health-risk behaviors of residents over the age of 18. It also monitors the prevalence of these behaviors over time. The risk factors surveyed are major contributors to illness, disability, and premature death.

The BRFSS information is used to design, implement, and support public health activities, designed to reduce the premature death and disability of Iowa residents. Comparable surveillance methods are used in other states. This allows for comparisons among states and for the assessment of geographic patterns of risk-factor prevalence.

The survey consists of three parts: Core questions, optional modules, and state-added questions. All states that conduct the BRFSS survey must administer the core questionnaire developed by CDC. It contains questions asked annually and biannually. CDC also develops optional module questions, which can be selected by states. Many states, including Iowa, also administer their own state-added questions to provide more detailed information about specific issues of interest to the state. These are usually topics that are not covered in other parts of the survey.

This report focuses on the data collected during calendar year 1999. The risk factors discussed are health-care coverage, health status, cigarette smoking, alcohol consumption, body weight, hypertension and cholesterol awareness, women's health issues (including screening for breast and cervical cancer), diabetes, immunization, colorectal cancer screening, dental health, and HIV/AIDS awareness and behaviors.

Approximately 300 telephone interviews were conducted each month from January through December for a total minimum sample size of 3,600. Telephone numbers were randomly generated by CDC.

Data were weighted to Iowa's population by age and gender. This provides estimates of risk-factor prevalence among adults ages 18 and older. Iowa's population estimates were derived from the most currently available census data.

Standard telephone survey procedures were used. Interviews were conducted throughout the calendar year to ensure that data were seasonally adjusted.



GOALS AND OBJECTIVES OF THE BRFSS

State public health departments are responsible for planning, implementing, and evaluating disease prevention programs. Many of these programs deal with health-risk behavior modification. Examples of health-risk behavior modification programs in Iowa are:

- Seatbelt legislation
- The Clean Indoor Air Act
- Healthy baby campaigns
- Drinking and driving campaigns

One way to assess program effectiveness is to monitor the prevalence of risk factors in the population. The CDC developed the BRFSS to help states assess health risks and monitor trends.

National Goal

To provide data to initiate and guide health promotion and disease prevention.

National Objectives

1. To determine state specific prevalences 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.

METHODOLOGY

Questionnaire Design

CDC and BRFSS state representatives evaluate and modify the BRFSS questionnaire each year. Discussion of previously telephone-tested questions and current BRFSS questions occurs at the annual BRFSS conference.

Participants are also requested to provide demographic information on age, sex, race, marital and employment status, household income, and educational level. Participation is random, anonymous, voluntary, and confidential.

Sampling Process

In 1999, households were selected randomly using 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.

The DSS method establishes groups of 100 numbers and divides these groups into two strata based on whether the first call is residential. If it is, this strata is sampled at a much higher rate than if it is not. There is no set number to be sampled per group, and completed interviews are not thrown out.

Approximately 300 interviews are conducted per month. Interviewers make many attempts to reach a number to complete an interview before replacing that number.

One person, 18 years or older and currently residing in the home, is randomly selected to answer the survey. If the person selected is not available, an appointment is made to complete the interview at another date and time. If the person is not available during the interview period, or if the person refuses to participate, no other member of that household is interviewed.

The Interview Process

The interviews were conducted during the day, evenings, and weekends with appointments made as needed to schedule or complete interviews. The phone calls started the second Wednesday of each month and continued for seven days or until the necessary interviews were completed. The average time to complete an interview was 19.8 minutes.

A Computer Aided Telephone Interviewing (CATI) system was adopted. A computer program (CI3) was used in conjunction with the CATI system to automate the process of data collection.

Data then were edited for accuracy and completeness using the software (PC-Edit) provided by CDC. After editing, monthly data were submitted to the CDC.

Advantages and Limitations

Telephone interviews provide a means to conduct affordable surveys to monitor the prevalence of behavioral risk factors. Telephone interview surveys 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 might be required and few interviews completed.

Telephone surveys also have a much higher response rate than self-administered surveys conducted by the mail.

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.

Telephone surveys have one main limitation. Because only about 97 percent of all Iowa households have telephones, approximately three percent of the population cannot be reached. Persons of low socioeconomic status are less likely than persons of higher socioeconomic status to own telephones and are therefore under-sampled. Also, the percentage of households with a telephone varies by region.

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

Some inaccuracy is expected from any survey that is self-reported. For example, respondents are known to under-report their weight and inaccurately recall dietary habits. The potential for bias must always be kept in mind when interpreting self-reported data.

Finally, analyzing the data by such categories as age, sex, income, and educational level categories decreases the sample size of the particular group and the ability to determine statistically significant differences. Some data may not be reported as significant solely due to small samples. In data analysis, a general rule is that estimates based upon denominators less than 50 are statistically unreliable. Further, denominators less than 500 should be reported as whole percents.

In addition, some people refuse to answer select questions but choose to complete the majority of the questions. Those interviews will still be used in the final count for the total sample size though they will not be counted on the questions they refused.

DEMOGRAPHICS OF THE BRFSS

RESPONDENTS

The 3,618 respondents to the 1999 BRFSS included 1,425 males and 2,193 females age 18 years and older. The following tables present the distribution of respondents by age, gender, household income, and education.

DISTRIBUTION BY AGE AND GENDER FOR IOWA SURVEY RESPONDENTS						
AGE	MALES		FEMALES		TOTAL	
	#	%	#	%	#	%
18-24	130	9.1	173	7.9	303	8.4
25-34	243	17.1	341	15.5	584	16.1
35-44	291	20.4	430	19.6	721	19.9
45-54	260	18.2	370	16.9	630	17.4
55-64	202	14.2	261	11.9	463	12.8
65+	299	21.0	618	28.2	917	25.4
TOTAL	1,425	39.4	2,193	60.6	3,618	100.0

DISTRIBUTION BY INCOME		
INCOME	# OF TOTAL RESPONDENTS	% OF TOTAL RESPONDENTS
\$15,000	415	11.5
\$15,000-\$24,999	673	18.6
\$25,000-\$49,999	1,233	34.1
\$50,000-\$74,999	617	17.0
>=\$75,000	345	9.5
Unknown/Refused	335	9.3
TOTAL	3,618	100.0

DISTRIBUTION BY EDUCATION FOR IOWA SURVEY RESPONDENTS		
EDUCATION	# OF TOTAL RESPONDENTS	% OF TOTAL RESPONDENTS
Never Attended School	2	0.1
Elementary	133	3.1
Some High School	204	5.6
High School Grad. Or GED	1,416	39.1
Some College or Technical School	1,042	28.8
College Graduate	818	22.6
Unknown/Refused	3	0.1
TOTAL	3,618	100.0

HEALTH STATUS OF IOWANS

Background

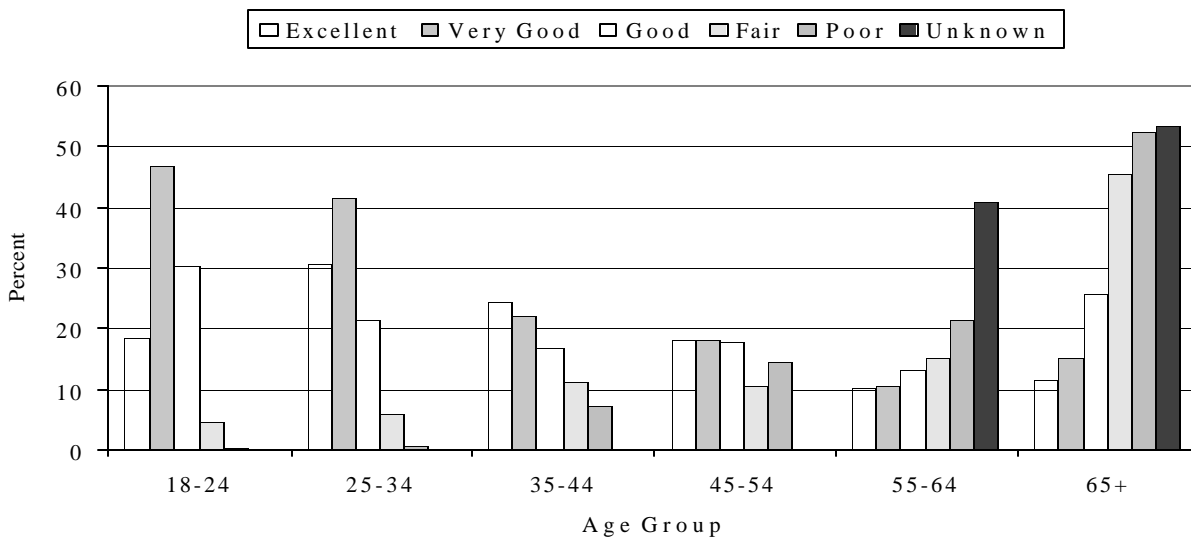
Self-ratings of health, defined by responses to a single question such as “How is your health, in general?,” are significant predictors of mortality.¹ Additional studies, which controlled for objective health status, age, sex, life satisfaction, income, residence, and other factors continue to find the risk of mortality two to six times greater for those who had reported earlier that their health was bad or poor compared to those who had reported their health was excellent.^{2,4}

Respondents reporting “fair” and “good” health also show elevated risks of mortality in a dose response fashion.³ The risk associated with poor self-rated health was actually higher than the risks associated with poor health status assessments by a physician.^{1,4}

Health Status in Iowa

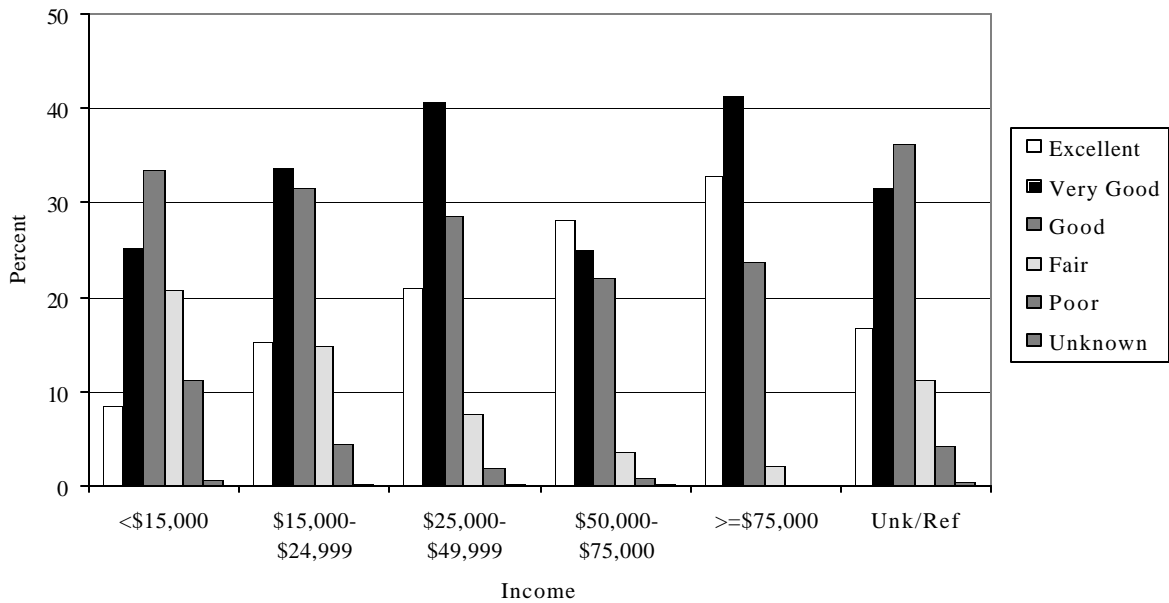
In 1999, **21.1 percent of respondents reported their health was excellent in general.** Another 38.2 percent said very good, 28.4 percent reported good health, and 12 percent rated their health as fair or poor. The percentage of males reporting their health as excellent was 21.0 compared to 21.3 for females.

Self-Reported General Health Status by Age, 1999



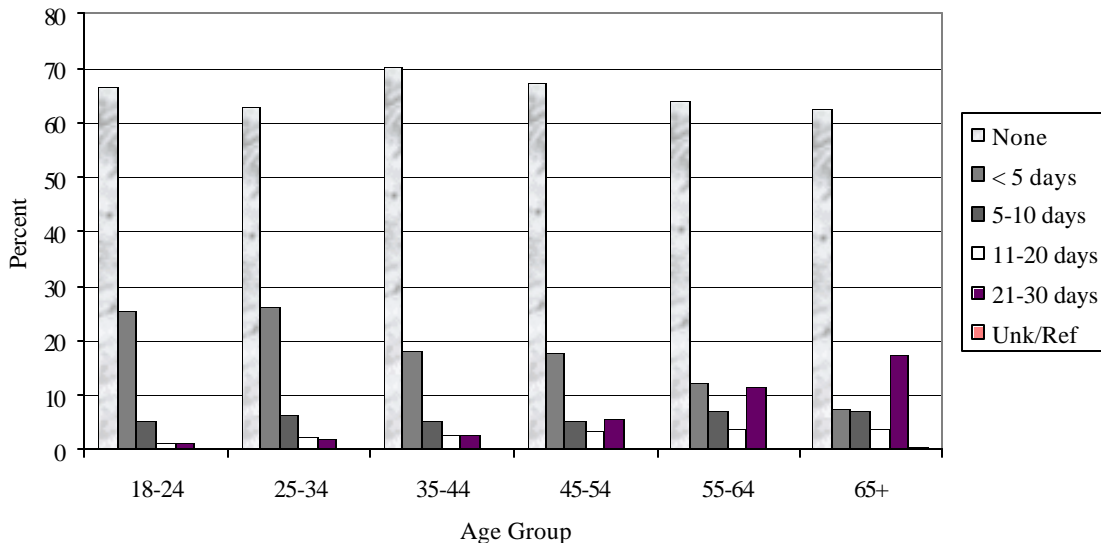
Respondents who were most likely to report having “excellent” or “very good” health included those between the ages of 25 and 44 with annual incomes between \$50,000 and \$74,999.

Self-Reported General Health by Income, 1999



In answer to the question about how many days during the past 30 days their **physical health** was not good, 65.6 percent of respondents reported none of the days. Approximately 17.6 percent reported less than five days, and 6.1 percent reported between five and ten days. Ten percent reported more than 10 days. The mean number of days when physical health was not good during the previous 30 days was 2.9 for males and 3.9 for females.

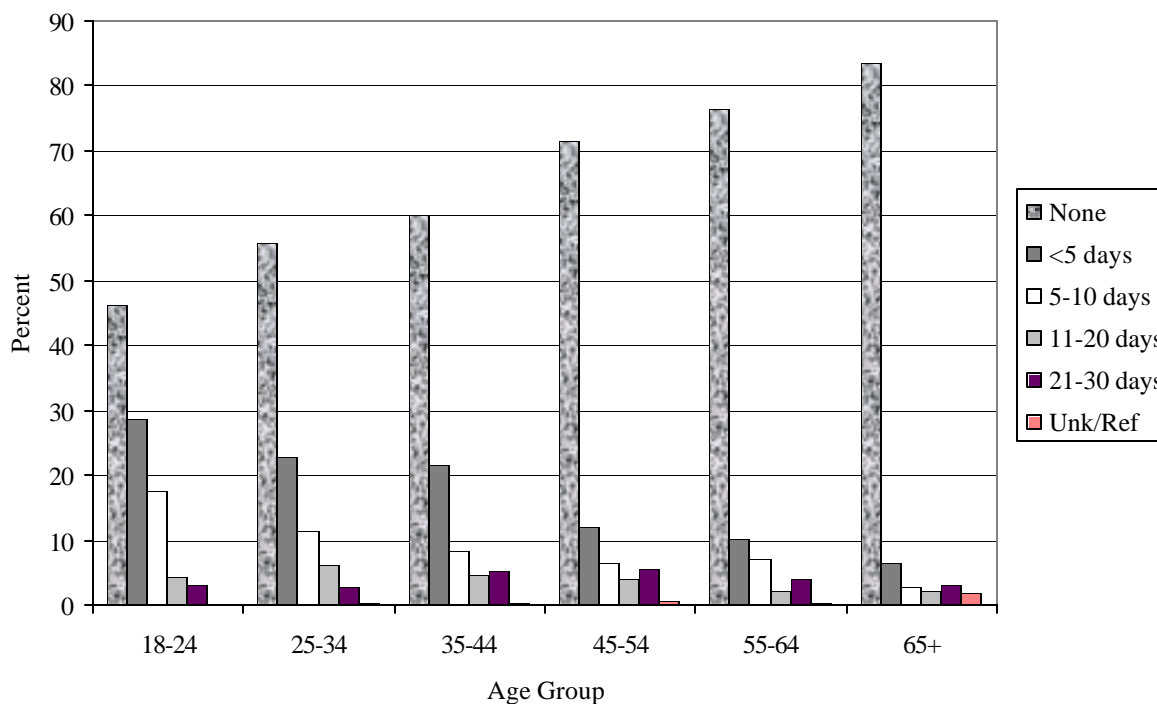
Days of Poor Physical Health by Age, 1999



When responding to the question asking how many days during the past 30 days their **mental health** was not good, 66.5 percent of the respondents indicated none of the days. Over 16 percent reported less than five days and 8.4 percent reported five to ten days. Eight percent of respondents said more than ten days.

The age group reporting the lowest percentage of respondents with no days of good mental health during the previous 30 days was that between the ages of 18 and 24 (46.3 percent). The second lowest percentage of respondents were between the ages of 25 and 34 (55.9 percent). Respondents aged 65 and older had the greatest percentage reporting no days of good mental health during the previous 30 days. The mean number of days reported by males and females was 2.4 and 3.2 days, respectively.

Number of Days Mental Health Not Good by Age, 1999



Comparison with Other States

In 1999, 37 states had higher rates than Iowa in the percentage of respondents reporting a fair or poor health status. The national median was 13.1 percent, while Iowa was 12.1 percent.

Fifteen of the 50 states plus Puerto Rico had a higher reported mean number of days respondents reported that their physical health was not good during the previous 30 days. The national average was 2.7 days, with Iowa at 2.9 days.

Thirty-one of the 50 states plus Puerto Rico had a higher mean number of reported days during the previous 30 days in which the mental health of respondents was not good. The average for the nation was 2.9, with Iowa at 2.8 days.

BIBLIOGRAPHY FOR HEALTH STATUS OF IOWANS

1. Goldstein, M., Siegel, J., Boyer, R., Predicting changes in Perceived Health Status, *American Journal of Public Health*, Vol. 74, No. 6., 1984.
2. Idler, Ellen L., Kasl, Stanislav, Lemke, Jon H., Self-Evaluated Health and Mortality among the Elderly in New Haven, Connecticut, and Iowa and Washington Counties, Iowa 1982-1986. *American Journal of Epidemiology*, 1990. The Johns Hopkins University School of Hygiene and Public Health.
3. Idler, Ellen L., Kasl, Stanislav, Health Perceptions and Survival: Do Global Evaluations of Health Status Really Predict Mortality? *Journal of Gerontology: SOCIAL SCIENCES*, Vol. 46, No. 2, S55-65. 1991.
4. Mossey, J., Shapiro, E., Self-Rated Health: A Predictor of Mortality Among the Elderly. *American Journal of Public Health*, Vol. 72, No. 8. 1982.

HEALTH INSURANCE COVERAGE AND ACCESS TO HEALTH CARE

Background

Accurate estimates of the uninsured are difficult to obtain. Much of this difficulty is due to the characteristics of the population lacking insurance. Examples include working in small companies that do not provide insurance as employee benefits, being unemployed, and lacking a permanent residence.

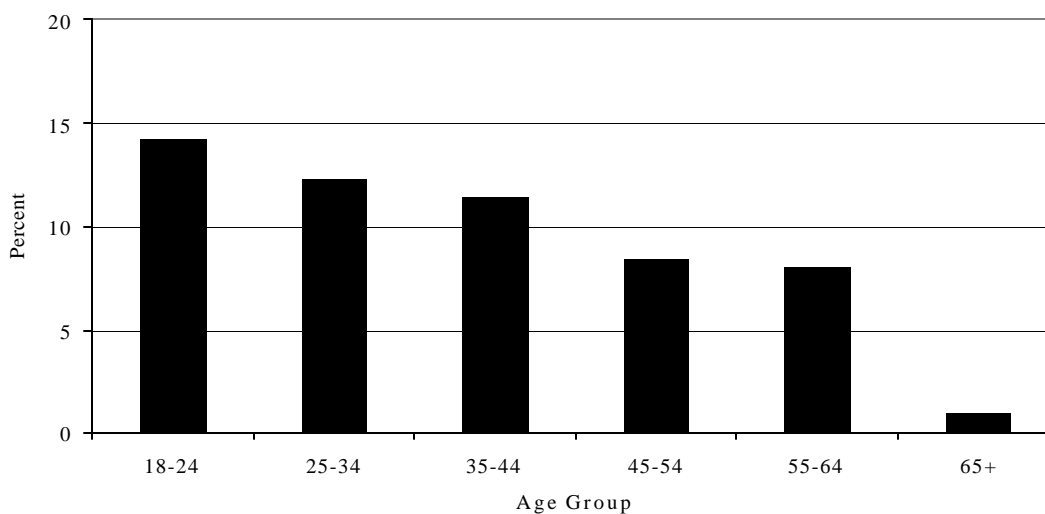
As noted in this study, the national median for individuals with no health insurance is 12.4 percent. Now, health care costs are escalating at an ever-increasing rate. This is especially true of particular costs such as pharmaceuticals. Such increases have a greater impact on people without health insurance and/or those living on fixed incomes.

Medicaid coverage of the non-elderly adult population is more common in the East, South Central, and Pacific regions of the United States than elsewhere. In addition, the percentage of the population insured through Medicaid varies considerably across the states. The Medicaid rate in New Hampshire was the lowest at 4.8 percent, while the District of Columbia had the highest percentage with Medicaid coverage (19.6 percent). Iowa had a rate of 7.2 percent of Medicaid coverage compared to 10.9 percent of the United States non-elderly population.¹

Health Coverage in Iowa

In 1999, 8.8 percent of survey respondents reported they had **no health insurance**. That includes 10 percent of males and 7.1 percent of females. Respondents between the ages of 18 and 24 had the highest percentage without health-care coverage (14.2 percent).

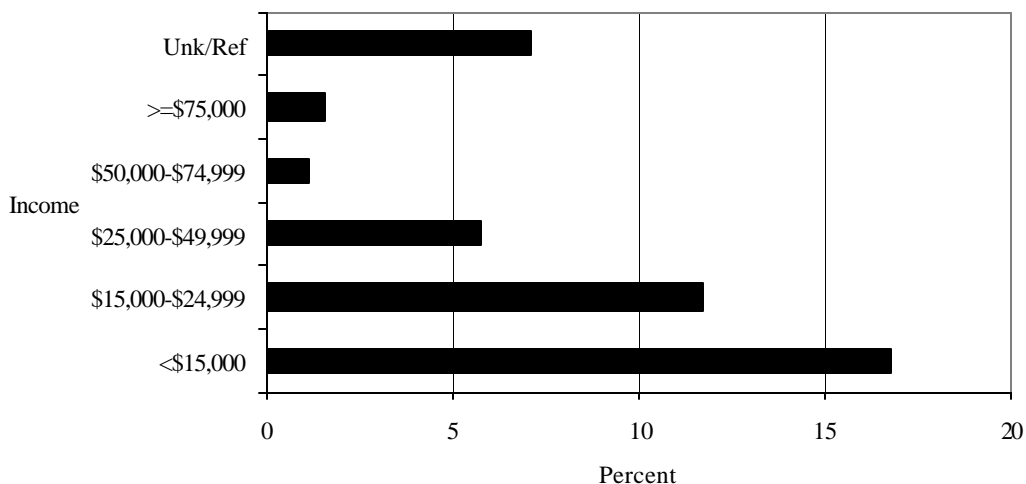
**Percentage of Iowans Without Health-Care Coverage
by Age, 1999**



Respondents who reported lower household incomes were less likely to have health insurance. A total of 18.1% of those with an annual income of less than \$15,000 reported no health insurance coverage compared to only 2.4 percent of respondents who reported an annual income of \$75,000 or more.

Of respondents who reported that they did not have health insurance coverage, high school graduates were less likely to have health insurance coverage (40 percent). Only 5.1 percent of college graduates reported not having health-care coverage.

Iowans Unable to See a Doctor by Income, 1999



The survey also asked respondents whether there were instances in which **they could not afford to see a doctor because of cost**. Of all respondents, 6.6 percent reported such instances (6.4 percent of males and 6.7 percent of females). Respondents between the ages of 25 and 34 were most likely to report not being able to afford to see a physician (12.6 percent). Respondents reporting a household income of \$15,000 or less had the highest percentage of all income groups (16.8 percent) while those reporting an income between \$50,000 and \$74,999 reported the lowest rate (1.1 percent).

Over 10 percent of respondents who reported attending some high school had been unable to see a physician because of cost, while only 4.4 percent of college graduates reported an incidence.

Sixty-seven percent of respondents reported having a **routine medical checkup** during the previous year, including 80 percent of females and 57.2 percent of males. Respondents over age 65 were most likely to report having a routine checkup in the previous 12 months (77.5 percent) compared to those between the ages of 25 and 34 were the least likely to report having a routine checkup (56.3 percent). Seventy-three percent of those reporting an income of \$75,000 or more indicated they had a routine checkup within the past year compared to only 65.2 percent for those with incomes from \$15,000 to \$49,999. Little variation was observed among educational levels. These percentages ranged from 63.9 to 68.6.

Comparison With Other States

Only four states had a lower percentage of residents without health insurance. Approximately 11 percent of Iowa's non-elderly respondents reported not having any insurance. The median percentage of uninsured nationwide was 14.5.

BIBLIOGRAPHY FOR HEALTH INSURANCE COVERAGE AND ACCESS TO HEALTH CARE

1. Winterbottom, C., Liska, D., and Obermaier, K.: *State-Level Data Book on Health Care. Access and Financing*. The Urban Institute, Washington D.C., 1995, pp. 1-9.

HEART DISEASE

Background

Heart disease has been the leading cause of death among American adults since 1920. Deaths from heart disease peaked in the mid 1960s, then began to decline. The age-adjusted mortality rate for coronary heart disease declined 42 percent between 1963 and 1985.

This resulted from such changes as better medical diagnosis and treatment, and the adoption of healthier behaviors, such as non-smoking and blood cholesterol reduction.³ In the 1990s, the decline in heart disease deaths has slowed.⁴

Reducing heart disease risk requires an integrated strategy that includes:

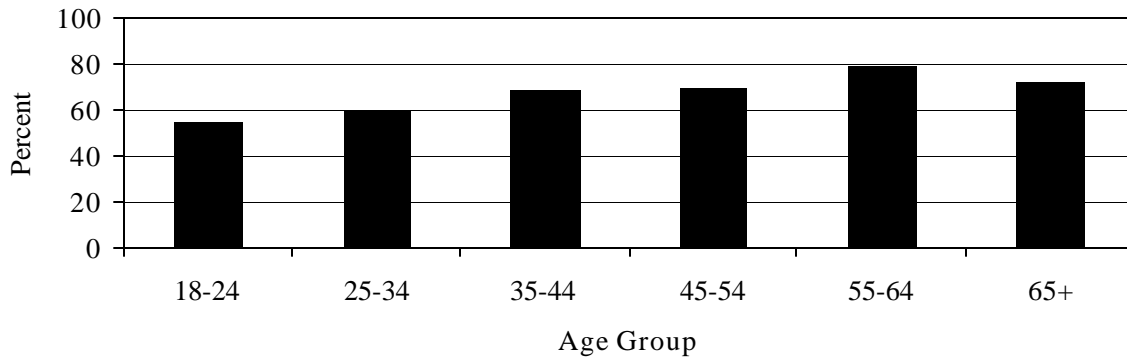
- 1) Behavior changes, including weight management; increased physical activity; no tobacco use; and a low-fat, low-cholesterol diet with moderation of sodium, sugar and alcohol.
- 2) Community environmental support, such as population screening, to identify people with high levels of blood cholesterol, blood pressure or blood glucose, and other people at risk for heart disease. Community support also includes teaching the skills necessary for a healthier life. One popular example is the establishment and upkeep of public bicycle trails.
- 3) Development of public policies that encourage healthy behaviors, such as smoke-free worksites.¹

Preventive measures can reduce heart disease risk, include taking a small daily dose of aspirin (75 milligrams per day) after age 35; initiating hormone-replacement therapy (especially estrogen therapy) at menopause; and increasing dietary folate intake to reduce homocysteine levels. All clinical approaches to cardiovascular risk reduction should be supervised by a physician.²

Heart Disease in Iowa

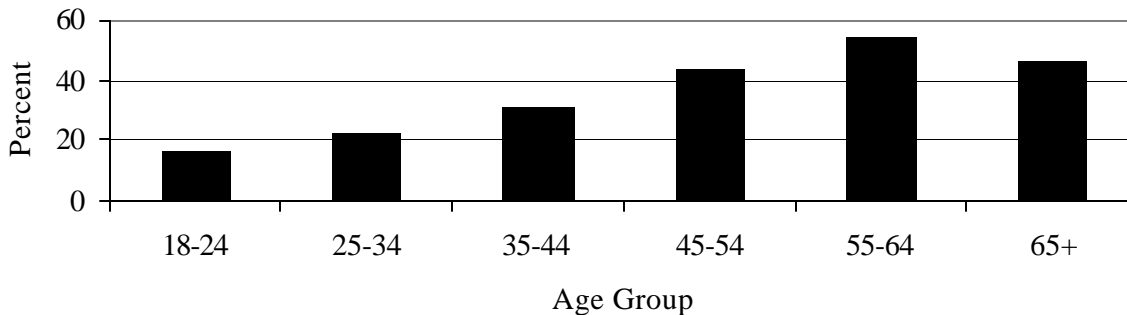
In 1999, 67.3 percent of Iowans reported **eating fewer high fat or high cholesterol foods to lower their risk of heart disease**. Estimated percentages in each age group ranged from 78.6 percent in respondents between the ages of 55 and 64 and 54.4 percent for those between 18 and 24 years. Over 74 percent of females compared to 59.6 percent of males reported eating fewer high fat or high cholesterol foods.

**Percentage of Iowans Eating Fewer Fat or Cholesterol
Calories to Lower Their Risk of Developing Heart
Disease, 1999**



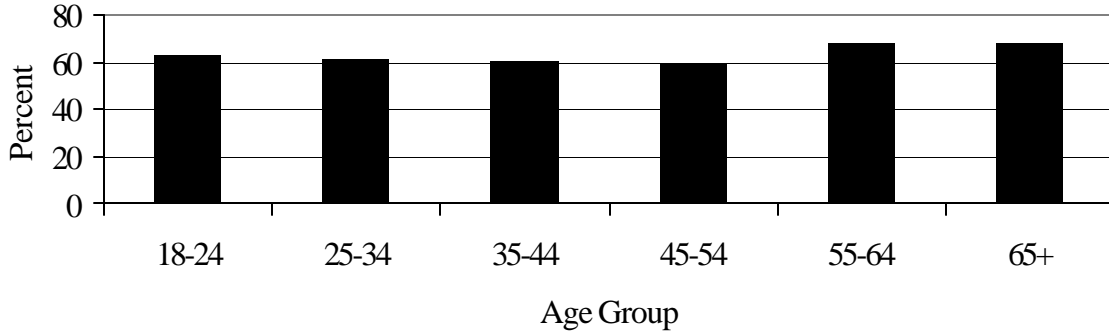
Moreover, 36 percent reported their **doctor advised them to eat fewer fat and cholesterol calories**. Respondents between the ages of 55 and 64 were most likely to have their doctor advise them to eat less (54.6 percent) compared to only 16.2 percent of those ages 18 to 24. Similar percentages of males and females reported being advised to eat less (35.2 percent of males vs. 36.8 percent of females).

**Percentage of Iowans Advised by a Doctor to Consume
Fewer Fat or Cholesterol Calories by Age, 1999**



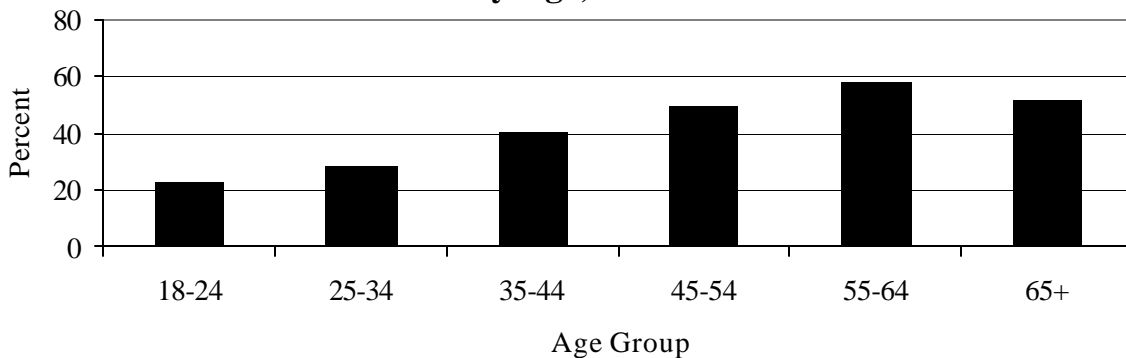
Approximately 63 percent of Iowans are **exercising more** to lower their risk of heart disease or stroke. Almost 68 percent of those between 55 and 64 and 65+ reported increasing their activity levels. The lowest percentage of respondents reporting that they exercised more were between 45 and 54 (59.7 percent). Two-thirds of females, compared to 59.3 percent of males, were exercising more.

Percentage of Iowans Exercising More to Lower Their Risk of Heart Disease or Stroke by Age, 1999



Of those surveyed, 42.1 percent reported that their doctor advised them to **exercise more** and of those who were told to exercise more, 57.5 percent of respondents were between the ages of 55 and 64, 51.2 percent ages 65+, 49.9 percent ages 45 to 54, and 40.3 percent ages 35 to 44. These percentages significantly decreased for those under age 35. Approximately 28.8 percent of respondents between 25 and 34 reported being advised to exercise more and 23 percent of respondents between 18 and 24 were given similar advice. Females were more likely to be advised to exercise more compared to their male counterparts (45.5 percent vs. 38.4 percent).

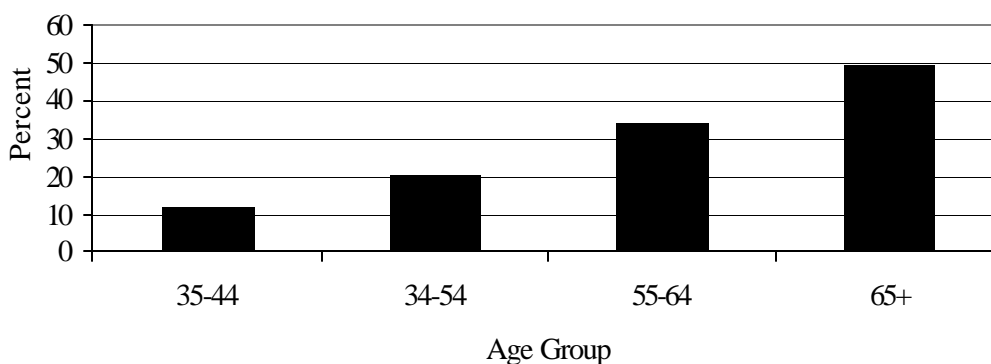
Percentage of Iowans Advised by a Doctor to Exercise More by Age, 1999



Respondents were asked whether they were ever told by a doctor that they had a **heart attack**. Approximately 4.3 percent reported yes, while 92.7 percent said no. The majority of these respondents were male and over age 65 (12.4 percent). Less than one-percent of respondents under age 45 reported having a heart attack. Iowans surveyed also were asked whether a doctor ever told them they had **coronary heart disease** and 4.4 percent said yes. A greater percentage of males than females reported ever being told they have coronary heart disease. A greater percentage of those over age 65 also reported having coronary heart disease (13.6) compared to people ages 55 to 64 (7.2).

Taking aspirin daily has been recommended as a preventive measure to reduce the risk of heart disease for people over age 35. Twenty-nine percent of respondents reported taking aspirin daily or every other day. All respondents using aspirin daily were over age 35. Percentages of use directly increased with age. Only 11.8 percent of respondents between 35 and 44 reported daily use compared to 49.2 percent of respondents ages 65 and older. Over 30 percent of males compared to 27.5 percent of females reported daily or every-other-day use. When asked why they take aspirin, 76.4 percent said it was to reduce the risk of heart attack, and 68.8 percent said to reduce the risk of stroke.

Percentage of Iowans, Ages 35 and Older, Who Take Aspirin Daily or Every Other Day, 1999



BIBLIOGRAPHY FOR HEART DISEASE

1. Centers for Disease Control and Prevention, *Evaluating Community Efforts to Prevent Cardiovascular Diseases*. U.S. Department of Health and Human Services, Public Health Service. 1995.
2. National Heart, Lung, and Blood Institute, *Healthy Heart Handbook for Women*. National Institutes of Health. 1997.
3. Ridker, Paul M and Hennekens, Charles H. (editors). *Prevention of Myocardial Infarction*. New York: Oxford University Press, 1996.
4. Trends in Ischemic Heart Disease Deaths—United States, 1990-1994. *Morbidity And Mortality Weekly Report*, 46(7):146-50. 1997.

HIGH BLOOD PRESSURE

Background

Average adult American blood pressure levels and the prevalence of high blood pressure declined between 1976 and 1991.¹ However, since 1993, deaths from coronary heart disease have evened out, and progress in blood pressure detection, treatment and control has slowed.

High blood pressure is defined as systolic blood pressure that is greater than or equal to (\geq) 140 millimeters of mercury (mm hg) and/or diastolic blood pressure \geq 90 mm hg.

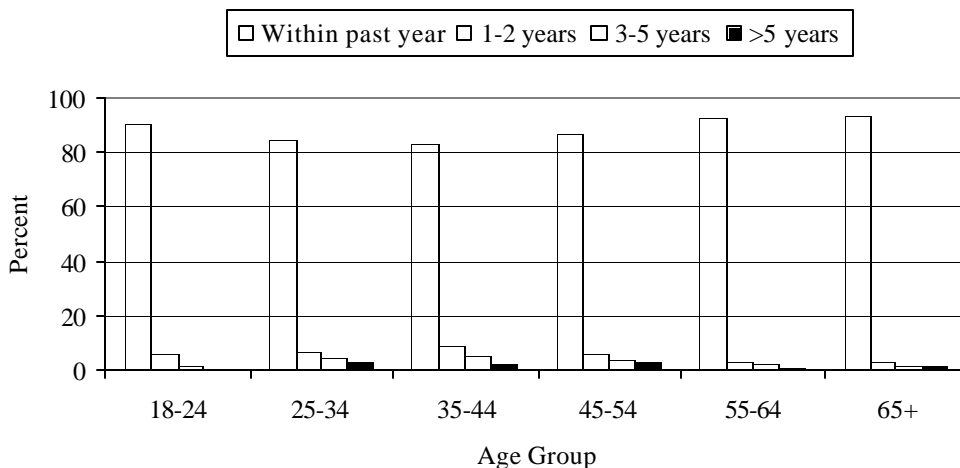
Nearly one-fourth of adults—as many as 50 million Americans—have elevated blood pressure or take antihypertensive medication.² High blood pressure is most prevalent in older people, African-Americans, and in people with less education and lower socioeconomic status.¹ In young adulthood and early middle age, men are more likely to have high blood pressure than women; after that, the reverse is true.²

Primary prevention of hypertension can be accomplished through two complementary approaches: 1) a strategy to lower the incidence of high blood pressure in the entire population by lowering individual blood pressure levels; and 2) a targeted strategy to lower blood pressure among populations at high risk.¹

High Blood Pressure in Iowa

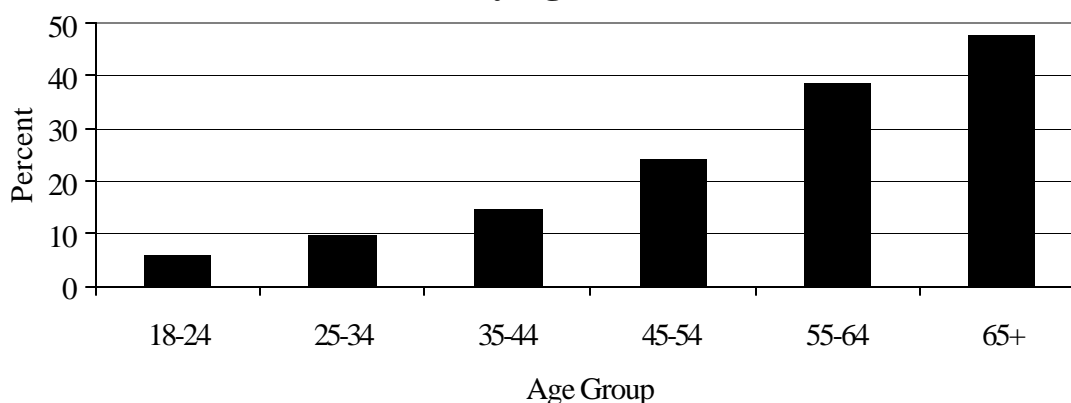
In 1999, 88.3 percent of survey respondents reported they had their **blood pressure taken by a health professional within the past year**. Approximately 92.1 percent of females and 84.1 percent of males had their blood pressure taken during the past 12 months. The age distribution varied from 83.3 percent for persons between the ages of 35 and 44, and 93.4 percent for those 65 and over. Interestingly, respondents ages 18 to 24 were the third most frequent to report having their blood pressure taken during the past year (90.3 percent), followed by those ages 55 to 64 (92.6 percent).

Time Since Last Blood Pressure Measurement, 1999



Twenty-four percent reported that they were at some time **told they have high blood pressure**. The majority of respondents were ages 65 and older (47 percent). Significantly more females reported having high blood pressure than males (56.5 percent vs. 43.5 percent). Lower income also appeared to be associated with high blood pressure. An estimated 39.4 percent of respondents who had incomes less than \$15,000 reported ever having high blood pressure, compared to only 19.1 percent of respondents with an income of \$75,000 or more.

**Iowans Who Have Been Told They Have High Blood Pressure
by Age, 1999**



BIBLIOGRAPHY FOR HIGH BLOOD PRESSURE

1. National Center for Health Statistics. *Healthy People 2000 Review*, . U.S. Department of Health and Human Services, Public Health Service. 1997.
2. *The Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure*. U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute. 1997.
3. *Working Group Report on Primary Prevention of Hypertension*. U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute. 1993.

DIABETES

Background

Diabetes rates in the United States are approaching epidemic proportions. More than 10 million Americans live with the burden of diabetes and another 5 million have the disease and don't know it. The number of persons diagnosed with diabetes increased fivefold between 1958 and 1997 at a direct cost of over \$40 billion and an indirect cost of \$50 billion annually, from absenteeism, disability, and premature death.¹ An alarming new trend is the growing number of children and adolescents who are being diagnosed with type 2 (adult-onset) diabetes. This is attributed to overweight and inactivity.

Those at highest risk include older Americans, low-income people, smokers, physically inactive people, those with a family history of diabetes, and overweight individuals.² Hispanic, African American and Native Americans have a significantly higher risk of the disease and its ensuing complications. Preventive measures to avoid or delay onset of the disease include maintaining a recommended weight and being physically active.

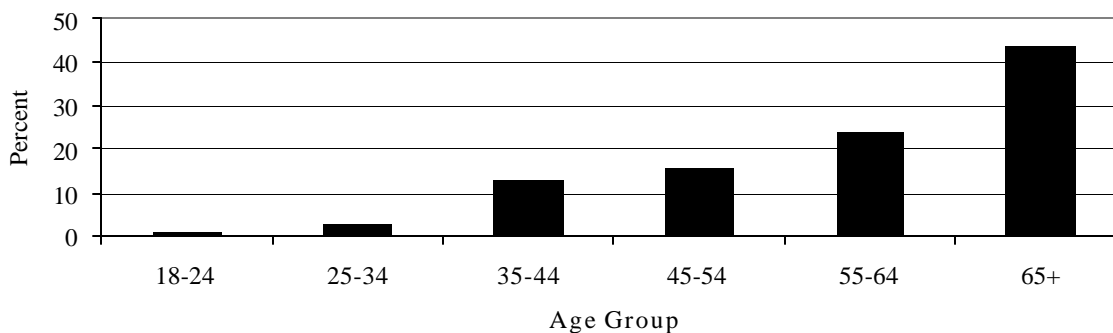
The complications of diabetes are severe and include cardiovascular disease, hypertension, renal disease, blindness, and lower extremity amputations. However, they can be minimized when diabetes is diagnosed early and the patient is taught to manage the disease through blood glucose control, weight control, taking medications appropriately, smoking cessation, and being physically active.

The Diabetes Control Program in the Iowa Department of Public Health provides health updates for professionals on the latest guidelines for diabetes care, collaborates with communities to develop initiatives on public awareness and prevention of complications, and assists certified programs to maintain quality standards for outpatient education.

Diabetes in Iowa

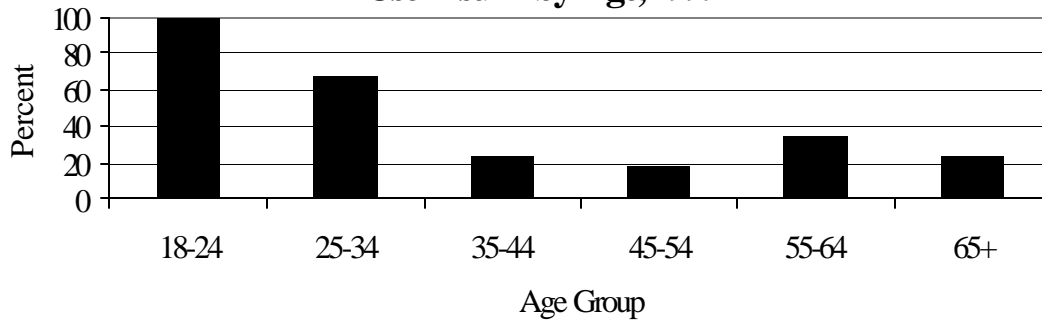
In 1999, 5.2 percent of respondents had been **told by a physician that they have diabetes**, excluding women told only during pregnancy. Among these, 43.6 percent reported being first diagnosed at age 65 or older, 24.2 percent between ages 55 and 64, 15.5% between 45 and 54, and 13.0 percent between 35 and 44. Only 2.8 percent were diagnosed between ages 25 and 34 and less than 1 percent between 18 and 24.

Age at Time of Diabetes Diagnosis, 1999



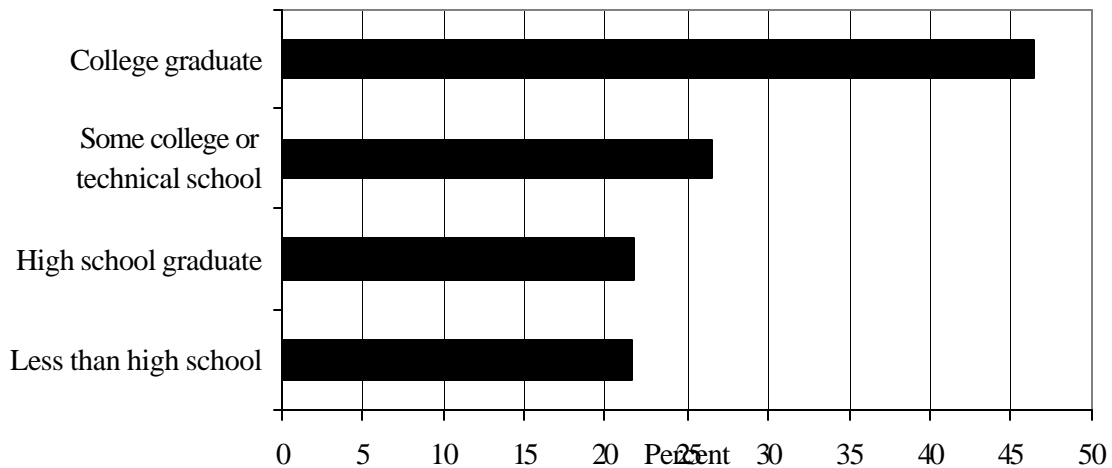
Of those ever told by a physician that they have diabetes, 27.1 percent reported **currently taking insulin**. All respondents ages 18 to 24 reported currently taking insulin, while only 67.4 percent of those ages 25 to 34 reported using insulin. After age 35, the percentage of respondents who reported currently taking insulin declined significantly. The lowest percentage was 17.7 in those ages 45 to 54.

Percentage of Iowans With Diabetes Who Currently Use Insulin by Age, 1999

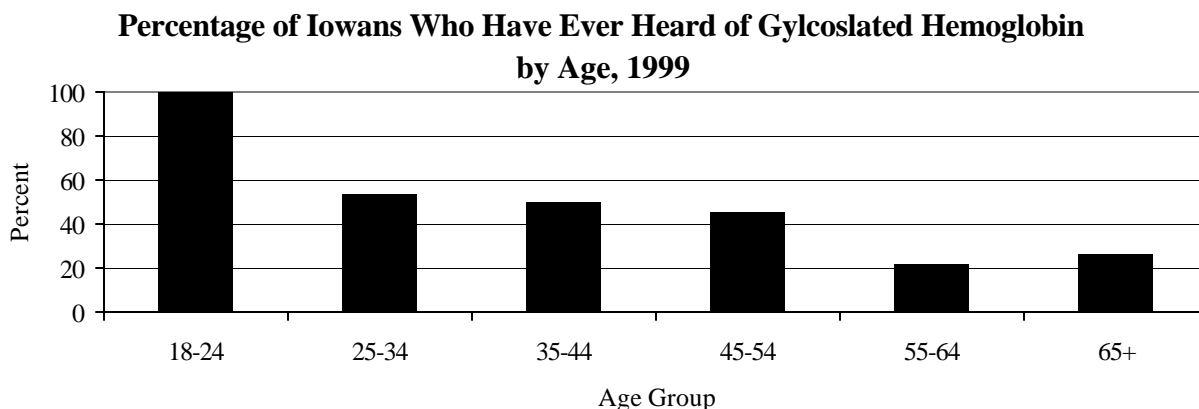


Respondents with higher levels of education reported greater insulin use. The same percentage of respondents (21 percent) reported current use among those with less than a high school education or high school degree compared to 46.4 percent of college graduates.

Percentage of Iowans With Diabetes Who Currently Use Insulin by Education, 1999

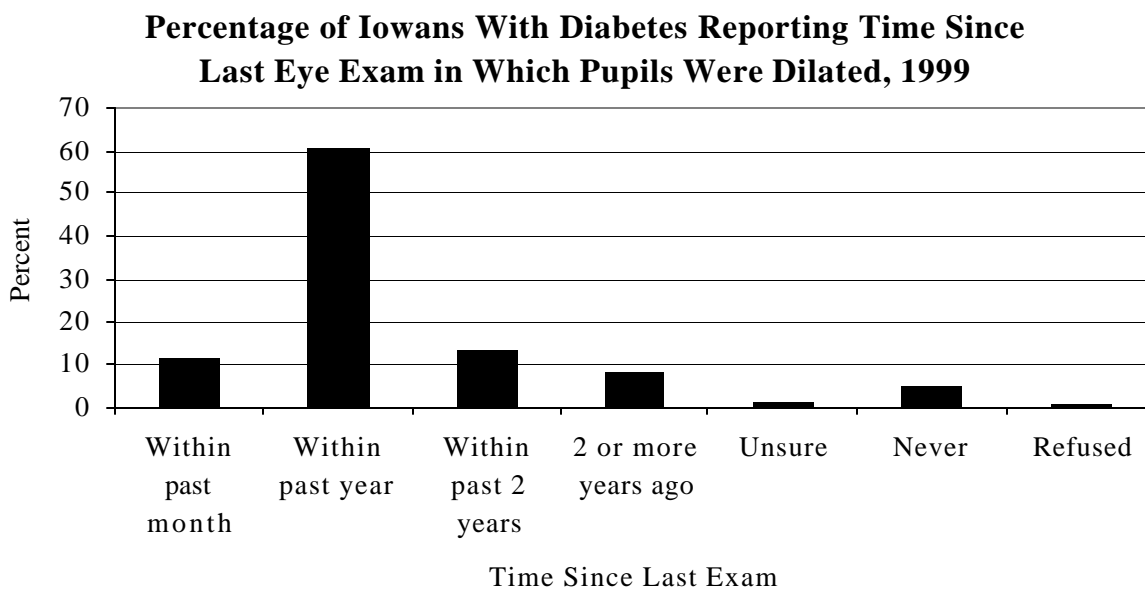


Respondents told by a physician they have diabetes were asked whether they had **ever heard of glycosylated hemoglobin**. Over 32 percent answered yes to this question, 61.7 percent answered no, and 5.7 percent were unsure. When asked how many times they had their **glycosylated hemoglobin checked**, 76.7 percent reported between 1 and 20 times and 7.4 percent reported none. Another 15.9 percent reported they were unsure.



In addition to having their glycosylated hemoglobin checked, people with diabetes should have their **feet checked for sores and irritations**. When asked how many times they had their feet checked, 69.6 percent of respondents claimed to have them checked between 1 and 20 times, 27.5 percent reported none, and 2.9 percent were unsure.

Because persons with diabetes are at high risk of glycoma, regular eye examinations, including pupil dilation, are important. Respondents were asked when they had their **last eye exam in which their pupils were dilated**. Seventy-two percent reported within the last year, 13.3 percent in the last two years, 8.5 percent two or more years ago, and 4.7 percent never. Approximately 4.7 percent of respondents were unsure.



BIBLIOGRAPHY FOR DIABETES

1. Diabetes and Women's Health Across the Life Stages, Centers for Disease Control and Prevention, p. iii.
2. The National Diabetes Education Program: A Diabetes Community Partnership Guide, Centers for Disease Control and Prevention, p.9.

ORAL HEALTH

Background

Despite the fact that dental decay has significantly declined over the past two decades in the U.S., a disproportionate number of American children continue to suffer with tooth decay and other oral health conditions.¹ This fact inspired the first-ever Surgeon General’s Report on Oral Health, which identifies a “silent epidemic” of dental and oral diseases, and calls for a national effort to improve oral health among Americans.² Left untreated, the pain and infection caused by tooth decay can lead to problems in eating, speaking, and the ability to learn.³ It has been well documented that children from families with low incomes have five times more untreated tooth decay than children from higher income families.⁴

Studies have also concluded that for each child without medical insurance, there are almost three children without dental insurance.⁵ When translated, this means that only about 50 percent of white children, 39 percent of African-American children, and 32 percent of Mexican-American children have dental insurance.⁶

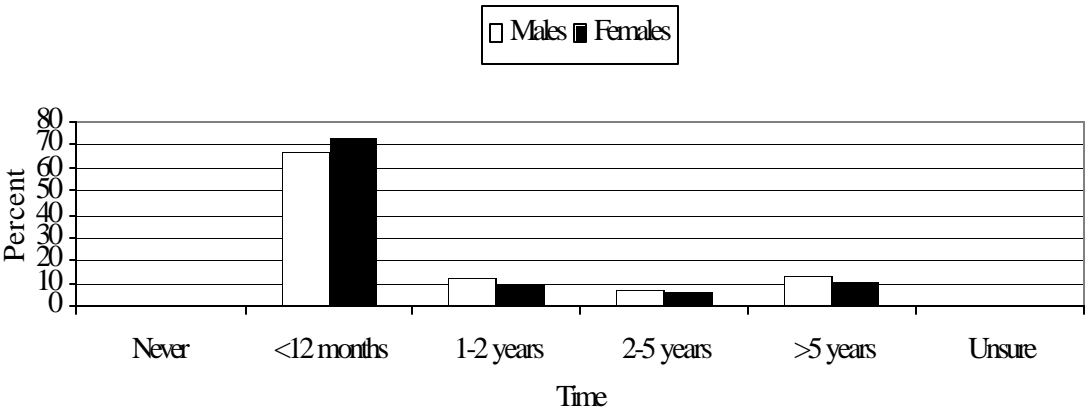
The American Academy of Pediatric Dentistry recommends that professional intervention begin at approximately 12 months of age or shortly after the primary teeth begin to erupt. The goal of the first dental visit is to assess the risk for dental disease, initiate a preventive program, provide anticipatory guidance, and decide on the frequency of subsequent visits.⁷

Since 1999, the Iowa BRFSS survey has included five dental health questions. The purpose of these questions was two-fold. One was to determine how frequently Iowans use dental services and the second was to determine the percentage of Iowans claiming to have dental insurance.

Oral Health in Iowa

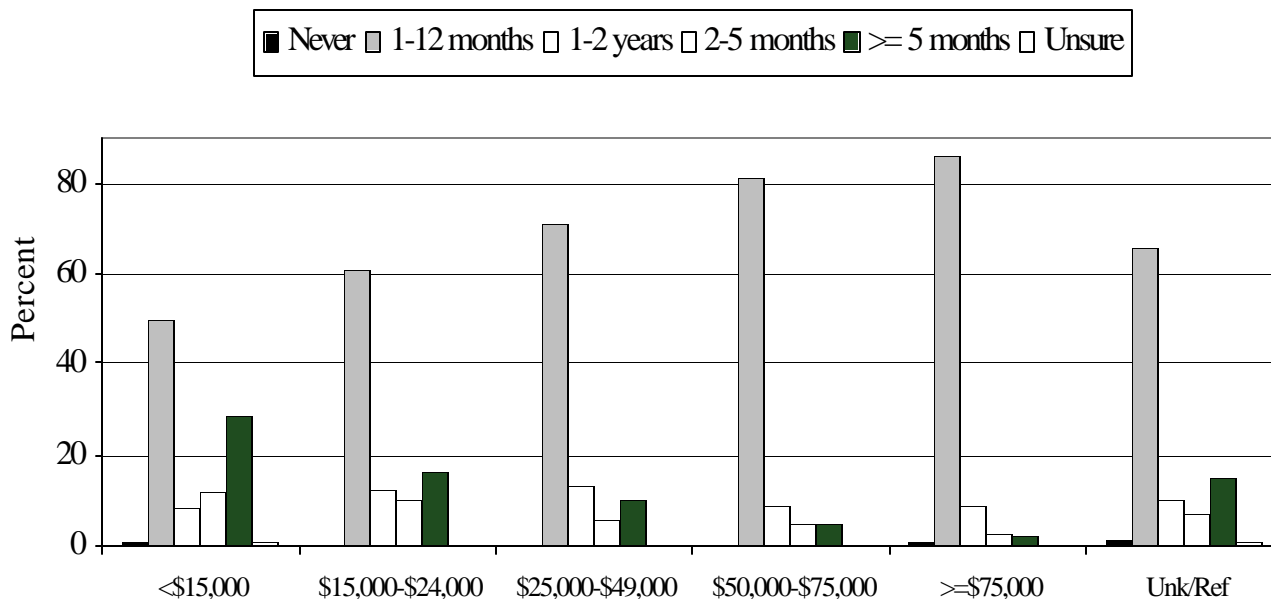
In 1999, 70.3 percent of Iowans surveyed reported **visiting a dentist within the past year**. However, 11.5 percent reported their last dental visit more than 5 years previously. Overall, females were more likely than males to report a dental visit during the previous 12 months (38.3 percent vs. 32.0 percent). A greater percentage of males reported their last dental visit more than 5 years previously (12.8 vs. 10.4).

Time Since Last Dental Visit by Gender, 1999



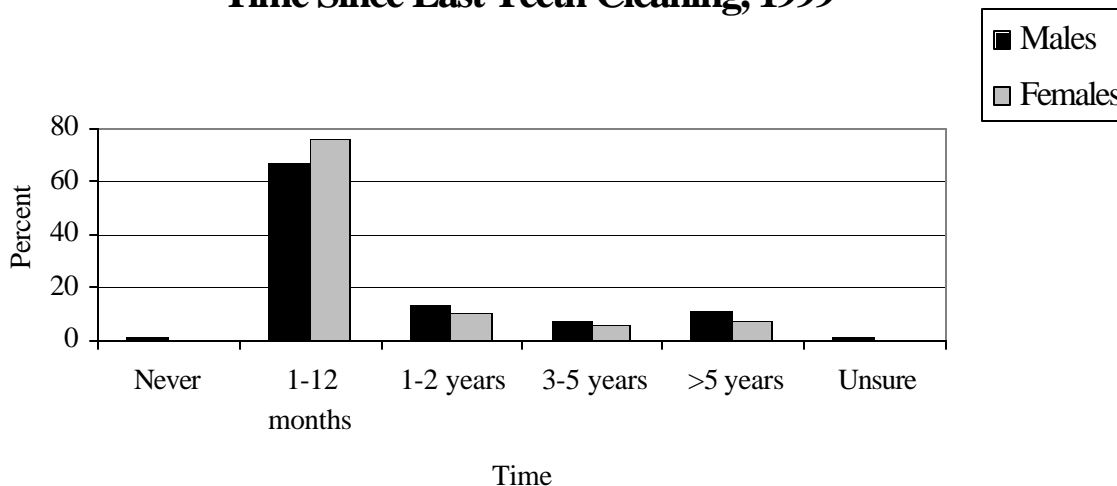
Greater income was related to the likelihood of visiting a dentist. Eighty-six percent of people reporting an income of \$75,000 or more reported a dental visit in the last year compared to 49.9 percent of those making less than \$15,000.

Dental Visit Within the Past 12 Months By Income, 1999



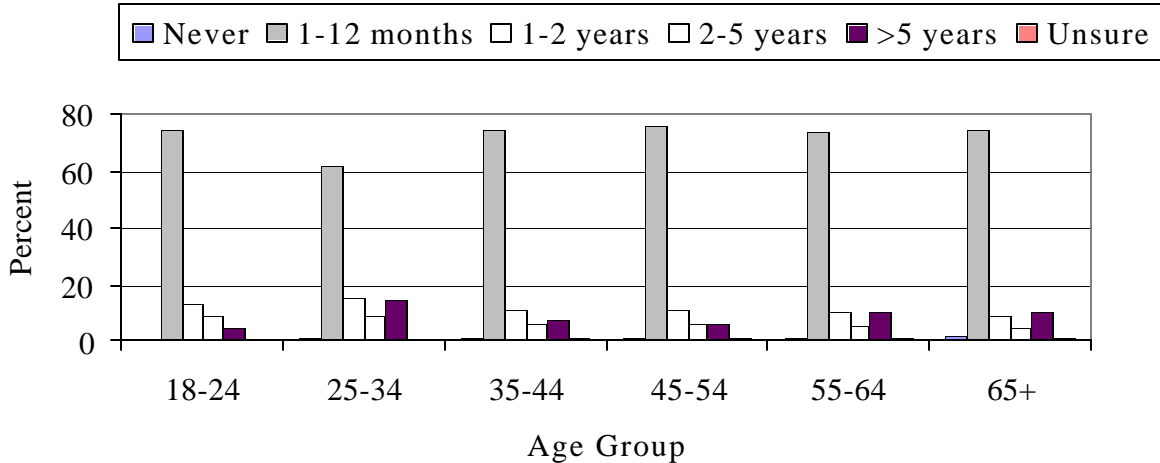
during the previous year than male respondents (76.5 percent vs. 67.0 percent).

Time Since Last Teeth Cleaning, 1999



the previous year, and were the greatest percentage having their teeth cleaned 5 or more years previously. Those between the ages of 45 and 54 had the greatest percentage of respondents having their teeth cleaned during the previous 12 months.

Time Since Last Teeth Cleaning by Age, 1999



BIBLIOGRAPHY FOR ORAL HEALTH

1. National Institute of Dental Research, U. S. Department of Health and Human Services. Oral Health of United States Children; *The National Survey of Dental Caries in U.S. School Children: 1986-1987, National and Regional Findings*. NIH Pub. No. 89-2247. Bethesda: National Institute of Dental Research, 1989.
2. National Institute of Dental and Craniofacial Research. 2000. *The Surgeon General's Report on Oral Health*. In National Institute of Dental and Craniofacial Research (Web Site). Cited December 4, 2000; available at <http://www.nidr.nih.gov/sgr/sgr.htm>.
3. U.S. General Accounting Office. 2000. *Oral Health: Dental Disease Is a Chronic Problem Among Low-Income Populations and Vulnerable Populations*. Washington, DC: U.S. General Accounting Office.
4. Ibid.
5. Vargas CM, Isman RE, Crall JJ. Comparison of Children's medical and dental insurance coverage by socioeconomic characteristics, U. S. 1995., (Not yet published).
6. U.S. Department of Health and Human Services, Public Health Service. 1992. Current Estimates from the National Health Interview Survey, 1991. Hyattsville, MD: U. S. Department of Health and Human Services.
7. Nowak AJ. 1997. Rationale for the timing of the first oral evaluation. *Pediatric Dentistry* 19 (1):8-11.

SUN EXPOSURE

Background

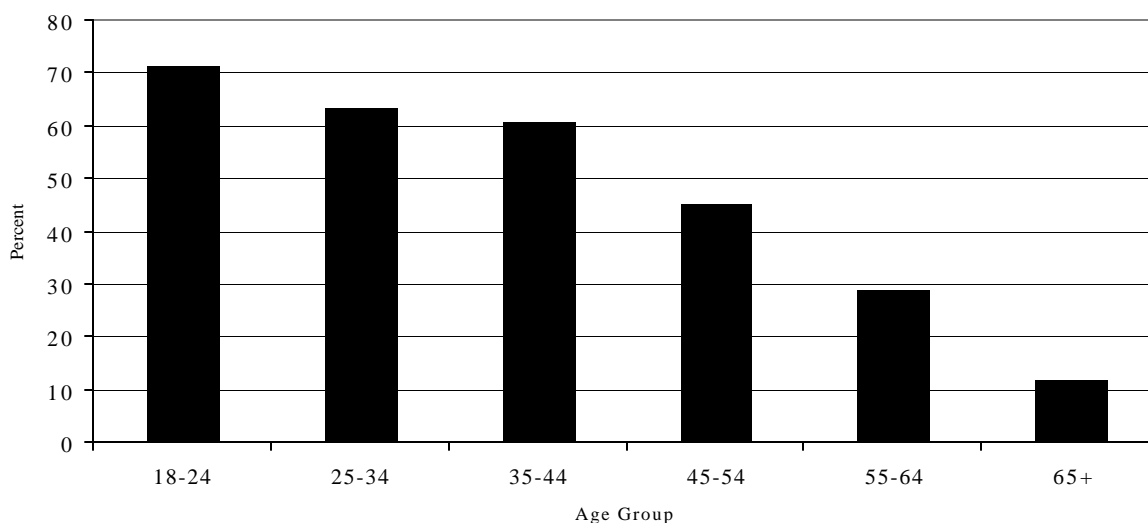
Exposure to ultraviolet radiation (UV) is an important risk factor for developing all types of skin cancer, including melanoma.¹ The primary source of ultraviolet radiation for most people is sunlight; however, other sources include tanning lamps and tanning beds. Sunburns can occur from any type of ultraviolet exposure. Repeated sunburns damage the skin and can lead to melanoma. Limiting exposure to the sun's ultraviolet rays can significantly lower the risk of developing melanoma and other types of skin cancer.

The Centers for Disease Control and Prevention (CDC) report that most adults do not protect themselves adequately by using sunscreen or wearing protective clothing. Contributing to this behavior are societal perceptions about the attractiveness of having a tan.² This attitude needs to change to increase the use of sunscreen and wearing protective clothing. Additional efforts need to be directed toward encouraging people to protect exposed skin during everyday activities, such as work or outdoor exercise.

Sun Exposure in Iowa

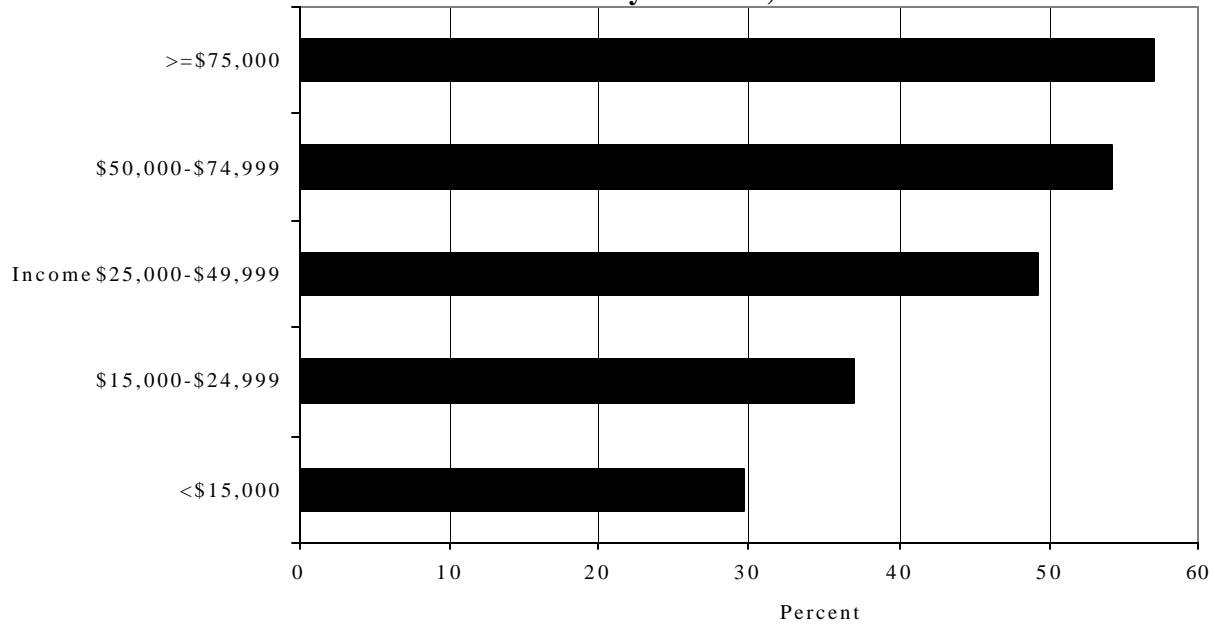
In 1999, 45.5 percent of Iowans reported **having a sunburn in the previous 12 months**. Younger respondents were much more likely to report a recent sunburn than older individuals. Over 71 percent of respondents between the age of 18 and 24 reported a sunburn compared to only 11.7 percent of persons age 65 and older. Males were more likely than females to report a sunburn. Only 38.1 percent of women reported having a sunburn during the previous 12 months compared to 53.6 percent of males.

Iowans Who Reported Having a Sunburn in the Past 12 Months by Age, 1999



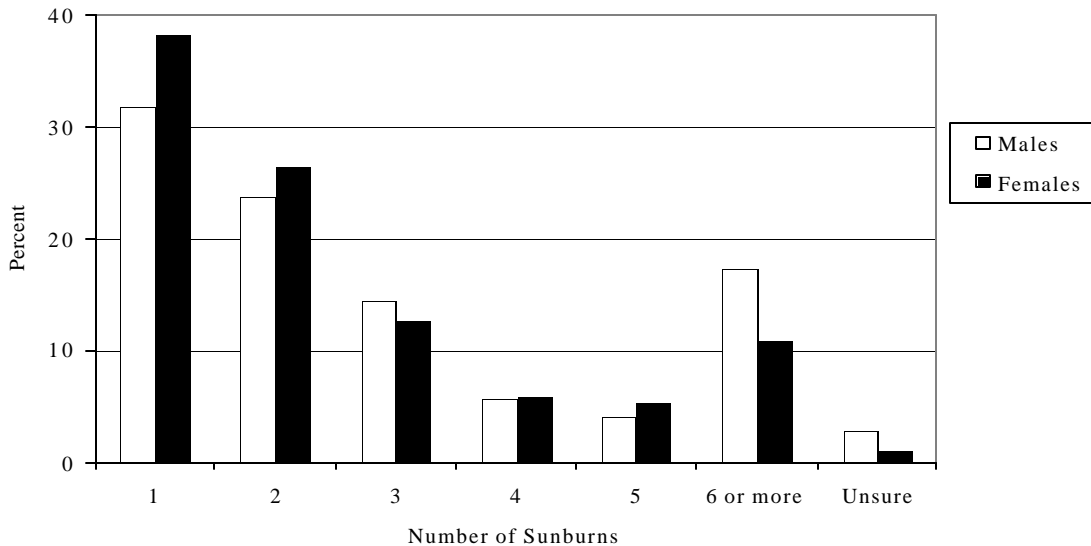
Interestingly, respondents reporting higher incomes and greater educational attainment were more likely to report having a sunburn during the previous 12 months.

**Iowans Who Have Had a Sunburn in the Past 12 Months
by Income, 1999**



only one sunburn and 24.9 percent reported two sunburns. Overall, older respondents reported fewer sunburns than younger people.

**Number of Sunburns During the Past 12 Months
by Gender, 1999**



BIBLIOGRAPHY FOR SUN EXPOSURE

1. www.cancer.org
2. www.cdc.gov

CHOLESTEROL

Background

High blood cholesterol levels are associated with increased incidence of coronary heart disease. High cholesterol means a concentration in the blood of greater than or equal to 240 milligrams per deciliter (mg/dl). Reducing high levels of blood cholesterol helps to decrease a person's risk for heart disease.³

For nearly two decades, average cholesterol levels in the United States have fallen. Between 1976 and 1993, average adult cholesterol dropped from 213 mg/dl to 203 mg/dl. During the same period, the proportion of adults with high cholesterol (≥ 240 mg/dl) dropped substantially, from 27 percent to 19 percent.²

Despite this progress, half of the U.S. population has cholesterol levels ≥ 200 mg/dl, defined as borderline high levels. Activities using two approaches can help lower cholesterol levels:

- 1) a clinical approach to identify and treat at-risk people; and
- 2) a population-based strategy to reduce the population's average cholesterol level by lowering individual cholesterol levels.

These approaches complement one another and represent a coordinated strategy for reducing the risk of coronary heart disease.¹

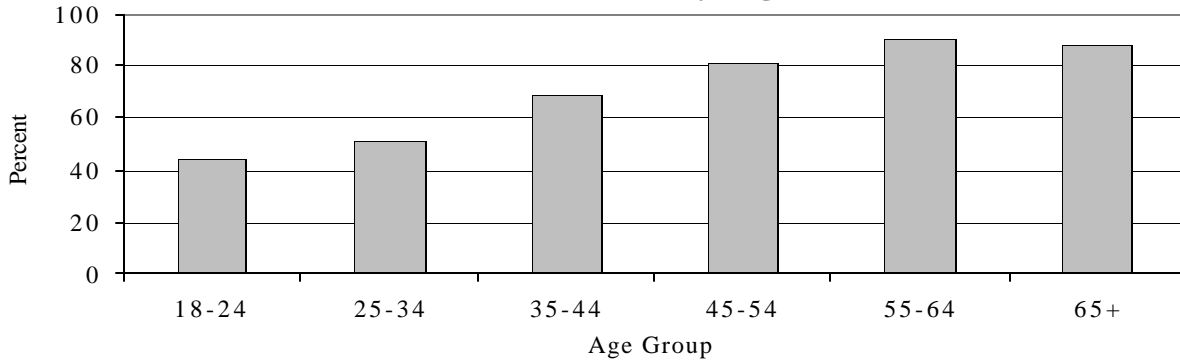
Healthy American adults over age 20 can lower their blood cholesterol levels by adopting a low-fat, low-cholesterol diet and by having blood cholesterol measured every five years. Each 10 percent reduction in the U.S. population's average blood cholesterol level can reduce deaths from coronary heart disease by 20 percent.¹

High Blood Cholesterol in Iowa

The percentage of Iowans reporting **ever having their cholesterol checked** increased from 69.8 percent in 1998 to 71.4 percent in 1999. More females than males reported having their cholesterol checked.

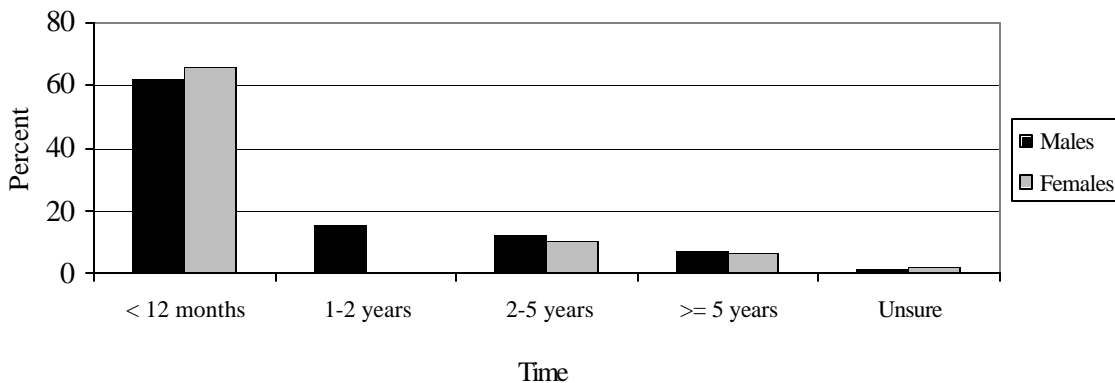
The proportion of respondents reporting ever having their cholesterol checked increased with age. Over 90 percent of respondents between 55 and 64 and 88.2 percent of respondents 65 and over reported ever having their cholesterol checked.

Percentage of Iowans Ever Having Their Blood Cholesterol Checked By Age, 1999



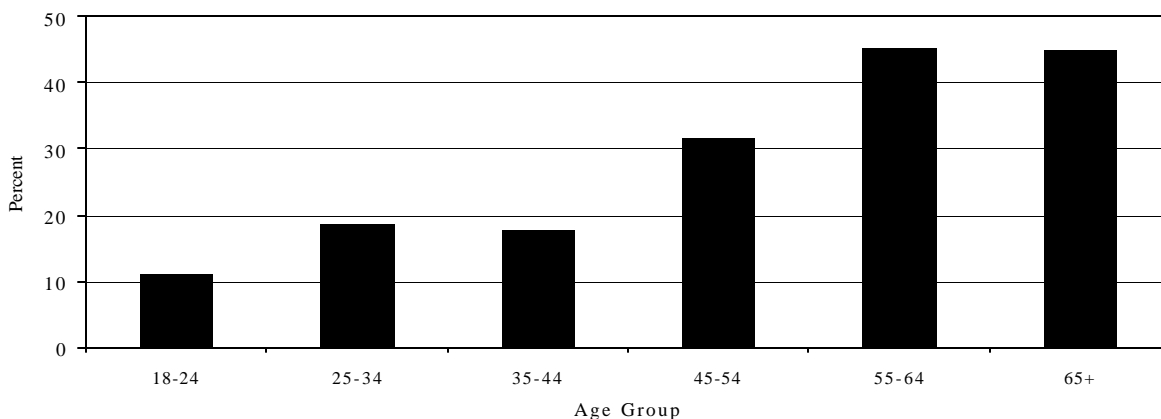
Sixty four percent of respondents reported **having their blood cholesterol checked by a health professional during the previous year**. Similar responses were reported for both males and females. Respondents in older age groups were more likely to report having a recent cholesterol test than younger respondents.

Time Since Last Cholesterol Check by Gender, 1999



Of all respondents, 31.4 percent reported **ever being told they have high cholesterol**. A slightly higher percentage of males than females have ever been told their cholesterol was high. The majority of respondents reporting high cholesterol were in the older age groups. This included approximately 45.2 percent of respondents between the ages of 55 and 64 and 44.9 percent of those 65 and over.

Iowans Ever Told They Had High Cholesterol by Age, 1999



Comparison With Other States

In 1999, the percentage of Iowa adults who had their blood cholesterol checked (72.9 percent) fell slightly below the national median (73.6 percent). Nationally, 30.0 percent of the adult population had been told their blood cholesterol was high. For Iowans, the percentage was 28.1 percent.

BIBLIOGRAPHY FOR CHOLESTEROL

1. National Center for Health Statistics. Healthy People 2000 Review. U.S. Department of Health and Human Services, Public Health Service. 1997.
2. National Heart, Lung, and Blood Institute, Second Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults. U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health. 1993.
3. U.S. Department of Health and Human Services. Healthy People 2000: National Health Promotion and Disease Prevention Objectives. Public Health Service, U.S. Department of Health and Human Services. DHHS Publication No. (PHS) 91-50213. 1991.

TOBACCO USE

Background

Tobacco use remains the leading preventable cause of death in the United States. It is responsible for more than 430,000 deaths each year, or one in every five deaths.¹ Over \$50 billion is spent every year on direct medical expenditures, and another \$50 billion on indirect costs, such as lost work time from tobacco use.¹

Tobacco use is known to cause heart disease, peripheral vascular disease, chronic lung disease, as well as cancers of the lung, larynx, esophagus, pharynx, mouth and bladder. In addition, cigarette smoking contributes to cancer of the pancreas, kidney, and cervix.

Consequences of smoking during pregnancy include spontaneous abortions, low birthweight babies, and sudden infant death syndrome (SIDS).⁴ In addition, environmental tobacco smoke (ETS) increases the risk of heart disease and lung cancer in adults. ETS also affects children by increasing lower respiratory tract infections and asthma, and by decreasing pulmonary functioning.⁶

Exposure to ETS is significant. In one study, 87.9 percent of children and adult nonusers of tobacco had detectable levels of serum cotinine.⁵ Every year, exposure to ETS causes an estimated 3,000 nonsmoking Americans to die of lung cancer and causes up to 300,000 children to suffer from lower respiratory tract infections.⁷

Public health efforts to reduce tobacco use began after the health risks were announced in the first surgeon-general report on tobacco in 1964. Smoking declined from 42.4 percent in 1965, to 24.7 percent in 1997.¹ However, since 1990, these rates have not continued to decline. Prevalence has remained constant for adults, and has increased among high school students (now at a prevalence rate of 36.5 percent).¹

Preventing initiation of tobacco use has become a priority in reducing prevalence since more than 80 percent of current adult tobacco users started smoking cigarettes before the age of 18.²

In the past 20 years, the rate of cigarette smoking has declined for adolescent males, but the use of smokeless tobacco, such as chewing tobacco, has increased by 40 percent. In addition, new forms of tobacco in the United States have grown in popularity among youth, including such formerly exotic items as bidis, and kreteks. Use of these substances among high school students is now at almost the same percentage rate as that of smokeless tobacco users (5 to 7 percent.)³

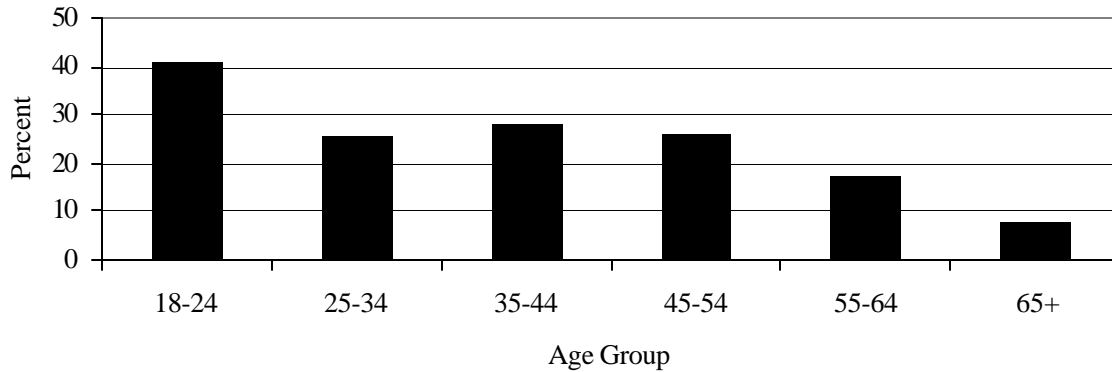
There are large disparities in tobacco use and health outcomes across racial and ethnic groups and socioeconomic status.¹ American Indians and Alaska Natives had the highest smoking prevalence in 1998, with black and Southeast Asian men coming in second.¹

A dramatic increase in tobacco use worldwide prompted the World Health Organization and the World Health Assembly to launch global tobacco control strategies.¹

Tobacco Use in Iowa

Of all respondents surveyed in 1999, 23.5 percent reported being current smokers. **Current smoking** was defined as smoking some days or everyday during the previous 30 days and smoking at least 100 cigarettes in a lifetime. The proportion of current smokers decreased with age. Respondents between ages 18 and 24 reported the greatest percentage of smokers (40.8 percent). Current smoking percentages for those between 25 and 54 ranged from 25.8 to 28.0. Only 8 percent of respondents ages 65 and older were current smokers.

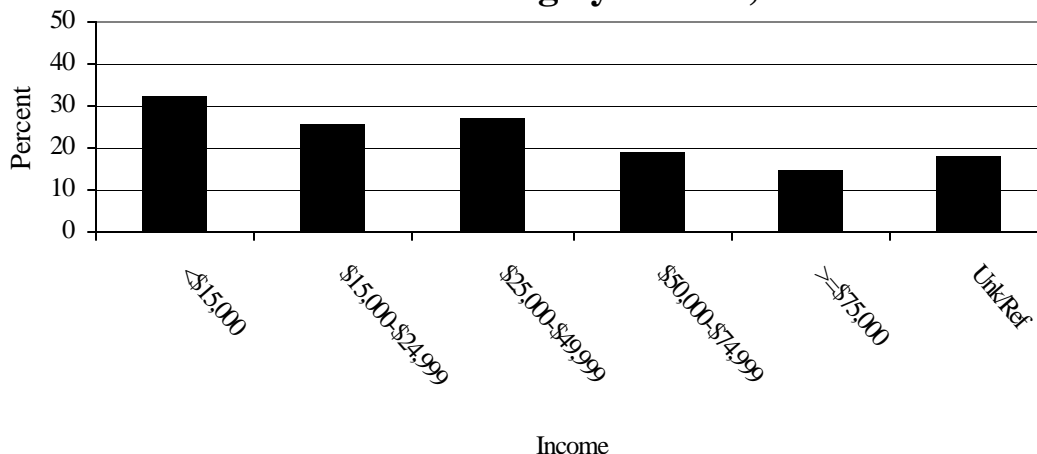
Current Smoking by Age, 1999



Males were more likely to be current smokers than females. Over 26.6 percent of males reported being current smokers compared to 20.6 percent of females.

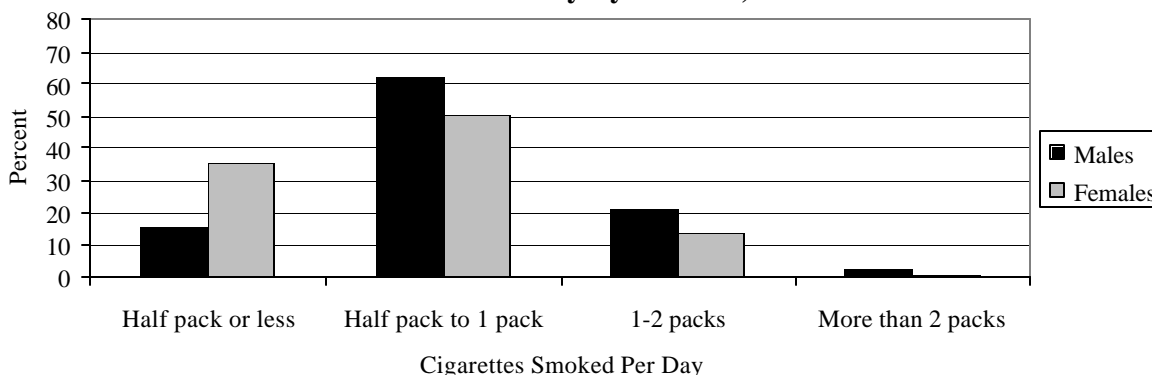
Respondents with incomes of \$75,000 or more were significantly less likely than lower income groups to smoke. Less than 33 percent of respondent who reported an income of \$75,000 or greater were current smokers compared to 55.3 percent for people reporting an income under \$15,000. Approximately 45.2 percent of respondents with an income between \$50,000 and \$74,999 were current smokers.

Current Smoking by Income, 1999



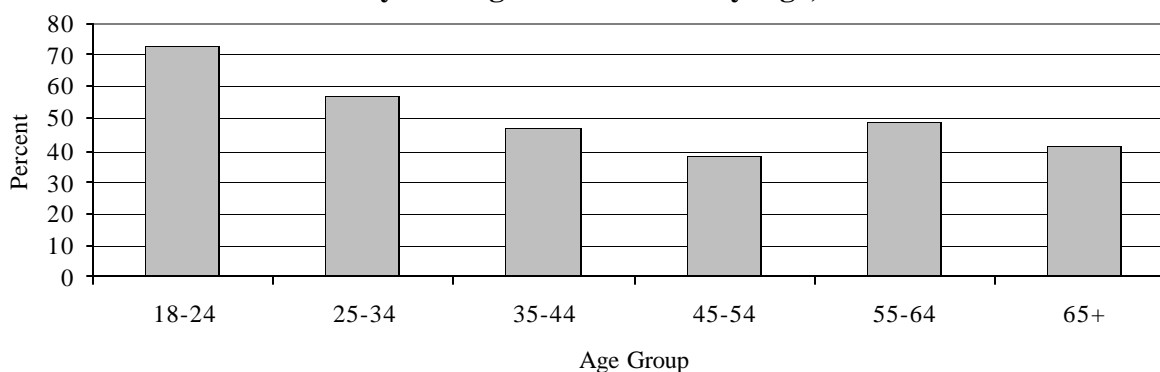
The majority of current smokers in each age group reported smoking one pack per day or less. Overall, females reported smoking fewer cigarettes than males. Over 35 percent of females compared to 15.2 percent of males currently smoke a half pack or less per day. Approximately 50 percent of females and 61 percent of males smoke half to one pack per day. Almost two percent of males and females and 61 percent of males smoke half to one pack per day. Almost two percent of males and less than one percent of females smoke more than two packs per day.

Of Those Who Smoke Everyday, Number of Cigarettes Smoked Per Day by Gender, 1999



Over 92 percent of current smokers between the ages of 18 and 24 and 87.4 percent of smokers between the ages of 25 and 34 reported smoking one pack or less per day. Although respondents ranging in age from 45 to 54 had the lowest percentage of current smokers using one pack or less per day, they reported the greatest percentage smoking one to two packs per day. People ages 65 and older reported the highest percentage of current smokers using more than two packs per day.

Of Those Who Smoke Everyday, Percentage Who Quit for at Least One Day During the Past Year by Age, 1999



Almost 52 percent of Iowa respondents **quit smoking for a day or more during the past year**. An equal percentage of males and females quit for at least one day. Younger respondents were more likely to report trying to quit during the previous year. Close to 72.8 percent of people surveyed between 18 and 24 reported trying to quit compared to 41.3 percent of persons age 65 and older. Respondents between the ages of 45 and 54 were least likely to report trying to quit. Only 38.4 percent reported quitting for a day or more during the past year.

BIBLIOGRAPHY FOR TOBACCO

1. Centers for Disease Control and Prevention. Achievements in Public Health, 1900-1999: Tobacco Use—United States, 1900-1999. *Morbidity And Mortality Weekly Report*. 48(43);986-993. November 05, 1999. <http://www.cdc.gov/epo/mmwr/preview/mmwrhtml/mm4843a2.htm>
2. Centers for Disease Control and Prevention.. *Preventing tobacco use among young people: report of the Surgeon General*. US Department of Health and Human Services, Public Health Service, CDC, National Center for Chronic Disease prevention and Health Promotion, Office on Smoking and Health, Atlanta, Georgia. 1994.
3. Centers for Disease Control and Prevention.. Tobacco Use Among Middle and High School Students – United States, 1999. *Morbidity And Mortality Weekly Report*. 49(03);49-53. January 28, 2000. www.cdc.gov/epo/mmwr/preview/mmwrhtml/mm4903a1.htm
4. Iowa Department of Public Health. *Healthy Iowans 2010: Iowa's Health Agenda for the New Millennium*. Des Moines, Iowa, Iowa Department of Public Health. January 2000.
5. Pirkle J L, Flegal K M, Bennert J T, et al. *Exposure of the U.S. population to environmental tobacco smoke*. *Journal of the American Medical Association*; 275:1233-40. 1996
6. U.S. Environmental Protection Agency. *Respiratory health effects of passive smoking: lung cancer and other disorders.*: Environmental Protection Agency, Office on Air and Radiation, Washington, DC. 1992. Environmental Protection Agency publication EPA/600/6-90/006F.

PROBLEM GAMBLING

Background

The **Iowa Gambling Treatment Program** in the Iowa Department of Public Health provides education, referral, and counseling for people affected directly or indirectly by problem gambling. The program receives money from the gambling treatment fund, which gets 0.3 percent of gross lottery revenue, the adjusted gross receipts from riverboat casinos, and the adjusted gross receipts from casino games at racetracks. An advisory committee provides advice and guidance on program structure and services.

A 1-800-BETS OFF helpline assists callers in accessing treatment and education from providers throughout the state. Gamblers and concerned persons receive counseling. The www.1800betsoff.org website provides Internet users with information on the program and problem gambling.

Training by experts on problem gambling are held over the Iowa Communications Network. Sessions reach a variety of interested people, including counselors, clergy, human resource personnel, mental health clinicians, social workers, and health-care professionals. Statewide multi-media messages educate people about problem gambling and its effects on gamblers, family members, and friends. A resource library and clearinghouse distributes problem gambling videotapes, brochures, curriculum guides, and other materials.

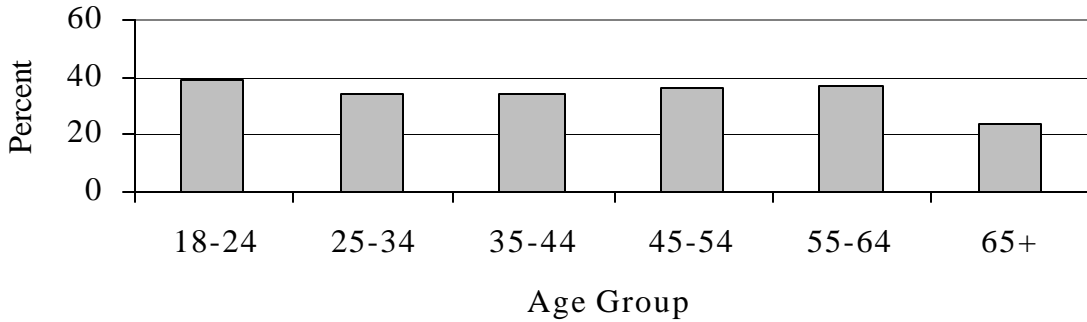
In 2001, Iowa gambling activities include bingo; raffles; limited social betting and lottery games. The state also has 10 riverboat casinos and three Indian casinos with table games, slot machines, and video poker, blackjack, and keno; and three pari-mutuel racetracks with slot machines and simulcast wagering. The Iowa Racing and Gaming Commission and the Iowa Lottery address problem gambling, stay informed on the issue, and cooperate with the Iowa Gambling Treatment Program.

Starting in 1997, three gambling questions were included in the BRFSS survey. The questions were: “Have you gambled in the last 12 months?” “Has the money you spent gambling led to financial problems?” and “Has the time you spent gambling led to problems in your family, work, or personal life?”

Gambling in Iowa

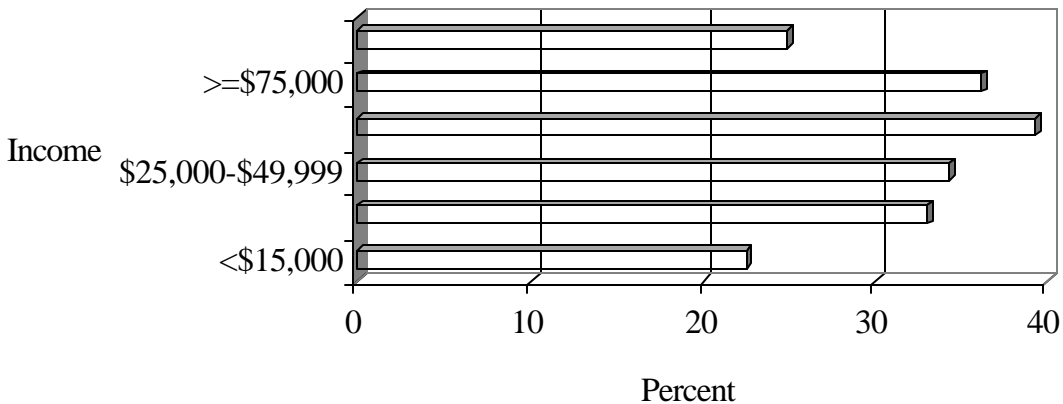
In Iowa, 33.3 percent of respondents reported they **had gambled in the previous 12 months** while 62.8 percent said they had not. Almost 4 percent of respondents refused to answer this question. The age distribution of respondents showed that the prevalence of gambling was almost evenly distributed among age groups. The highest prevalence was among those ages 18 to 24 (38.6 percent) followed by 37.4 percent of respondents ages 55 to 64. The lowest percentage of gambling during the past year was reported for those ages 65 and older.

Percentage of Respondents Who Reported Gambling During the Past Year by Age, 1999



Of respondents who reported gambling during the past year, respondents employed for wages (60.5 percent) and retired people (15.0 percent) were more likely to gamble than others. People with an annual income of \$50,000 to \$74,999 were the most likely to report gambling, compared to other respondents (39.2 percent). Respondents with incomes under \$15,000 were the least likely to report gambling during the past year (22.5 percent). Finally, males (40.0 percent) were more likely to gamble than their female (27.2 percent) counterparts.

Percent of Respondents Who Reported Gambling During the Past 12 Months by Income



In 1999, 98.8 percent of respondents said the money they spent gambling had not led to financial problems, while only 1.2 percent of the respondents said it did. Approximately 3.8 percent of respondents refused to answer these questions. Among those who reported gambling last year, 55.8 percent of respondents with incomes between \$25,000 and \$49,999 reported gambling leading to financial problems, followed by 27.3 percent of those with incomes between \$50,000 and \$74,999, and 16.9 percent of those with incomes less than \$15,000.

There are limitations in self-reported data. Validity of the survey results depends on the accuracy of responses by the participants. They must have correctly understood the definition of problem gambling and that it includes only those who sought help from a health professional.

MAMMOGRAPHY

Background

In 1999, the Iowa Cancer Registry estimated that 2,000 new cases of breast cancer were expected among women in Iowa. That makes breast cancer the most common cancer among Iowa women. Another 470 Iowa women are estimated to die from breast cancer, which accounts for 16 percent of all cancer deaths among Iowa women.⁶ Data for 1994 through 1996 indicate that two-thirds of all female breast cancer deaths in Iowa occurred among women age 65 and older.⁶

On average, a woman's lifetime risk of developing breast cancer is 1 in 8. Secondary prevention strategies, involving early detection with subsequent diagnosis and treatment, are the best methods for substantially reducing breast cancer mortality.

Regular mammography with a clinical breast examination (CBE) is the most effective method for discovering a tumor at an early stage (*in situ* and/or localized). If all women 50 to 74 years of age complied with screening recommendations, up to 39 percent of breast cancer mortality could be avoided.⁶

The American Cancer Society (ACS) recommends monthly breast self-examination for all women. Women ages 20 to 39 should also have a CBE by a health-care professional every three years. Women 40 and older should have both a mammogram and a CBE every year.⁴ (Note: The effectiveness of screening women under 50 years of age is still being debated.⁵) It is recommended that women 50 years of age and older without symptoms have a mammogram every year.³

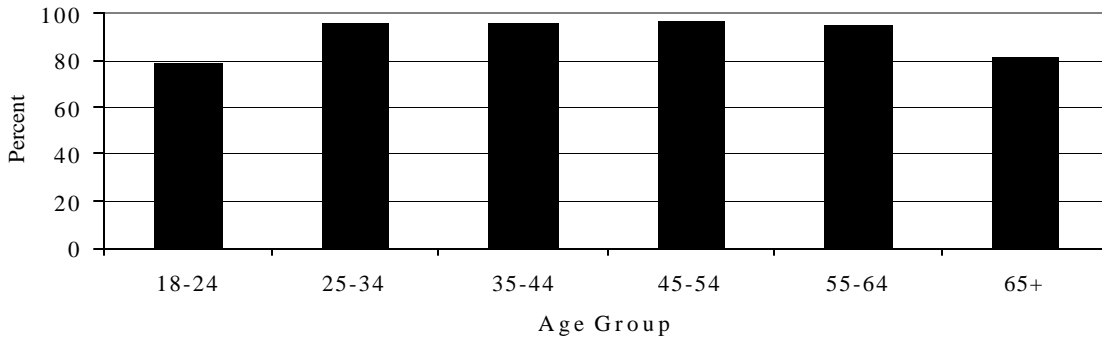
In 1987, despite the known advantages of early breast-cancer detection from mammography, 64 percent of women aged 40 and older had never had a clinical breast exam and mammography.⁷ Fortunately, this number has decreased significantly in the years following 1987. In 1994 only 10.1 percent had not received a clinical breast examinations and 20.4 percent had not had a mammogram.² This positive trend continues in recent years as programs that target under-screened populations have expanded.

The two reasons women cite most often for not having a mammogram are that they did not know they needed to have one and that their doctor did not recommend it.¹ Barriers mentioned by physicians to having mammograms include high cost, a belief that the examinations are unnecessary, and a concern about the risk of radiation exposure.² Other factors associated with barriers to mammography include low income, Hispanic ethnicity, low educational attainment, age greater than 65, and residence in a rural area.⁵

Mammography in Iowa

Ninety percent of women surveyed reported **they have had a clinical breast examination by a physician**. The greatest percentage was reported by women between the ages of 40 and 49. Women 70 years and older reported the lowest percentage of women ever having a clinical breast exam.

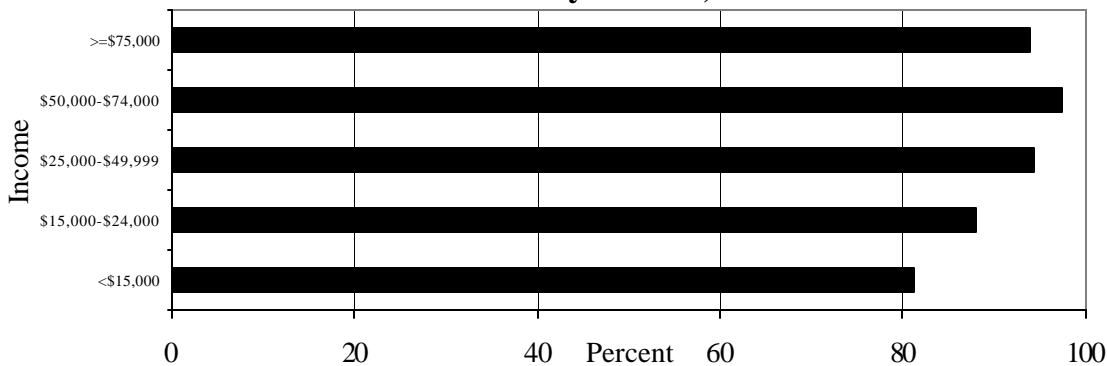
Percentage of Women Reporting Ever Having a Clinical Breast Exam by Age, 1999



Education also appeared to be directly related to the likelihood of ever having a clinical breast exam. Ninety-six percent of college graduates reported having an exam compared to 89.8 percent of high school graduates and 80.2 percent of those who never completed high school.

Over 97 percent of women reporting a household income between \$50,000 and \$74,999 had a breast exam compared to only 76.1 percent of women with an income of less than \$10,000.

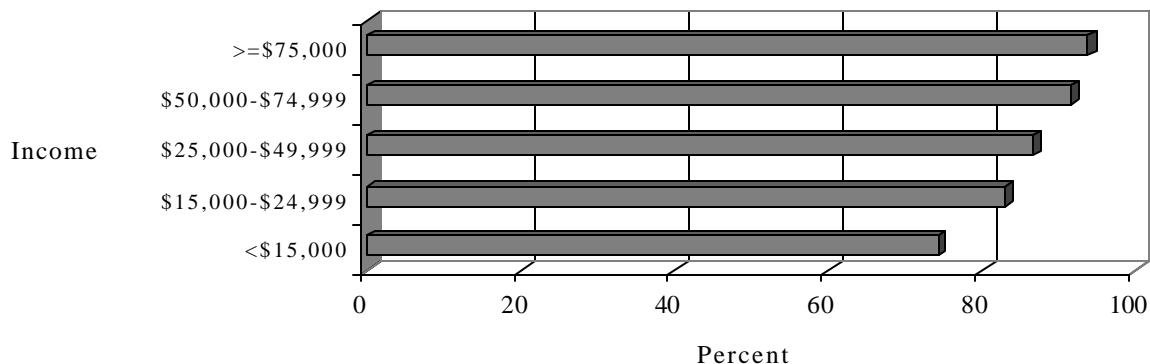
Percentage of Women Reporting Ever Having a Clinical Breast Exam by Income, 1999



Mammograms are recommended for all women ages 40 and older. Almost 85 percent of all Iowa respondents aged 40 and older reported ever having a mammogram. The highest percentage was reported for women between the ages of 60 and 69. This percentage significantly decreases after age 70.

The likelihood of ever having a mammogram was related to both income and education. Respondents reporting an income over \$75,000 or having a college degree had the greatest percentage of women getting mammograms.

**Percentage of Women Reporting Ever Having a Mammogram,
Ages 40 and Older by Income, 1999**



Comparison With Other States

Iowa ranked 28th of all 50 states in the percentage of women 40 and over who had ever had a mammogram. The national median was 86.2 percent, while Iowa reported 86.1 percent of adult women in this category having had a mammogram. The national median percentage of women over 50 who had a mammogram in the last two years was 75.8 percent, Iowa reported 74.5 percent.

BIBLIOGRAPHY FOR MAMMOGRAPHY

1. American Cancer Society. Survey of Physicians' Attitudes and Practices in Early Cancer Detection. *CA - A Cancer Journal for Clinicians* 35:197-213. 1985.
2. Calle E. E., Flanders W. D., Thum M.J., Martin L. M.: Demographic Predictors of Mammography and Pap Smear Screening in U.S. Women. *American Journal of Public Health* 83, 53-60. 1993.
3. *Cancer Facts and Figures 1988*.: American Cancer Society, Atlanta. 1988.
4. *Cancer Facts and Figures 2000*.: American Cancer Society, Atlanta. 2000.
5. Centers for Disease Control and Prevention, Office of Surveillance and Analysis, National Center for Chronic Disease Prevention and Health Promotion, Behavioral Surveillance Branch. *1994 BRFSS Summary Prevalence Report*, Atlanta. January, 1995.
6. Iowa Department of Public Health. *Healthy Iowans 2010: Iowa's Health Agenda for the New Millennium*. Des Moines, Iowa. January 2000.

PAP SMEARS

Background

One hundred and twenty to 150 Iowa women were diagnosed with cervical cancer annually during the past 10 years. Of those, 40 to 45 die each year.⁸ Although 90 percent of women with localized cervical cancer survive after five years, only about 40 percent of those diagnosed with advanced disease do so.

Although all sexually active women are at risk for cervical cancer, the disease is more common among women of low socioeconomic status, those with a history of multiple sexual partners and those who began having sexual intercourse at an early age.^{3,4,10}

The principal screening test for cervical cancer is the Papanicolaou (Pap) smear. Early detection through Pap smears can dramatically lower the incidence of invasive disease and can nearly eliminate deaths from cervical cancer.^{1,2,5}

It has been suggested that Pap smear programs need to reach more older, high-risk women to be maximally effective in decreasing the morbidity and mortality of cervical cancer.⁶

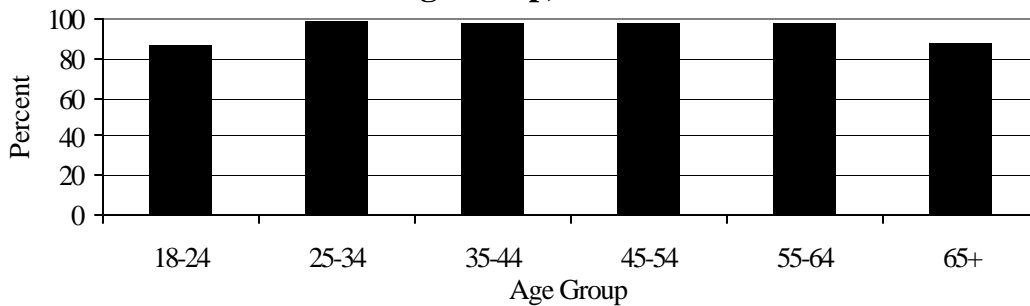
Educational programs need to target unscreened women who don't get tested because they don't realize its importance, continually put off having it done, or women whose medical care provider does not suggest the procedure.

The American Cancer Society recommends annual Pap tests starting at age 18 or with the onset of sexual activity. At the discretion of the woman's physician, less frequent exams may be necessary after three consecutive normal exams.

Pap Smears in Iowa

Ninety-four percent of female respondents reported **ever having a Pap Smear test**. Over 93 percent of women who ever had a Pap smear reported having it as part of their routine checkup. Reported rates ranged from 85.7 percent for women over 70 to 98.3 percent for women between the ages of 50 and 59.

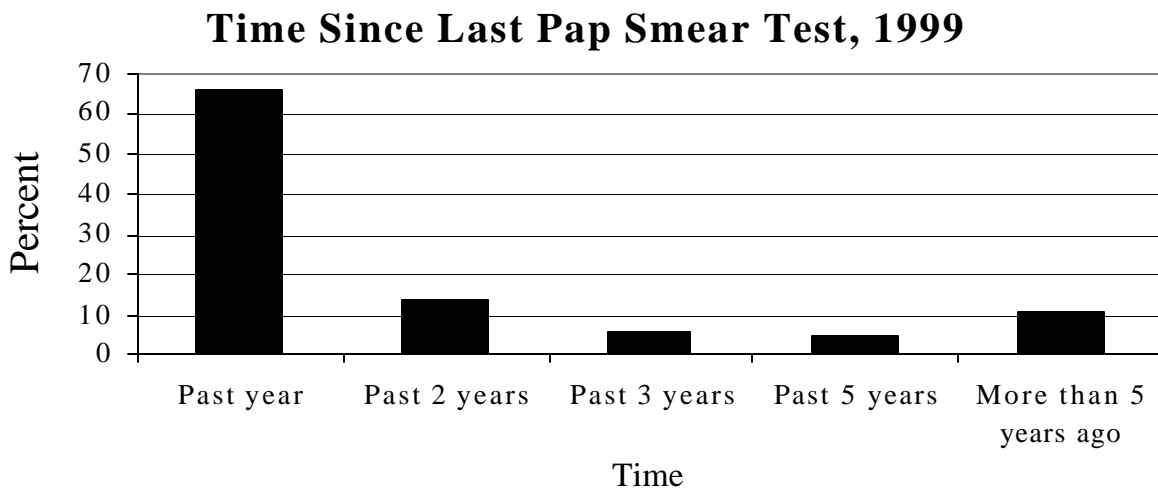
Percentage of Women Reporting Ever Having a Pap Smear by Age Group, 1999



Small differences were observed among women reporting various income levels. Those with less than a high school education were less likely to ever have a Pap smear than women reporting higher educational levels. Approximately 83 percent of women with some high school education reported ever having a Pap smear compared to 95.4 percent of those with a high school degree.

When asked why their last Pap smear was done, 93.5 percent of the respondents reported it was part of a routine exam. The greatest percentage of women reporting having their last Pap smear as part of a routine exam were ages 65 and older (3.5 percent). Approximately 6.4 percent reported having a current or previous problem as the reason for their Pap smear. Respondents between the ages of 18 and 39 were most likely to respond that their last Pap smear was done to check a current or previous problem (8.8 percent).

Although many respondents reported having a Pap smear at one time in their lives, about 15 percent reported that they had their last Pap smear more than three years ago.



To separate respondents not at risk for uterine cancer, respondents were asked if they had a hysterectomy (removal of the uterus). About 21.3 percent of women surveyed in 1999 responded “yes.” The largest percentage of respondents were ages 60-64 (44.7 percent) and ages 65+ (44.0 percent).

Comparison With Other States

The national median for women who had ever had a Pap smear was 95.1 percent, compared to 93.3 percent in Iowa. A similar percentage of women reporting a Pap smear during the past three years was observed. Iowa’s was 85.3 percent compared to the national median of 86.2%.

BIBLIOGRAPHY FOR PAP SMEARS

1. Aristizabal N, Cuello C, Correa P, et al.: The Impact of Vaginal Cytology on Cervical Cancer Risks in Cali, Colombia. *International Journal of Cancer*. 34, 5-9. 1984.
2. Berrino F, Gatta G, d'Alto M et al.: Efficacy of Screening in Preventing Invasive Cervical Cancer: A Case-Control Study in Milan, Italy. *IARC Science Publication 76*, International Agency for Research on Cancer, 111-123. 1986.
3. Brinton LA, Tashima KT, Lehman HF, et al.: Epidemiology of Cervical Cancer by Cell Type. *Cancer Research*. 47, 1706-1711. 1987.
4. Cervical Cancer Screening: The Pap Smear. Summary of an NIH consensus statement. *British Medical Journal*. 281, 1264-1266. 1980.
5. La Vecchia C, Franceschi S, Decarli A, et al.: "Pap" Smear and the Risk of Cervical Neoplasia: Quantitative Estimates From a Case-Control Study. *Lancet*. 2, 779-782. 1984.
6. Mandelblatt, J.S., Fahs M. C.: The Cost-Effectiveness of Cervical Cancer Screening for Low-Income Elderly Women. *Journal of the American Medical Association*. 259, 2409-2413. 1988
7. Marlan, L. C., Bernstein A. B. Kessler L. G.: Cervical Cancer Screening: Who Is Not Screened and Why? *American Journal of Public Health*, 81, 885-891. 1991
8. State Health Registry: *1994 Cancer in Iowa*. University of Iowa, Iowa City, Iowa 1994.
9. Suntan Y., Miller AP., Sherman GJ.: Optimizing the Age, Number of Tests, and Test Interval for Cervical Cancer Screening in Canada, *Journal of Epidemiology and Community Health*. 36, 1-10. 1982.
10. Wright VC, Riopelle MA: Age At Time of Intercourse v. Chronological Age as a Basis for Pap Smear Screening. *Canadian Medical Association Journal*. 127, 127-131. 1982.

COLORECTAL CANCER SCREENING

Background

Colorectal cancer (cancer of the colon and rectum) is the second leading cause of cancer-related death in the United States.¹ The American Cancer Society estimates that in 2001, 135,400 people will be diagnosed with colorectal cancer and 56,700 will die of the disease.

Although the exact causes of colorectal cancer are unknown, it appears to be caused by both inherited and lifestyle factors. Genetics may determine a person's susceptibility to the disease, while lifestyle factors, such as diets high in fat and low in fruit and vegetables, smoking, or sedentary lifestyle, may determine which at-risk persons actually go on to develop colorectal cancer.²

Approximately 25 percent of the U.S. population is considered to be at risk for the disease.² Risk factors include:

- Age – Colorectal cancer is most common in persons 50 years and older and the risk increases with age.
- Family History – Those who have family members diagnosed with colorectal cancer or polyps are at high risk for the disease
- Personal History – Persons who have inflammatory bowel diseases are at increased risk.
- Race – African Americans are more likely than whites to be diagnosed at a more advanced disease stage and have lower survival rates.

Prevention and early detection, through screening, are the keys to reducing deaths from colorectal cancer. The disease is *preventable* if precancerous polyps are detected and removed. And if colorectal cancer is found and treated early enough, a person has a 90 percent chance of survival.²

More than 33 percent of deaths from colorectal cancer could be avoided if people over the age of 50 had regular screening.³ Two tests have been shown to be beneficial in screening for the disease:

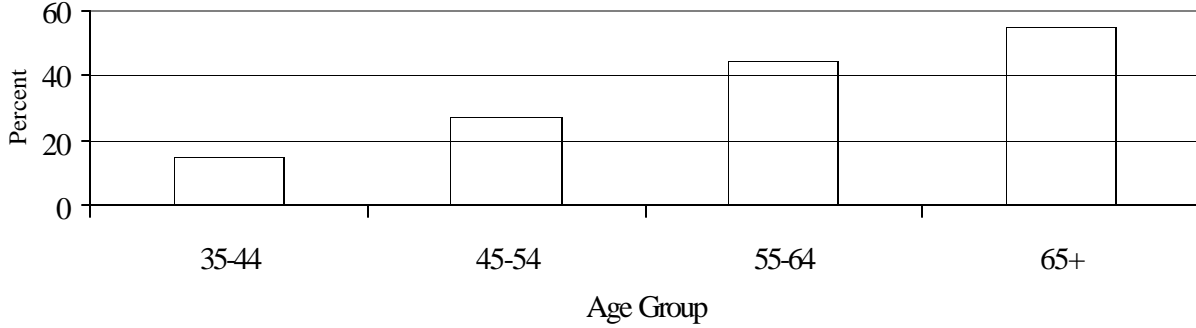
- Fecal occult blood test (FOBT) is a chemical test for blood in a stool sample. A U.S. study showed a 33 percent reduction in colorectal cancer deaths among participants who were offered annual screening by FOBT.¹
- Flexible sigmoidoscopy can detect about 65-75 percent of polyps and 40 –65 percent of colorectal cancers.¹ This screening procedure uses an instrument to visually inspect the wall of the rectum and part of the colon.

Strong scientific evidence shows that when people have either FOBT once a year or flexible sigmoidoscopy every five years, they are less likely to die from colorectal cancer. Two other screening tests, colonoscopy or double-contrast barium enema, are still being evaluated as screening tools.³

Colorectal Cancer Screening in Iowa

In 1999, 38.5 percent of respondents reported **ever using a home blood-stool testing kit**. Use of the kit increased with age.

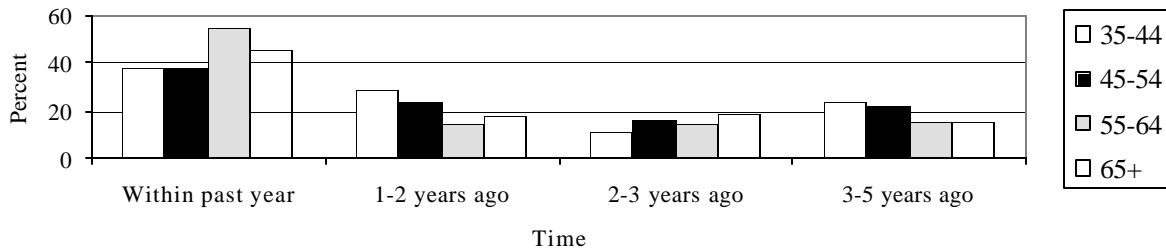
Percentage of Iowans, Ages 35 and Older, Ever Having a Blood Stool Test Using a Home Kit, 1999



Females reported a higher percentage of use than males. Over 45 percent of females but only 30.7 percent of males reported ever using a home blood stool kit. Interestingly, those with lower incomes were more likely to report such use compared to those with higher incomes. Education did not appear to be related.

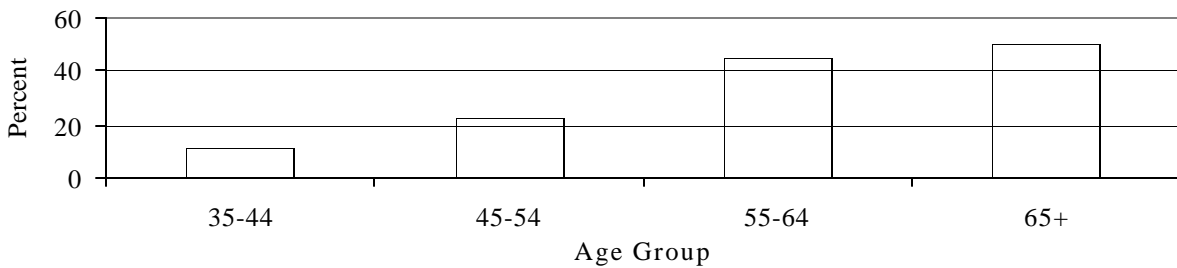
Of respondents who reported ever using a home-blood stool kit, 45.4 percent of respondents reported having the test within the last year. Another 18.7 percent reported using the test one or two years ago.

Time Since Last Home Stool Blood Test for Iowans, Ages 35 and Older, 1999



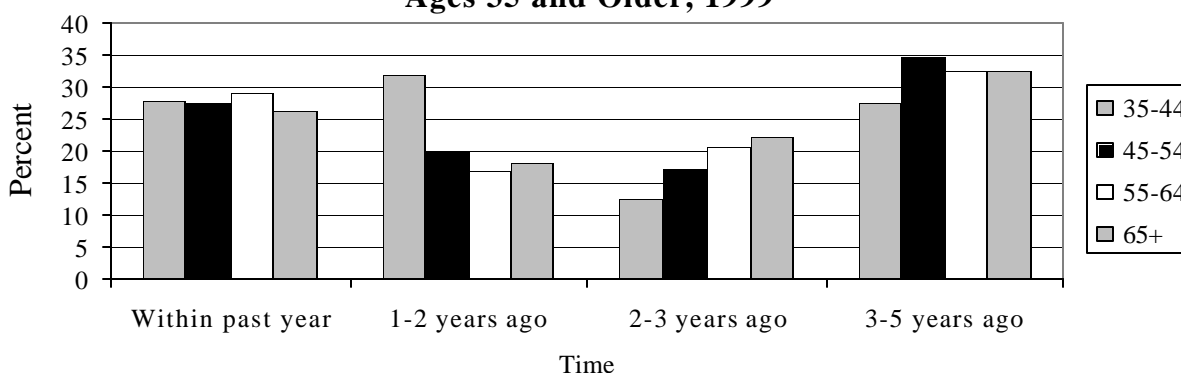
Approximately 35.2 percent of respondents reported **ever having a sigmoidoscopy or colonoscopy screening test**. Greater percentages were reported for older respondents. Although only 11.1 percent of people between the ages of 35 and 44 reported ever having this test, over 50 percent of those 65 and older reported ever having it. Overall, females were more likely than males to have this test. No association with income or education was observed.

Iowans Reporting Ever Having Sigmoidoscopy/Colonoscopy, Ages 35 and Older, 1999



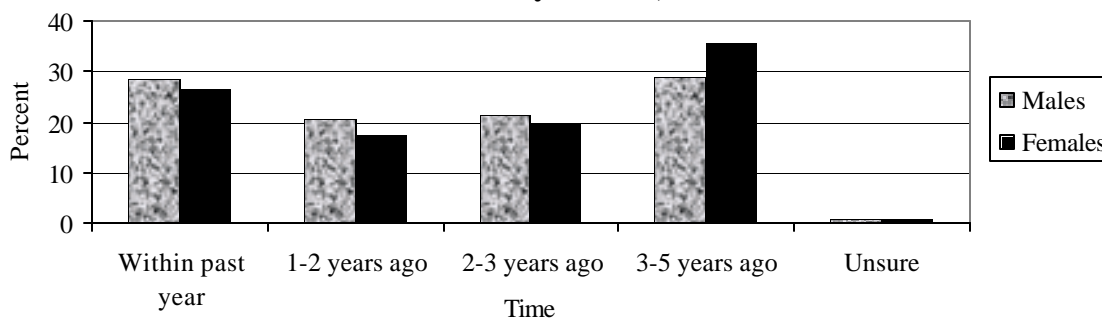
When respondents were asked how long it had been since their last exam, 27.3 percent reported within the last year, 18.9 percent reported one to two years, 20.4 percent reported two to three years, and 32.6 percent reported three to five years.

Time Since Last Colonoscopy/Sigmoidoscopy for Iowans, Ages 35 and Older, 1999



A higher percentage of males than females reported more recent testing. No trends were observed based on reported income; however, people with some high school or less were more likely to report a sigmoidoscopy or colonoscopy within the last year.

Time Since Last Sigmoidoscopy/Colonoscopy for Iowans, Ages 35 and Older by Gender, 1999



BIBLIOGRAPHY FOR COLORECTAL CANCER SREENING

- Centers for Disease Control and Prevention. Colorectal Cancer: The Importance of Prevention and Early Detection, At-A-Glance 2000. <http://www.cdc.gov/cancer/colorctl/colorect.htm>. February 2001.
- American Gastroenterological Association. The Facts About Colorectal Cancer. www.gastro.org/phys-sci/fact-cc.html. 2000
- Centers for Disease Control and Prevention. Colorectal Cancer Health Professionals Facts on Screenings. <http://www.cdc.gov/cancer/screenforlife/pdf/fs-professional.pdf>. July 2000.

HIV/AIDS

Background

As of June 1999, 711,344 Americans had been diagnosed with AIDS. At least 420,201 of them have died. New cases of AIDS decreased 18 percent between 1996 and 1997. From 1997 to 1998, the incidence of AIDS decreased by only 11 percent, suggesting that the decrease in AIDS incidence is slowing.

A slowing in the decrease of AIDS is paralleled by a slowing in the decrease in the number of AIDS deaths. Deaths decreased 42 percent from 1996 to 1997, but by only 20 percent from 1997 to 1998.

The number of persons living with AIDS continues to increase. At the end of 1997, 269,777 persons in the United States were living with AIDS. By the end of 1998, 297,137 persons were living with AIDS, a 10 percent increase. Since reporting began, 1,196 cases of AIDS have been reported in Iowa through December 31, 1999.

The decreases in AIDS incidence and the number of AIDS deaths, first noted in 1996, are thought to be the result of new treatments. Although a substantial decline in AIDS incidence continues, the slowing rate of the decline may indicate that much of the benefit of new therapies has been realized.

Many of the new diagnoses are occurring among African-Americans, women, and people infected heterosexually, with an increase observed among Hispanics. These data must be used to assure targeted prevention for 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.

In Iowa, black, non-Hispanic people constitute only 1.7 percent of the population, but account for 10 percent of all Iowa AIDS cases. The Hispanic population in Iowa is 1.2 percent, but Hispanic AIDS cases are now at 3 percent.

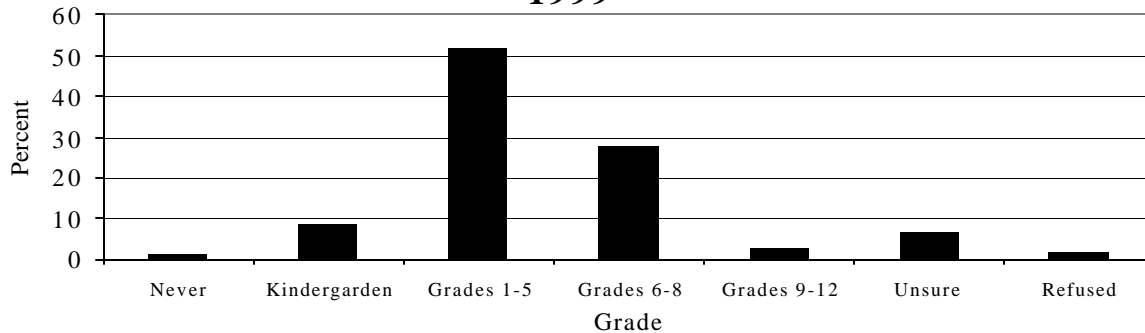
Estimates suggest that 650,000 to 900,000 Americans are now living with HIV, and at least 40,000 new infections occur each year. HIV infection, the precursor to AIDS, is the leading cause of death among people 25 to 44 years old. It accounts for 19 percent of deaths from all causes in this age group in the U.S. AIDS is the tenth leading cause of years of potential life lost before the age of 65 in the United States.

In light of recent advances in HIV diagnostics and therapeutics, the lifetime costs of health care associated with HIV have grown from \$55,000 to \$155,000 or more per person. This represents the amount saved by preventing just one case of HIV.

AIDS in Iowa

When survey respondents were asked in what grade AIDS education should start, 61.6 percent said first to fifth grade and 27.8 percent said grade sixth through eighth. Other responses included 8.7 percent in kindergarten and 2.6 percent between ninth and twelfth grades.

Appropriate Grade to Begin HIV and AIDS Education, 1999

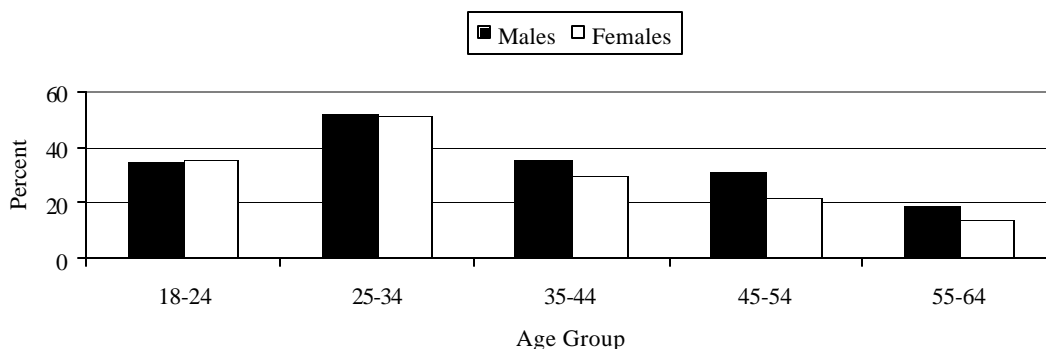


Respondents were asked whether they would **encourage their sexually active teenager to use a condom**. Eighty-nine percent said yes, 1.3 percent said no, and 6.2 percent said they would give other advice. Younger respondents were more likely than older respondent to report they would encourage a sexually active teen to use a condom. Approximately 93.4 percent of those between 18 and 24 years old responded affirmatively compared to 81.4 percent of respondents ages 65 and older.

Respondents between the ages of 18 and 64 were asked about their **chances of getting infected with HIV**. Of all respondents, 2.3 percent reported being at high risk, 5.2 percent medium risk, 28.1 percent low risk, and 62.4 percent reported having no risk. The percentage of respondents reporting no risk increased by age, ranging from 48.5 percent between ages 18 and 24 and 75.4 percent between ages 55 and 64.

Over 32.5 percent of respondents reported **ever being tested for HIV**, with the largest proportion of respondents between the ages of 25 and 34. Only 16.2 percent of those between 55 and 64 reported ever being tested. Almost 35 percent of males, compared to 30.4 percent of females, had been tested.

Percentage of Iowans Reporting Ever Being Tested for HIV by Age and Gender, 1999



When asked to give the **main reason for their last HIV blood test**, respondents gave the following answers:

REASON	PERCENT
Immigration	1.9
At risk for HIV	1.6
Referred by doctor	1.0
Blood donation process	1.0
Occupational exposure	4.0
Illness	3.9
Employment	5.5
To apply for a marriage license	1.4
Health insurance	2.9
Military induction	5.8
Hospitalization	3.1
Routine checkup	9.2
Other	2.7
Life insurance	14.9
Pregnancy test	12.4
To see if infected	28.9
Unknown and/or Refused	0.2

Each of the respondents who indicated they had received an AIDS blood test was asked the **place where the test was administered**. Respondents gave the following answers:

LOCATION OF LAST HIV TEST	
	PERCENT
AIDS clinic or test site	0.8
Immigration site	0.7
Blood bank, plasma center, or Red Cross	0.5
Other	3.7
Company/industry clinic	3.4
Other public clinic	1.4
Prenatal Clinic	1.9
Community health clinic	7.1
Insurance company clinic	3.6
Health department	7.5
Family planning clinic	2.6
Military site	5.9
At home, nurse, or health worker	10.7
Hospital, emergency room, or outpatient clinic	19.3
In jail or prison	0.1
STD clinic	0.3

Respondents who had an HIV blood test were asked whether they received the results. Almost 87 percent reported receiving the results, while 12.3 percent did not. One percent was unsure. Of respondents who received the results, only 35.2 percent indicated they received counseling.

Comparison With Other States

The percentage of Iowa respondents who said they would encourage a sexually active teenager to use condoms was higher (92.3 percent) than the nationwide median (89.7 percent). In addition, Iowa had a lower percentage of respondents not ever having their blood tested for AIDS. A total of 66.1 percent of Iowa respondents reported they were never tested for HIV, compared to 57.1 percent of respondents nationwide.

BIBLIOGRAPHY FOR AIDS

1. Centers for Disease Control and Prevention. *HIV/AIDS Surveillance*, July, 1999.
2. Centers for Disease Control and Prevention. Years of Potential Life Lost Before Age 65 - United States, 1987. *Morbidity and Mortality Weekly Report*, 38(2):27-29. 1989.
3. Iowa Department of Public Health: *Surveillance Report*, January 2000

QUALITY OF LIFE AND DISABILITY

Background

Quality of life is a person's satisfaction or happiness with life in areas he or she considers important.¹ Quality of life is also known as life satisfaction, subjective well being, overall quality of life, or global quality of life. It is a broad concept that includes many dimensions of life that contribute to its richness, pleasure, and pain. One such dimension is health (physical and mental well-being).¹ But many other areas play a role, such as relationships; social, community and civic activities; personal development; fulfillment; and recreation.¹

One's assessment of quality of life involves considerations of both how important a particular area of life is for that person, and how satisfied the person is with it. Most of the questions asked in this survey involved just the latter consideration, but are related to concepts that are generally important to most people.

The World Health Organization's *International Classification of Impairments, Disabilities, and Handicaps*, defines disability as "any restriction (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being." Impairment is defined as "any loss or abnormality of psychological, physiological, or anatomical structure or function."³

The Current Population Survey (CPS) asks people whether they have a [work disability](#) (a condition that limits the kind or amount of work they can do) or a [severe work disability](#) (a condition preventing them from working at all). According to this definition, 17.2 million people, or 9.9 percent of the 1998 working-age U.S. population (16-64 years old) had a disability that prevented or limited work.⁴

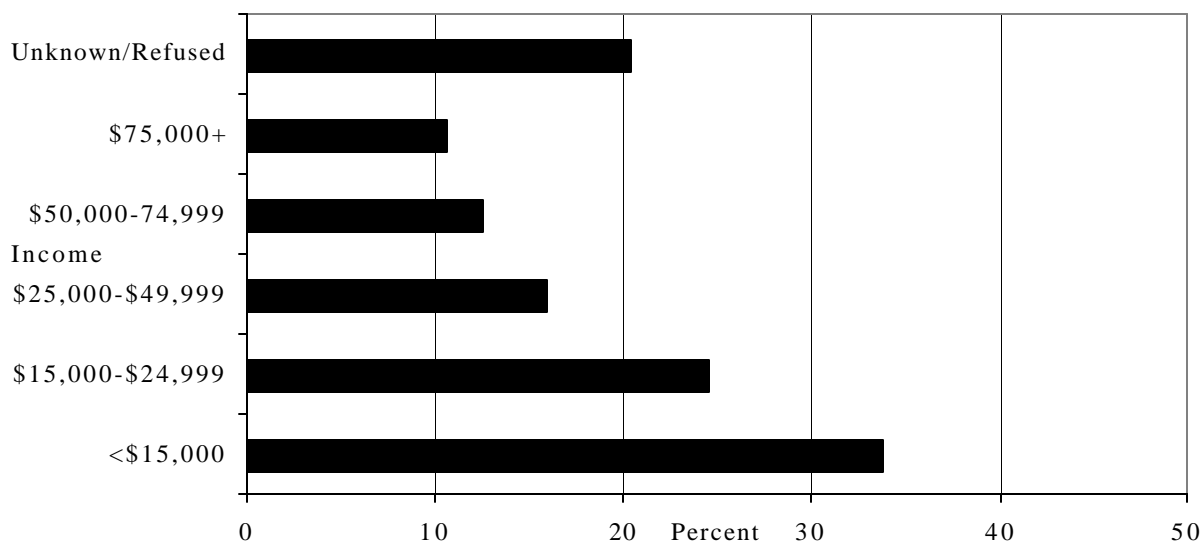
In 1994, approximately 7.4 million Americans used Assistive Technology Devices (ATDs) to accommodate mobility impairments.²

The percent of non-institutionalized persons reporting disability increases with age for every level of disability severity. In 1991, the total proportion of disabled was nearly twice as high among women as among men within each age group. Approximately 15 percent of women 45 to 64 years of age reported some disability. This proportion increased to 24 percent and 41 percent for women aged 65 to 74 and 75 years of age and over, respectively.

Disability in Iowa

In 1999, 18.3 percent responded "yes" to being **limited in any way in activities due to an impairment or health problem**. Females were more likely to report being limited in their activities (18.9 percent) than male respondents (17.5 percent) and those age 65 and older were more likely to report being limited in their activities than younger respondents. People with less than a high school education (25.3 percent) and incomes less than \$15,000 (33.9 percent) also reported in higher percentages.

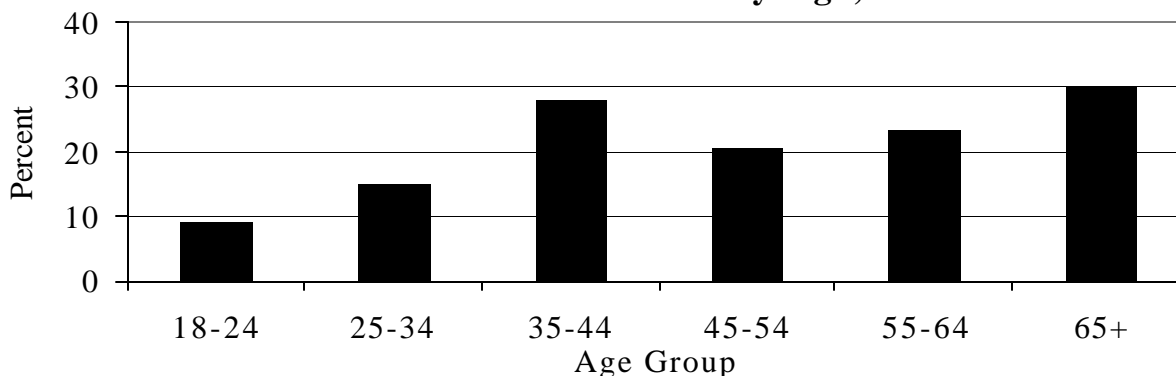
**Self-Reported Limitations Due to an Impairment or Health Problem
by Income, 1999**



The **types of major impairment or health problem most commonly listed** by people who are limited in activities were back and neck problems (19.3 percent), arthritis or rheumatism (13.6 percent), fractures and/or bone or joint injuries (14.0 percent), lung or breathing problems (10.5 percent), and heart problems (7.0 percent). Rates of arthritis or rheumatism were higher for women (17.4 percent) than men (8.7 percent) and for those who were age 65 and older (21.6 percent) than younger respondents. Fractures and/or bone or joint injuries were more prevalent in men (17.1 percent) than women (11.5 percent).

Of persons limited in their activities, 6.9 percent reported **needing the help of others with their personal care needs**. Females (8.1 percent) were more likely than males (5.4 percent) to report needing assistance. Those individuals between the ages of 35 and 44 years were more likely to need assistance than all other age groups (9.0 percent). Respondents with incomes less than \$15,000 were most likely to need help than other respondents (11.0%). A greater proportion of respondents needed the help of others in **handling their routine needs** (24.1 percent). This need increased with age (ages 65+ = 30.0 percent).

**Iowans Who Are Limited Due to an Impairment or
Health Problem Who Reported Needing Help From
Others For Routine Needs by Age, 1999**



When asked on how many of the past 30 days **pain** made it hard for them to do their usual activities, 29.3 percent of people reported at least one day in the past 30 days. Of these, 29.3 percent said one to two days, 20.1 percent said three to seven days, 7.3 percent said eight to fourteen days, and 28.1 percent indicated fifteen to thirty days.

Fifty percent of people also reported **feeling sad, blue, or depressed** on at least one day of the past 30 days. A total of 43.5 percent of people were sad, blue, or depressed for one to two days. For 27.0 percent, the feeling lasted three to seven days. For 6.2 percent, it lasted for 8 to 14 days, and for 13.3 percent for 15 to 30 days. Women tended to have more sad, blue, or depressed days than men.

Within the past 30 days, 64.9 percent reported **feeling worried, tense, or anxious** for at least one day. Of those respondents, 36 percent reported these feelings one to two days during the past month, 29.9 percent reported three to seven days, 8.2 percent reported eight to fourteen days, and 21.4 percent reported fifteen to thirty days.

Of the respondents asked how many days they **felt they did not get enough rest or sleep**, 70 percent reported not getting enough on at least one day of the past 30. More females tended to feel they did not get enough rest or sleep than males. The number of days without enough rest increased with educational level and decreased steadily with age.

The proportion of people who said they **felt very healthy and full of energy** for 15 to 30 days during the past 30 days was 71.2 percent. People of older age, those with less education, and persons with lower incomes were most likely to report feeling very healthy and full of energy for none of the past 30 days.

BIBLIOGRAPHY FOR QUALITY OF LIFE/DISABILITY

1. Oleson M., Subjectively perceived quality of life. *Image*; 22:187-190. 1990.
2. Vital and Health Statistics Series 10, No.200; www.cdc.gov/nchs/fastats/disable.htm
3. www.cdc.gov/www.infouse.com/disabilitydata

ASTHMA

Background

Asthma, a chronic inflammatory airway disease of the lungs, is now the most common chronic disease of childhood. Prevalence among adults and children has doubled in the last 15 years, with more than 200,000 Iowans experiencing at least one asthmatic episode in the last year. Symptoms of asthma include repeated episodes of wheezing, coughing, and/or shortness of breath.

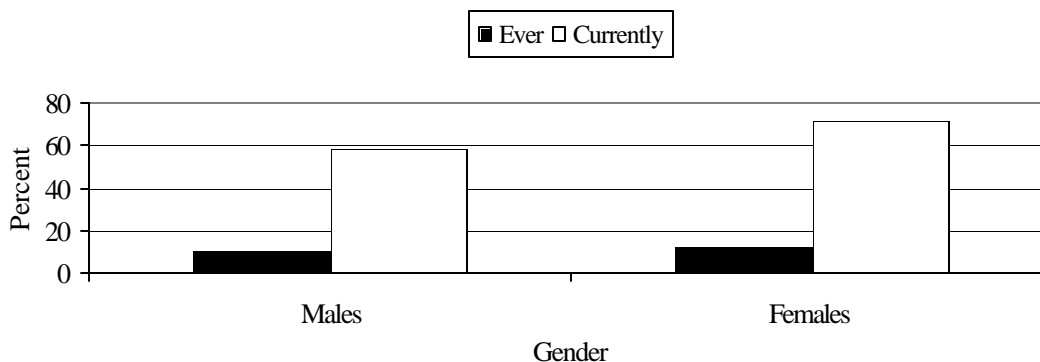
In Iowa, asthma is a leading cause of hospital admission, unscheduled emergency department visits, and physician-office visits. The direct medical costs of asthma, including inpatient and outpatient care and medications, are estimated to be about \$60 million and indirect socio-economic costs are close to \$40 million each year. Based on national data, it is estimated that about 100,000 days of school are missed by Iowa children each year due to asthma and half of all children and a quarter of all adults with asthma miss at least one day of school or work each year.

The causes of asthma are not known for certain but are most likely a combination of genetic and environmental factors. Those risk factors include family history of asthma and allergies, 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. People who develop asthma often become especially sensitive to any exposures to the environmental risk factors.

Asthma in Iowa

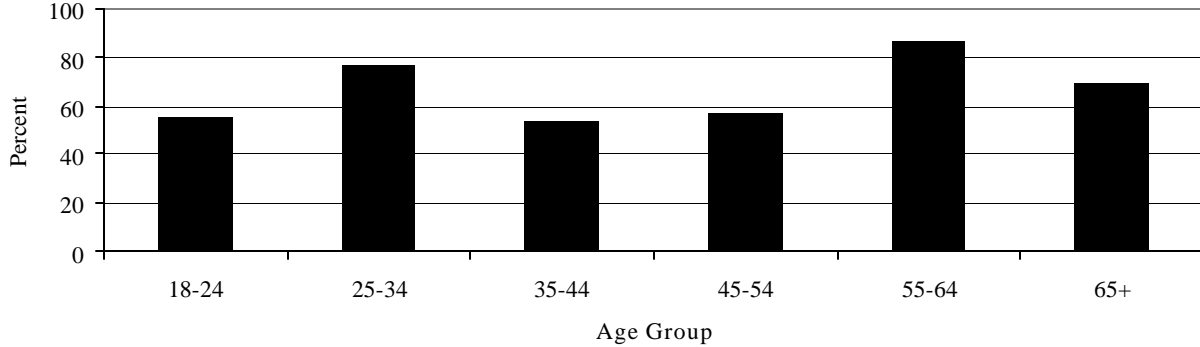
In 1999, 11.3 percent of respondents reported **ever being diagnosed with asthma**. Among these, 65.9 percent currently had asthma, including a greater proportion of females (71.7 percent) than males (58.3 percent).

Percentage of Iowans Who Reported Ever or Currently Having Asthma by Gender, 1999



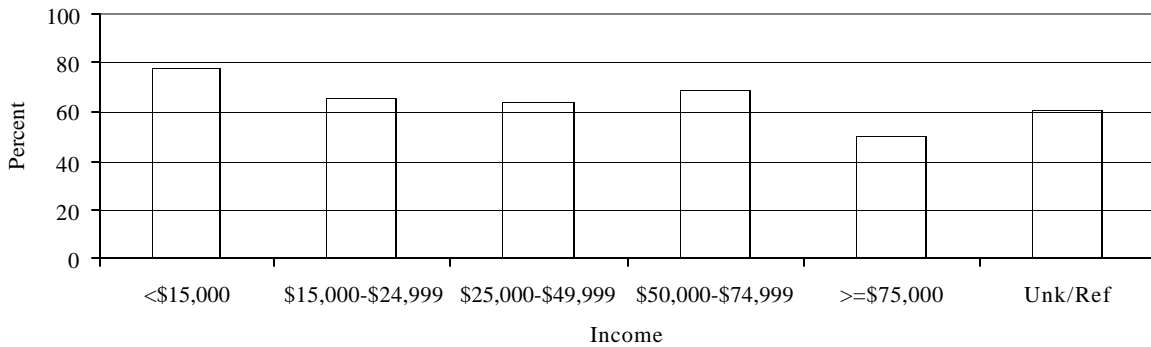
The highest percentage of respondents who currently have asthma were between the ages of 55 and 64, followed by people between ages 25 and 34. The lowest percentage was observed in respondents between ages 35 and 44.

**Of Iowans Who Reported Ever Having Asthma, Percentage
Who Currently Have Asthma by Age, 1999**



People reporting lower incomes were a higher proportion of respondents who currently have asthma. Eighty percent of those with an income of \$15,000 or less have asthma compared to 50.7 percent of respondents with an income of \$75,000 or more.

**Of Iowans Who Reported Ever Having Asthma, Percentage
Who Currently Have Asthma by Income, 1999**



People reporting less than a high school education were the greatest number of respondents who currently have asthma. Approximately 85.7 percent of those with less than a high school degree currently have asthma compared to 65.2 percent of high school graduates, 60.5 percent with some college or technical school, and 63.8 percent of college graduates.

**Of Iowans Who Reported Ever Having Asthma, Percentage
Who Currently Have Asthma by Education, 1999**

