Health Risk Behaviors of Kansans:

Results from 2004 Kansas Behavioral Risk Factor Surveillance System

Kansas BRFSS
Office of Health Promotion
Kansas Department of Health and Environment

Contents

Health Risk Behaviors of Kansans 2004

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BRFSS Overview

The Behavioral Risk Factor Surveillance System (BRFSS) is a random digit dial telephone survey among non-institutionalized adults age 18 years and older. In addition, adult respondents provide limited data on a randomly selected child in the household via surrogate interview. The BRFSS is coordinated and partially funded by the Centers for Disease Control and Prevention and is the largest continuously conducted telephone survey in the world. It is conducted in every state, the District of Columbia, and several United States territories. The first BRFSS survey in Kansas was conducted as a point-in-time survey in 1990, and Kansas has conducted the BRFSS survey annually since 1992.

The survey consists of approximately 130 questions and takes 15 minutes to complete. Survey topics on the 2004 Kansas BRFSS included: health status, health care access, exercise, environmental factors, tobacco use, alcohol consumption, asthma, diabetes, oral health, immunizations, demographics, veteran' status, women's health, prostate cancer screening, colorectal cancer screenings, family planning, disability, HIV/AIDs, firearms, fruits and vegetables, physical activity, hypertension awareness, cholesterol awareness, heart attack and stroke, cardiovascular disease, animal ownership, trust in medical providers, perceived discrimination, depressive disorders, other tobacco products, tobacco tax, and childhood asthma.

The overall goal of the BRFSS is to develop and maintain the capacity for conducting population-based health risk surveys via telephone in Kansas. BRFSS data are used for the following:

- Monitor the leading contributors to morbidity and premature death
- Track health status and assess trends
- Measure knowledge, attitudes, and opinions
- Program planning
    - Needs assessment
    - Development of goals and objectives
    - Identification of target groups
- Policy development
- Evaluation

Data from BRFSS are weighted to account for the complex sample design and non-response bias such that the resulting estimates will be representative of the underlying population as a whole as well as for target subpopulations.

For more information about the Kansas BRFSS, including past questionnaires and data results, please visit: http://www.kdheks.gov/brfss/index.html

Leading Health Indicators

Healthy People 2010 is a comprehensive nationwide plan consisting of goals and objectives related to health promotion and disease prevention. In Healthy People 2010, Leading Health Indicators are the major public health concerns and were chosen by Healthy People 2010 based on their relevance to broad public health topics and availability of data to measure their progress.

The Leading Health Indicators are:

- Physical Activity
- Overweight and Obesity
- Tobacco Use
- Substance Abuse
- Responsible Sexual Behavior
- Mental Health
- Injury and Violence
- Environmental Quality
- Immunization
- Access to Health Care

This document contains data on the Leading Health Indicators which were measurable using 2004 Kansas Behavioral Risk Factor Surveillance (BRFSS) data.

For more information about Healthy People 2010, please visit http://www.healthypeople.gov/

For information about Healthy Kansans 2010, please visit http://www.healthykansans2010.org/

For more information about Leading Health Indicators, please visit http://www.healthypeople.gov/LHI/

PHYSICAL ACTIVITY

Regular physical activity throughout the lifespan is important in preventing premature death. Regular physical activity can decrease the risk of numerous chronic diseases and conditions such as hypertension, diabetes, and certain types of arthritis. Regular physical activity also improves flexibility and joint mobility, decreases body fat, and aids in weight loss and weight maintenance (1).

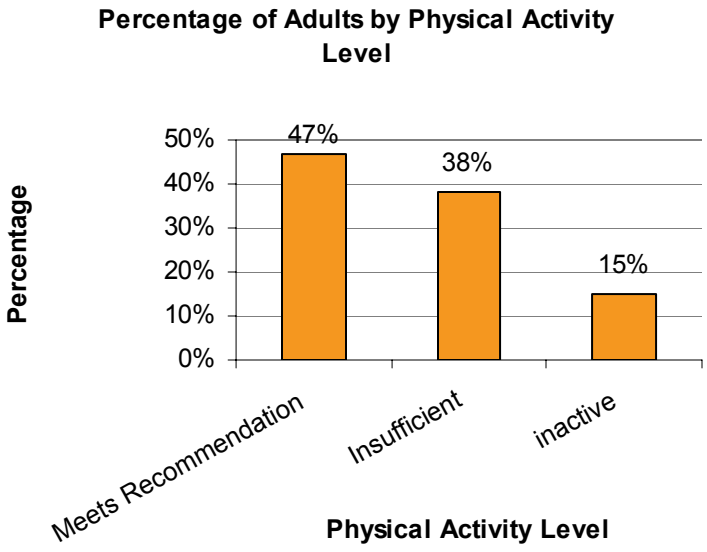
Types of Physical Activity

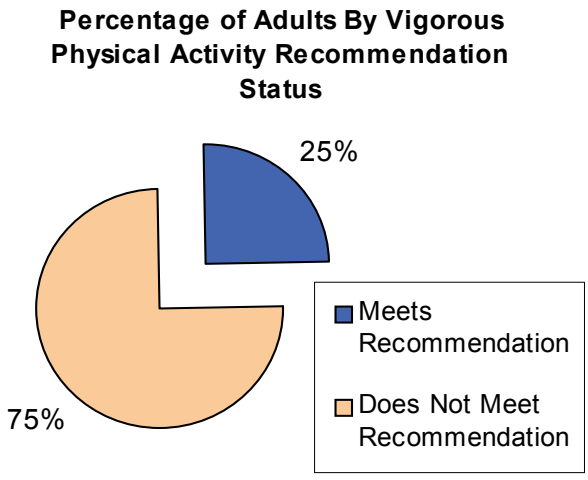
- **Moderate** physical activity involves small increases in heart rate and breathing rate, e.g., walking, gardening, vacuuming, etc.
- **Vigorous** physical activity involves large increases in heart and breathing rate, e.g., running, aerobics, etc.
- **Leisure time** physical activity is defined as physical activities or exercises, other than their regular job, such as running, calisthenics, golf, gardening, or walking for exercise. Leisure time physical activity can be a combination of moderate and/or vigorous.

Recommendations for physical activity have evolved over the years. The first recommendations emphasized vigorous physical activity. Current recommendations emphasize not only vigorous physical activity, but also moderate physical activity and the integration of the two into an individual's lifestyle (2).

Physical Activity Levels

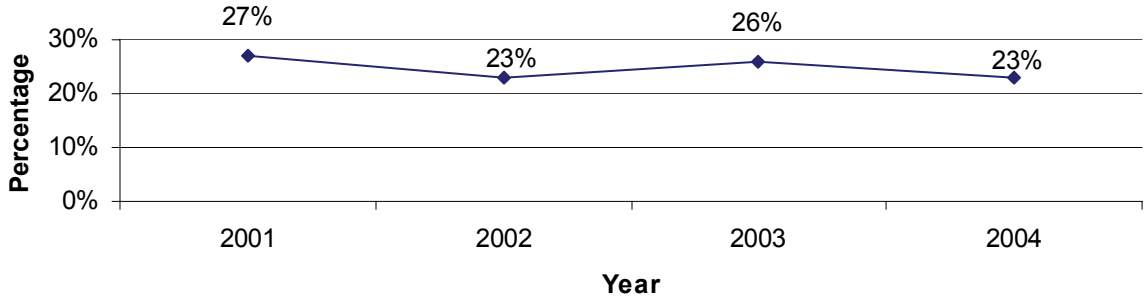
- **Recommendation:** Moderate physical activity 30 minutes or more per day, 5 or more days per week OR vigorous physical activity 20 minutes or more per day, 3 or more days per week.
- **Insufficient:** Some activity but not enough to meet the recommendation.
- **Inactive:** No physical activity.





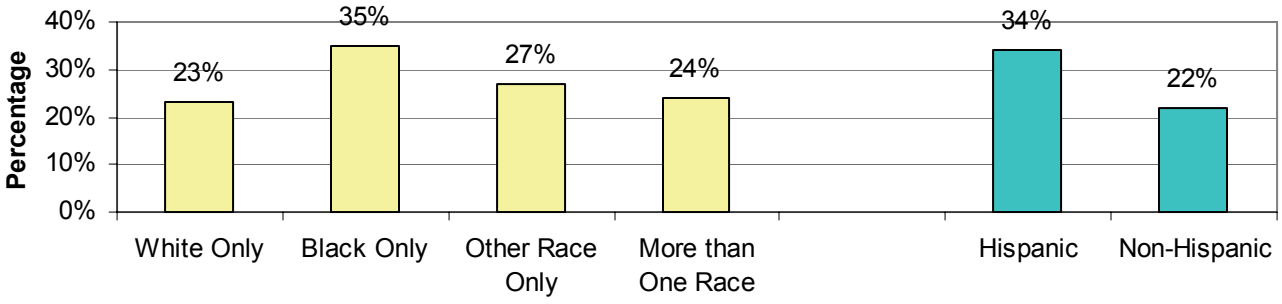
- Less than half of the adults (47%) meet the recommendation for physical activity.
- 25% of adults meet the recommendation for vigorous physical activity.
- 23% of adults do not participate in leisure time physical activity.

Percentage of Adults Not Participanting in Leisure time Physical Activity 2001-2004



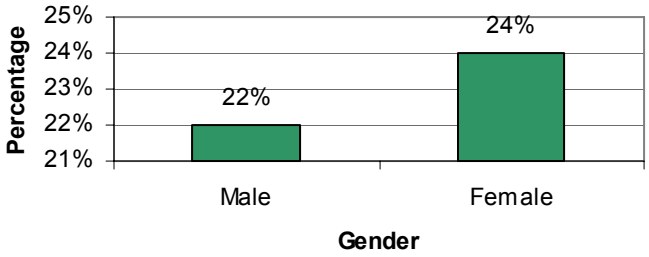
Leisure Time Physical Activity Among Certain Subpopulations

Percentage of Adults Who Do Not Participate in Leisure Time Physical Activity by Race and Ethnicity



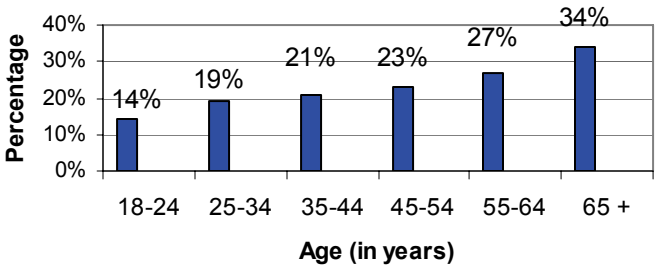
- 35% of black or African American adults do not participate in leisure time physical activity.
- 34% of Hispanic adults do not participate in leisure time physical activity.

Percentage of Adults Who Do Not Participate in Leisure Time Physical Activity by Gender



- 24% of adult females do not participate in leisure time physical activity.

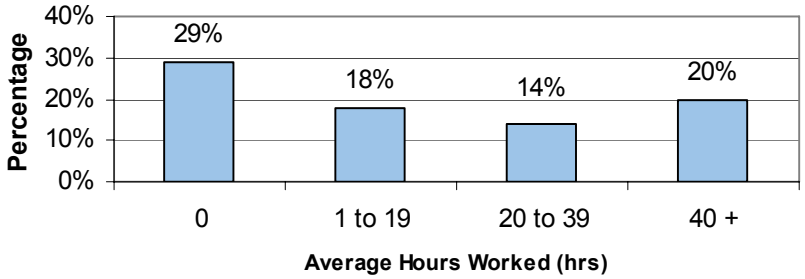
Percentage of Adults Who Do Not Participate in Leisure Time Physical Activity by Age



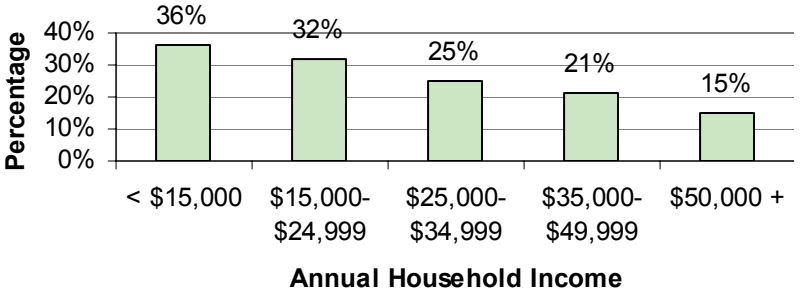
- Among adults ages 18-24 years, 14% do not participate in leisure time physical activity.
- Among adults ages 65 years and older, 34% do not participate in leisure time physical

Percentage of Adults Who Do Not Participate in Leisure Time Physical Activity by Average Hours Worked

- Among adults who reported not working any hours per week at a job or business, 29% do not participate in leisure time physical activity.



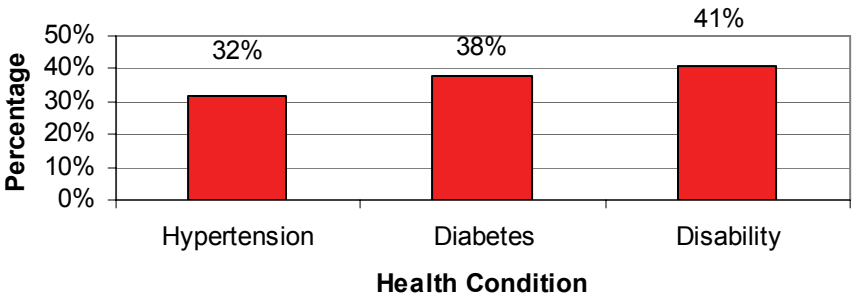
Percentage of Adults Who Do Not Participate in Leisure Time Physical Activity by Annual Household Income



- More adults (36%) with an annual household income of less than $15,000 do not participate in leisure time physical activity.

Leisure Time Physical Activity and Health Conditions

Percentage of Adults Who Do Not Participate in Leisure Time Physical Activity by Health Condition



- 41% of adults with a disability do not participate in leisure time physical activity.
- 38% of adults with diabetes do not participate in leisure time physical activity.
- 32% of adults with hypertension do not participate in leisure time physical activity.

OBESITY

Poor diet and physical inactivity, risk factors for obesity, are the second actual leading cause of death in the United States (3). Obesity is a condition that raises the risk of morbidity from hypertension, type 2 diabetes, coronary heart disease, stroke, gallbladder disease, osteoarthritis, sleep apnea, respiratory problems, and certain types of cancers (4). In Kansas, an estimated $657 million per year in medical costs is associated with obesity (5).

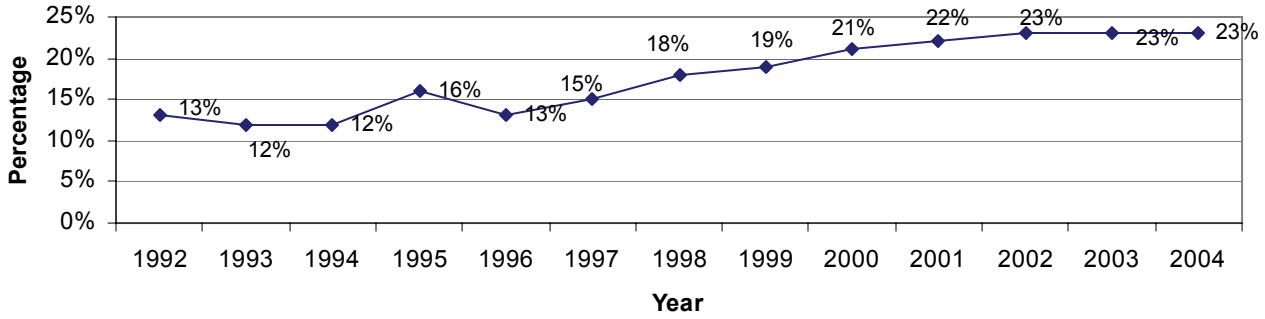
There are many measurements to assess obesity including body mass index (BMI) and waist circumference. BMI is a weight status indicator which measures weight for height in adults and correlates with total body fat content. While BMI is used in population assessment, BMI is not ideal to assess obesity in individuals who are very muscular or who are under 5 feet tall (6).

BMI Classifications:

- **Obese:** BMI greater than or equal to 30 kg/m2
- **Overweight:** BMI 25 to less than 30 kg/m2
- **Normal/Underweight:** BMI less than 25 kg/m2

A BMI calculator is available at http://www.nhlbi.nih.gov/guidelines/obesity/bmi_tbl

Percentage of Adults Who Are Obese, 1992-2004

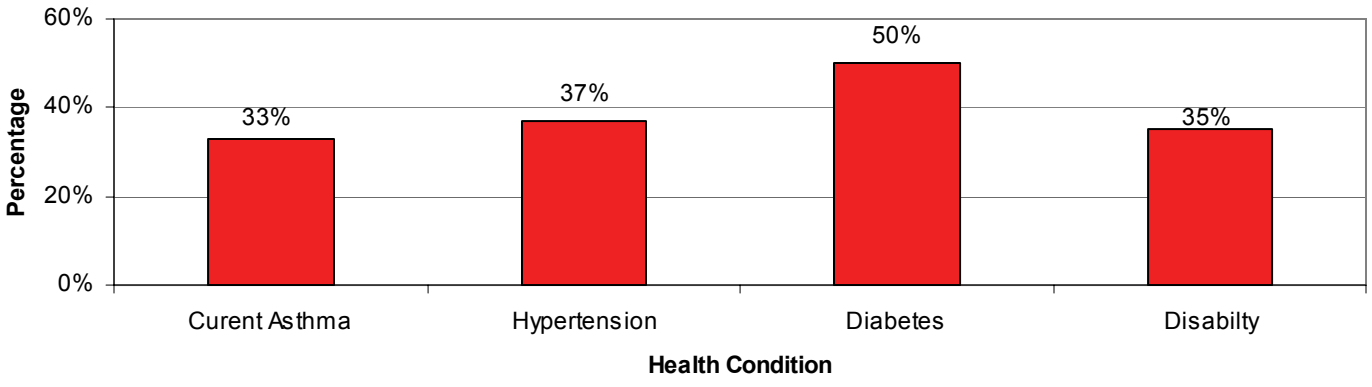


- The prevalence of obesity in Kansas has increased by 77% since 1992.
- In 2004, approximately 1 out of 4 adult Kansans were obese.
- In 2004, approximately 1 out of 3 adult Kansas were overweight (37.5%).

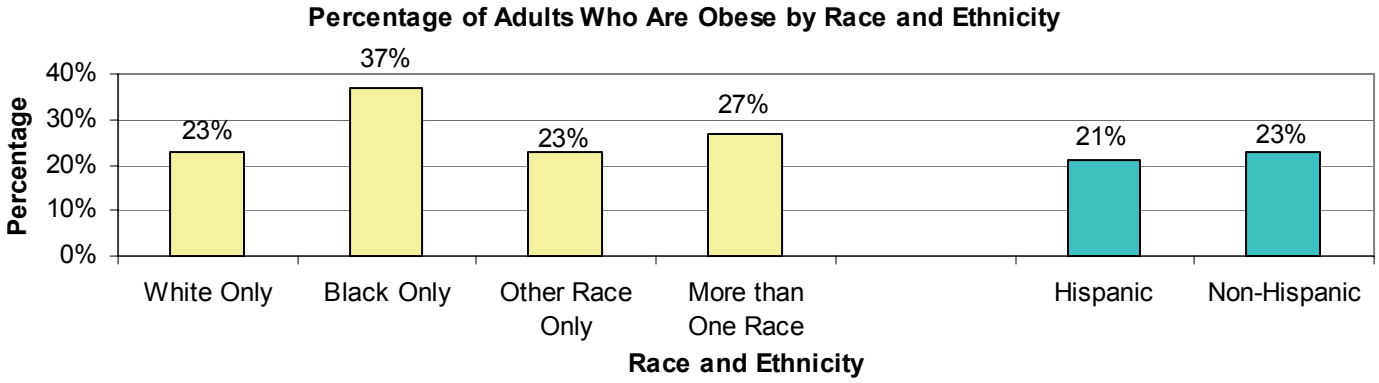
Obesity and Health Conditions

- Among adults with diabetes, 50% are obese.

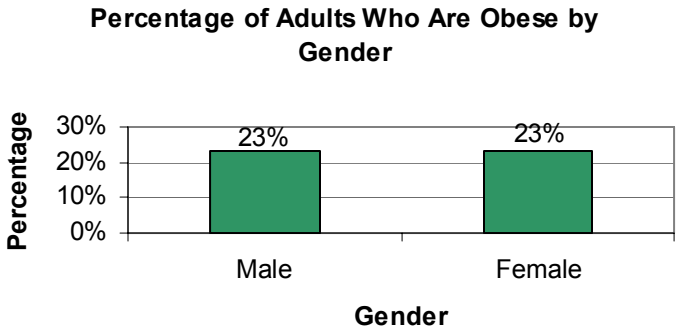
Percentage of Adults Who Are Obese by Health Conditions



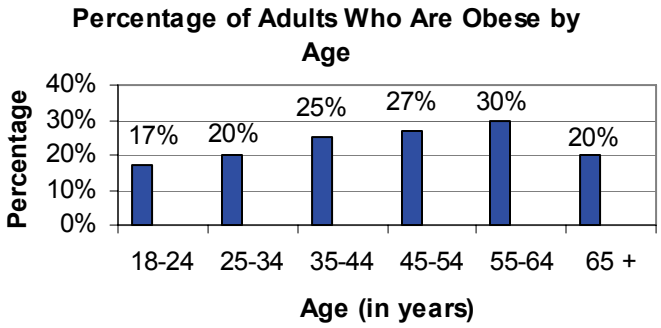
Obesity Among Certain Subpopulations



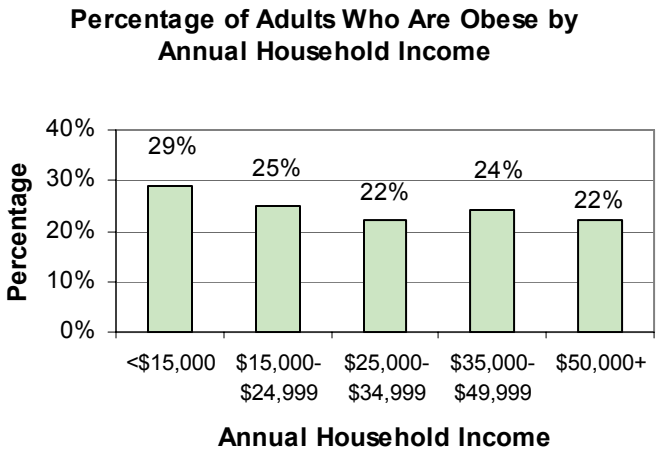
- 37% of black or African American adults are obese (BMI ≥ 30).
- 21% of Hispanic adults and 23% of Non-Hispanic adults are obese.



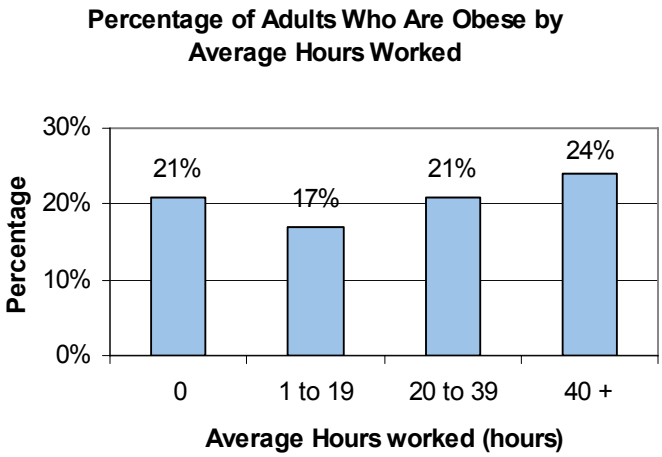
- 23% of adult males and 23% of adult females in Kansas are obese.



- Approximately 3 out of 10 (30%) Kansans ages 55-64 years old are obese.



- Among adults with an annual household income less than $15,000, 29% are obese.



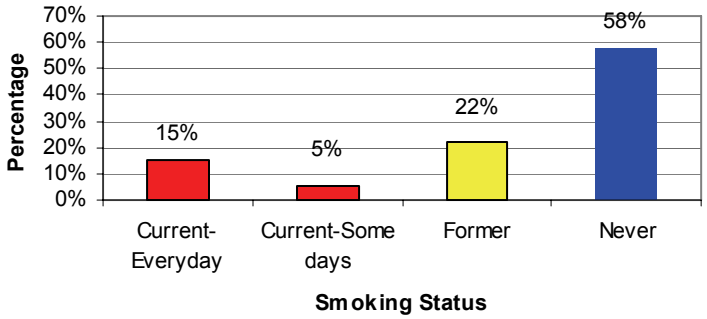
- Among adults who work 40 or more hours per week at a job or business, 24% are obese.

TOBACCO USE

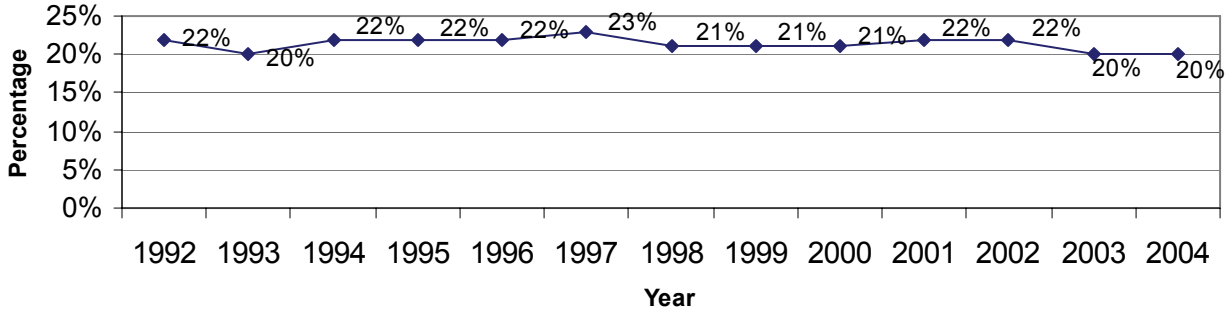
In 2000, the leading cause of preventable death in the United States was tobacco, resulting in an estimated 430,000 deaths per year (3). Smoking may complicate health problems and is a risk factor for numerous health problems including coronary heart disease, peripheral vascular disease, stroke, emphysema, chronic bronchitis, low birth weight babies, and cancer of the lung, larynx, mouth, esophagus, and bladder (7). In Kansas, an estimated $724 million per year in medical costs is associated with smoking (8).

- In 2004, 20% of adult Kansans currently smoke cigarettes (currently smoke cigarettes every day or some days).

Percentage of Adults by Smoking Status



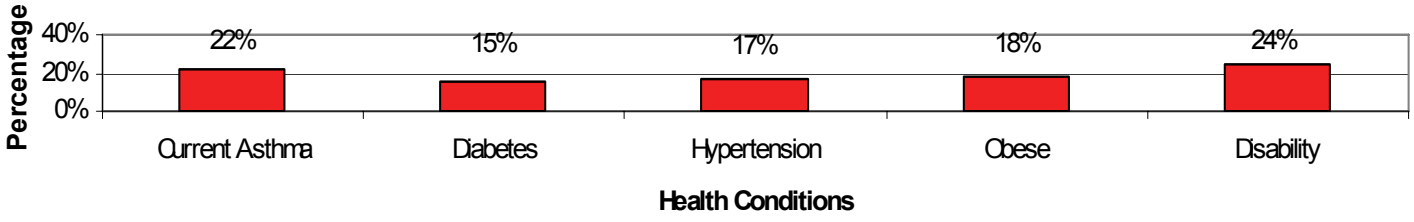
Current Smoking Trend, 1992-2004



Current Smoking and Health Conditions

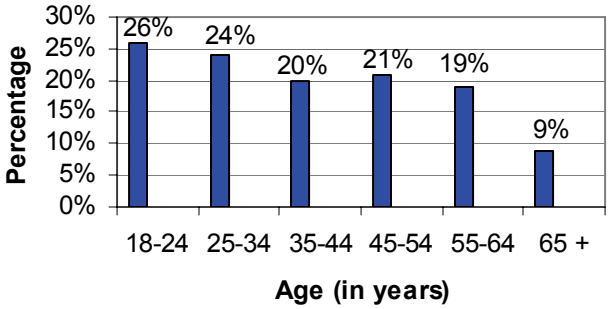
- Among Kansans with current asthma, 22% currently smoke cigarettes.

Percentage of Current Cigarettes Smokers by Health Conditions

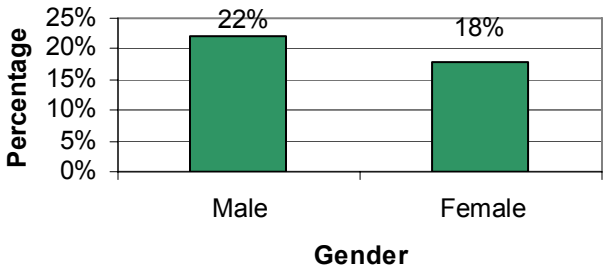


Current Smoking Among Certain Subpopulations

Percentage of Current Smokers by Age

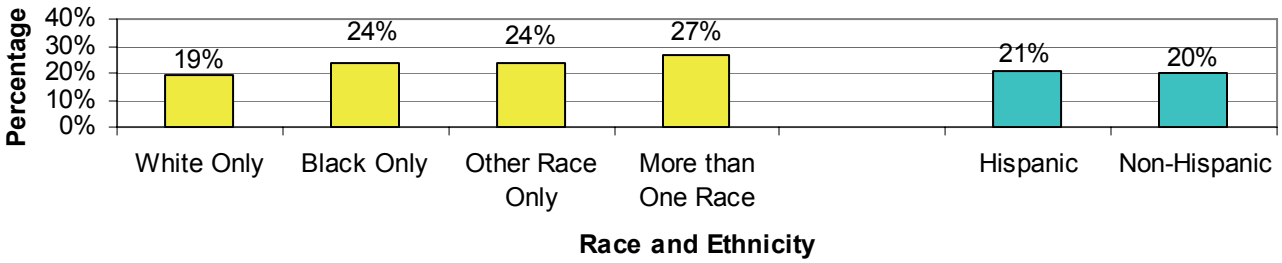


Percentage of Current Smokers by Gender



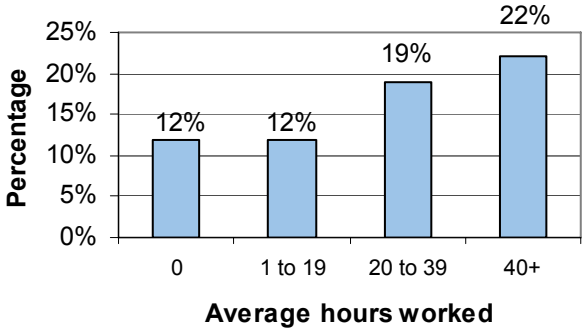
- Among Kansans ages 18-24 years, 26% currently smoke cigarettes.
- 22% of adult males and 18% of adult females currently smoke cigarettes.

Percentage of Current Smokers by Race and Ethnicity

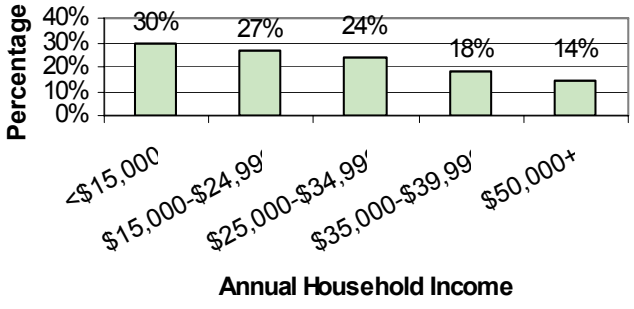


- Among adult Kansans who are multi-racial, 27% currently smoke cigarettes.
- 21% of adult Hispanics and 20% of adult Non-Hispanics currently smoke cigarettes.

Percentage of Current Smokers by Average Hours Worked



Percentage of Current Smokers by Annual Household Income



- Among adults who currently work 40 or more hours per week at a job or business, 22% currently smoke cigarettes.
- Among adults with an annual household income less than $15,000, 30% currently smoke cigarettes.

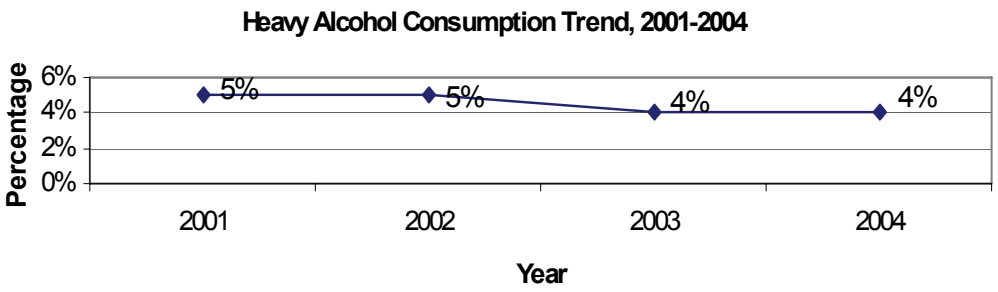
SUBSTANCE ABUSE: ALCOHOL

Alcohol is the third leading preventable cause of death in the United States and is estimated to be responsible for approximately 85,000 deaths each year (3). In the United States, over $100 billion each year is associated with alcohol abuse; 70% of these costs are in the form of lost productivity and 10% for medical treatment (9). Types of alcohol consumption include acute (binge) and chronic (heavy).

Heavy Alcohol Consumption

Heavy alcohol consumption is defined as an average of two or more drinks per day for men and one or more drinks per day for women during the past 30 days.

Heavy drinking is associated with a number of chronic health conditions, including chronic liver disease and cirrhosis, gastrointestinal cancers, heart disease, stroke, pancreatitis, depression, and a variety of social problems (10).



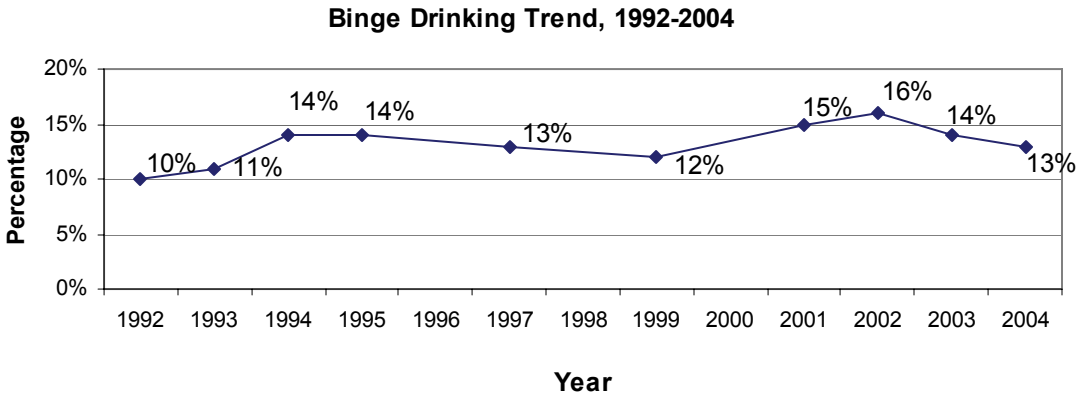
- In 2004, 4% of Kansas adults reported heavy consumption of alcohol in the past 30 days.

Binge Drinking

Binge drinking is defined as five or more drinks on an occasion.

Binge drinking is associated with a number of adverse health effects including: motor vehicle crashes, falls, burns, drownings, hypothermia, homicide, suicide, child abuse, domestic violence, sudden infant death syndrome, alcohol poisoning, hypertension; myocardial infarction, gastritis, Pancreatitis, sexually transmitted diseases, meningitis, and poor control of diabetes (10).

In 2001, binge drinking rates were highest among those aged 18 to 25 years; however, 70% of binge drinking episodes occurred among those aged 26 years and older (10).

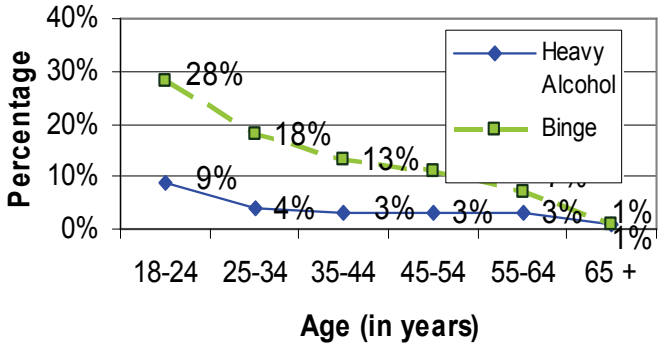


- In 2004, 13% of Kansas adults reported consuming five or more drinks on an occasion in the past 30 days.

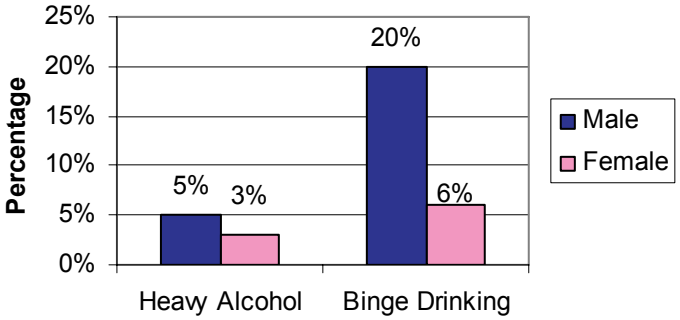
Heavy Alcohol Consumption and Binge Drinking Among Certain Subpopulations

- 9% of 18-24 year old Kansans reported heavy alcohol consumption during the past 30 days.
- Approximately 1 out of 4 (28%) Kansans ages 18-24 years reported binge drinking on an occasion in the past 30 days.

Heavy Alcohol Consumption and Binge Drinking by Age

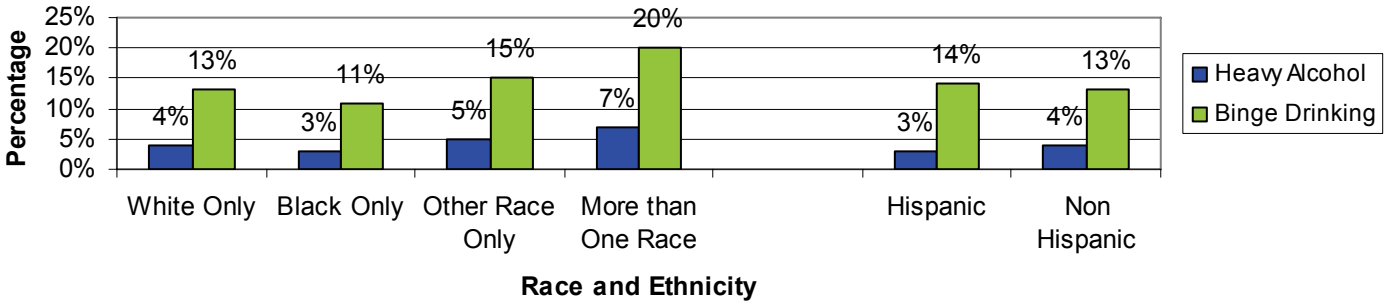


Heavy Alcohol Consumption and Binge Drinking by Sex



- 5% of males ages 18 years and older reported heavy alcohol consumption in the past 30 days.
- 20% of males ages 18 years and older binge drank on an occasion in the past 30 days.

Heavy Alcohol Consumption and Binge Drinking by Race and Ethnicity



- 7% of adults who are multiracial reported heavy alcohol consumption within the past 30 days.
- 20% of adults who are multiracial, binge drank within the past 30 days.

IMMUNIZATIONS

In 2002, influenza and pneumonia were the 7th leading cause of death in the United States, resulting in 65,681 deaths (12). Most of these deaths could have been prevented with proper vaccination. Influenza vaccination is 70-90% effective in preventing illness among healthy adults less than 65 years old. Among healthy adults 65 years and older, the influenza vaccination is 30-40% effective in preventing illness and 85% effective in preventing influenza related death (13).

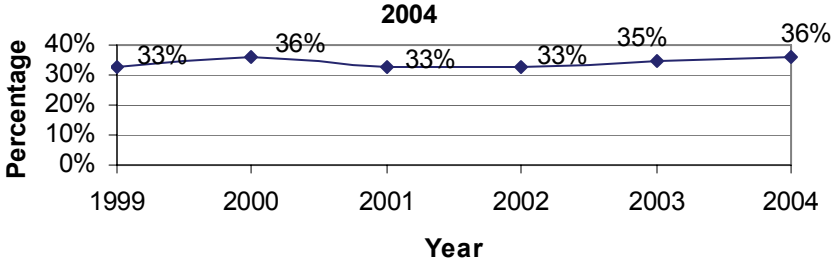
Influenza Vaccination (Also Known as Flu Shot)

It is recommended that the following adult groups receive an influenza vaccination every year:

- Adults ages 50 years and older
- Persons ages 2-64 years with underlying chronic medical conditions such as asthma, diabetes, and heart problems
- Pregnant females
- Adults with children < 6 months in their home
- Residents of nursing homes and other chronic care facilities
- Health care workers who have direct patient contact
- Out of home caregivers

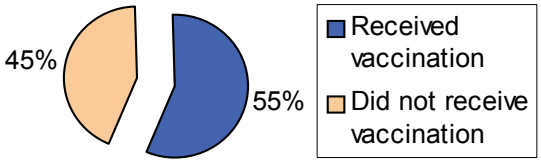
- Influenza recommendations for children can be found at: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr54e713a1.htm

Percentage of Adults Who Reported Having an Influenza Vaccination During the Past 12 Months, 1999-2004



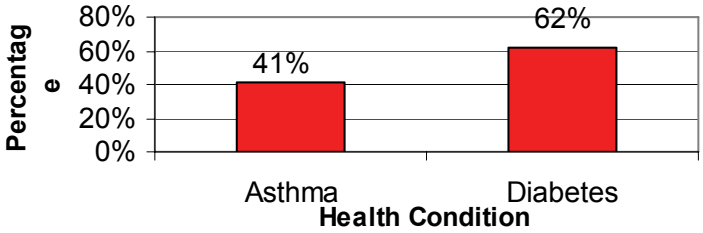
- In 2004, 36% of adults in Kansas received an influenza vaccination within the past 12 months.

Percentage of Adults Ages 50 Years and Older Who Received an Influenza Vaccination During Past 12 Months



- Among adults ages 50 years and older, 55% received an influenza vaccination during the past 12 months.

Percentage of Adults Who Received An Influenza Vaccination in the Past 12 Months by Health Conditions

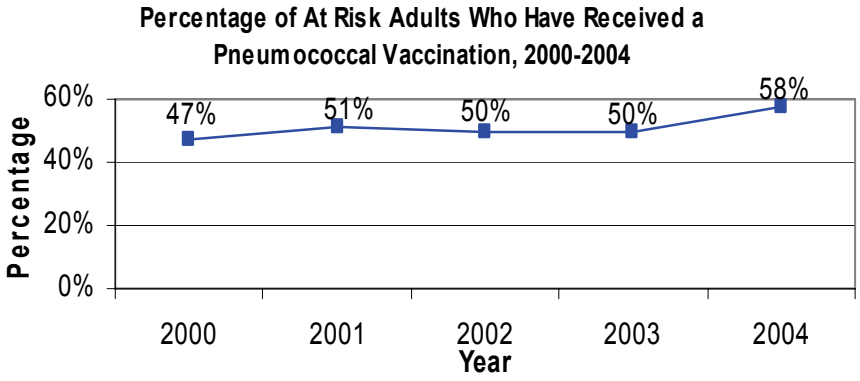


- Among adults with asthma, 41% received an influenza vaccination in the past 12 months.
- Among adults with diabetes, 62% received an influenza vaccination in the past 12 months.

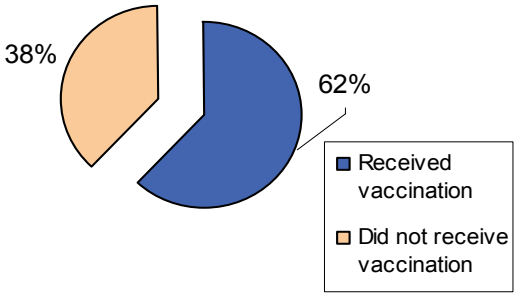
Pneumococcal Vaccination (Also Known As Pneumonia Shot)

It is recommended that the following adult groups receive a pneumococcal vaccination (2):

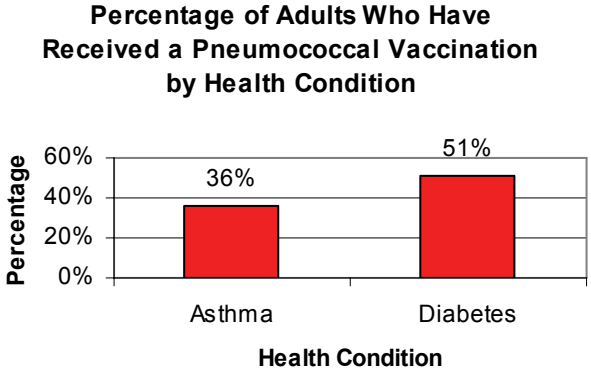
- Adults ages 65 years and older
- Persons ages 2-64 years with underlying chronic medical conditions such as asthma, diabetes, and heart problems
- Persons ages 2-64 years living in environments or social conditions in which the risk for invasive pneumococcal disease or its complications is increased



- In 2004, 58% of adults in Kansas who have diabetes, asthma, or who are 65 years and older have ever received a pneumococcal vaccination.



- 62% of adult Kansans ages 65 years and older have ever received a pneumococcal vaccination.

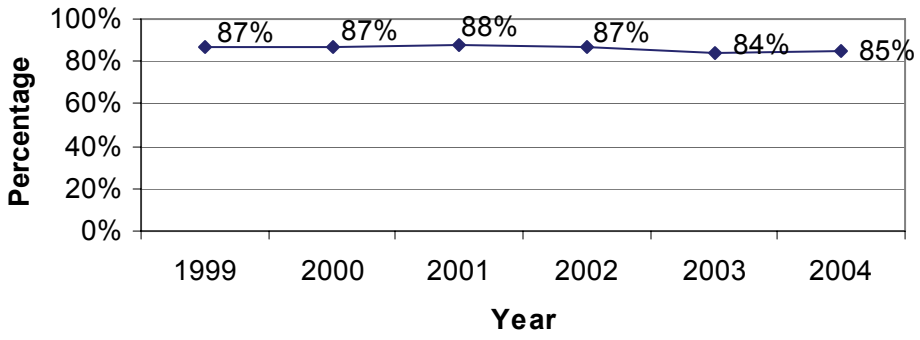


- Among adults with asthma, 36% have ever received a pneumococcal vaccination.
- Among adults with diabetes, 51% have ever received a pneumoccal vaccination.

ACCESS TO HEALTH CARE: 18-64 YEAR OLDS

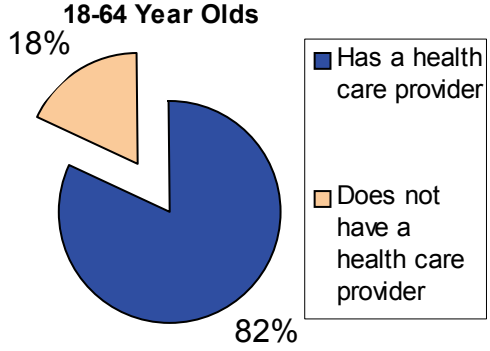
Access to health care can be defined as "the timely use of personal health services to achieve the best possible health outcomes", which includes both use and effectiveness of services such as health information and preventive treatment (16). Access to quality care is necessary to eliminate health disparities, increase the number of years of life and increase the quality of life.

Percentage of Adults Ages 18-64 Years Who Have Health Care Coverage, 1999-2004



- In 2004, 85% of adults ages 18-64 years had some type of health care coverage including health insurance, prepaid plans such as HMOs or governmental plan such as Medicare.

Health Care Provider Status Among 18-64 Year Olds

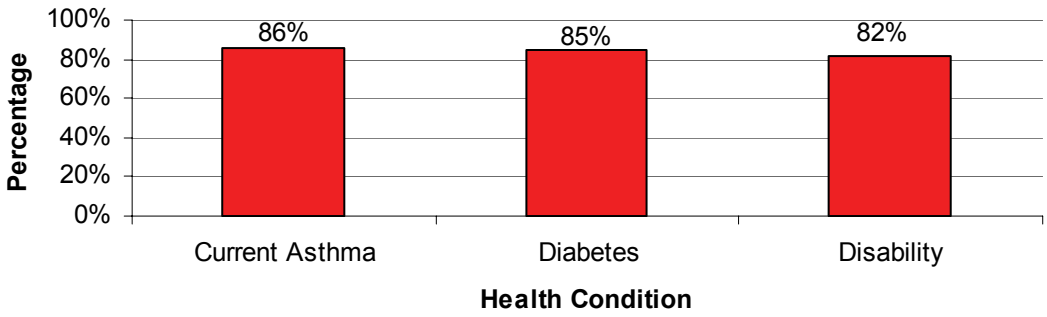


- In 2004, 82% of adults ages 18-64 years had at least one person they think of as their personal doctor or health care provider.

Health Care Access and Health Conditions

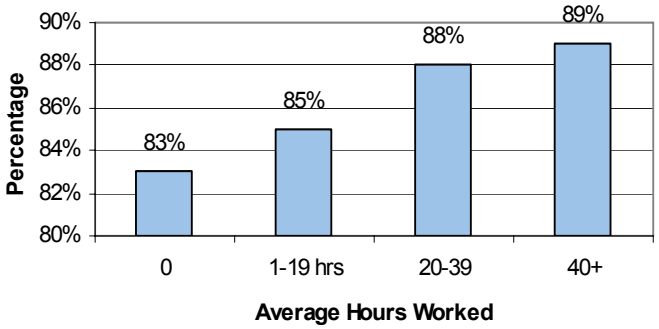
- 86% adults with diabetes have health care coverage.
- Among adults with a disability, 82% have health care coverage.

Percentage of Adults 18-64 Years With Health Care Coverage by Health Condition



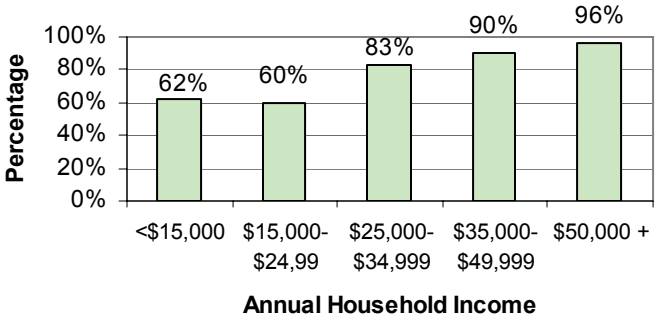
Health Care Access Among Certain Subpopulations

Percentage of Adults 18-64 Years Who Have Health Care Coverage by Average Hours Worked



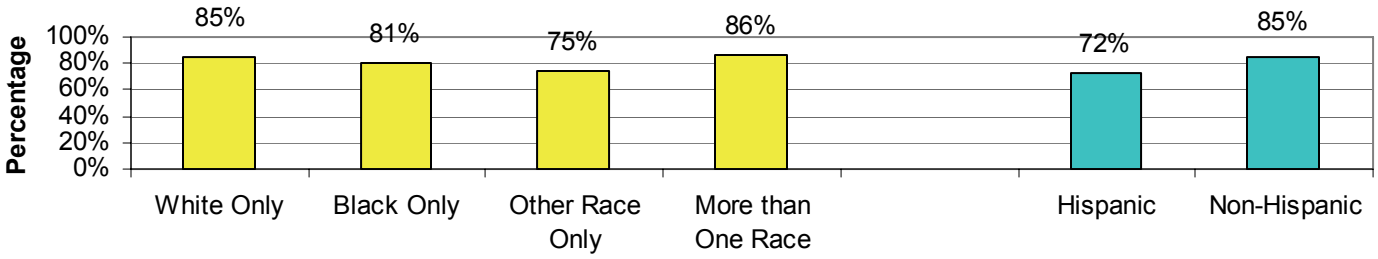
- Among adults ages 18-64 years who reported not working any hours at a job or business, 83% have health care coverage.

Percentage of Adults 18-64 Years Who Have Health Care Coverage by Annual Household Income



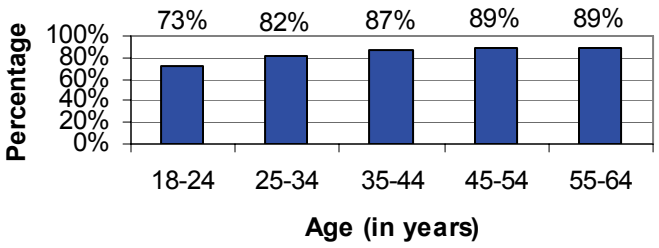
- 60% of adults ages 18-64 years with an annual household income level of $15,000-$24,999 have health care coverage.

Percentage of Adults Ages 18-64 Years With Health Care Coverage by Race and Ethnicity



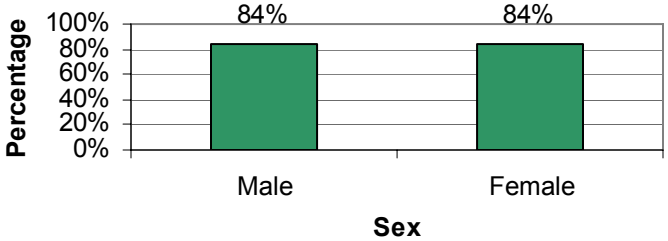
- 75% of adults ages 18-64 years who are Asian, Native Hawaiian or Pacific Islander, Alaska Native, American Indian or other have health care coverage.
- 72% of Hispanics 18-64 years old have health care coverage.

Percentage of Adults Who Have Health Care Coverage by Age



- 73% of Kansans ages 18-24 years have some type of health care coverage compared to 89% of Kansans ages 55-64 years who have some type of health care coverage.

Percentage of Adults Ages 18-64 Years Who Have Health Care Coverage by Sex

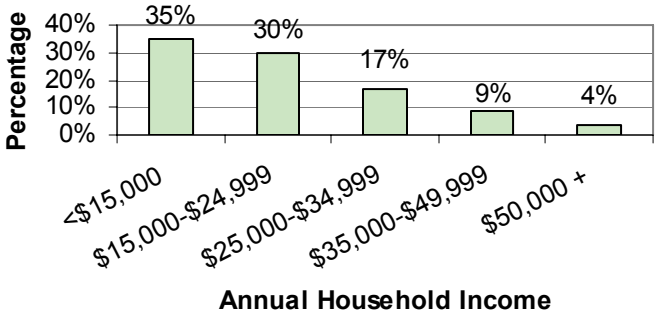


- 84% of men and 84% of women ages 18-64 years have health care coverage.

Medical Costs

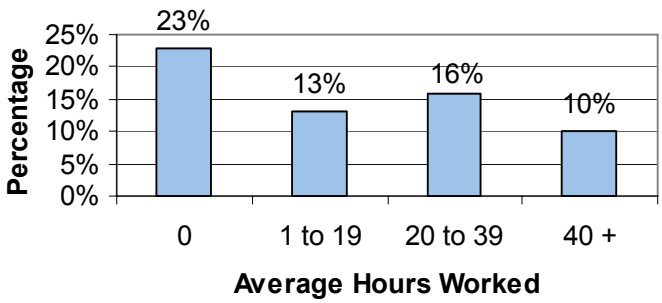
In 2004, 13% of adult Kansans ages 18-64 years needed to see a doctor in the past 12 months but could not because of the cost.

Percentage of Adults Ages 18-64 Years Who Needed to See a Doctor But Could Not Because of the Cost by Annual Household Income



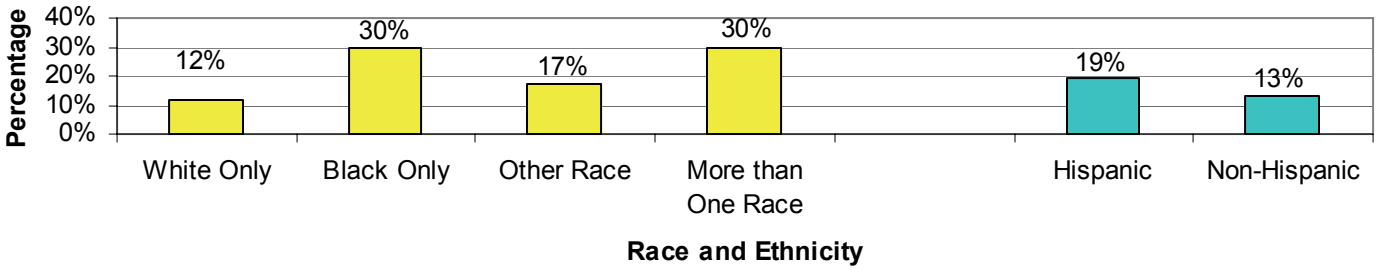
- 35% of Kansans ages 18-64 years with an annual income less than $15,000 needed to see a doctor during the past 12 months but could not because of the cost.

Percentage of Adults Ages 18-64 Years Who Needed to See a Doctor But Could Not Because of Cost by Average Hours Worked



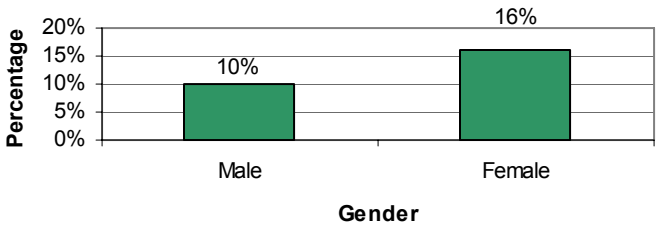
- 23% of Kansans ages 18-64 years who reported not working any hours per week at a job or business needed to see a doctor during the past 12 months but could not because of the cost.

Percentage of Adults Ages 18-64 Years Who Needed to See a Doctor But Could Not Because of the Cost by Race and Ethnicity



- Among adults ages 18-64 years who are more than one race, 30% needed to see a doctor during the past 12 months but could not because of the cost.
- 19% of Hispanics and 13% of Non-Hispanics needed to see a doctor during the past 12 months but could not because of the cost.

Percentage of Adults Ages 18-64 Years Who Needed to See a Doctor But Could Not Because of the Cost by Gender



- 10% of males and 16% of females ages 18-64 years needed to see a doctor during the past 12 months but could not because of the cost.

Featured Issues in 2004

Featured issues are public health topics which are not leading health indicators but are public health concerns in the state of Kansas. These issues were selected based on disease prevalence, public health impact, and availability of data in the 2004 Kansas BRFSS survey.

To view other health topics not featured in this report, please visit:
http://www.kdheks.gov/brfss/Questionnaires/quest2004.html

ORAL HEALTH

Oral health has a broad meaning and encompasses more than healthy teeth. Oral health also involves, gums, oral-facial pain, oral and throat cancers, oral soft tissue lesions, and birth defects such as cleft lip and palate (16).

Oral health and general health status are interrelated. Oral infections are associated with heart disease, lung disease, stroke, and premature babies. Risk factors such as tobacco use and poor dietary practices affect oral health (16).

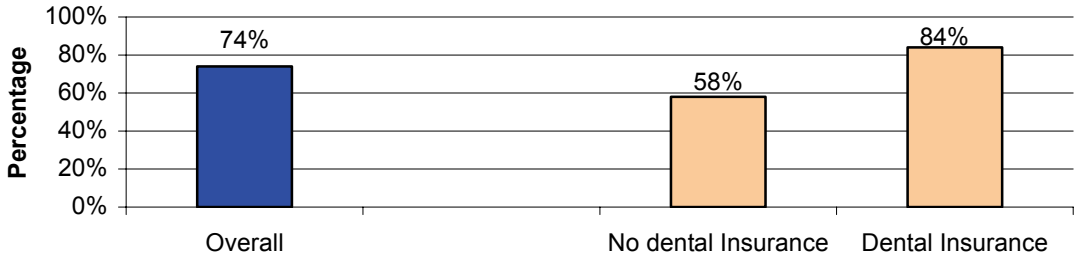
It is recommended that adults utilize the oral health care system at least once a year (17). Utilization includes visiting a dentist for any reasons or having teeth cleaned by a dentist or dental hygienist.

- 74% of adults visited a dentist, dental hygienist or dental clinic in the past year.

Approximately 65% of adults have insurance coverage that pays for some or all of their routine dental care including dental insurance, prepaid plans such as HMOs, or governmental plans such as Medicaid

- Among adults with dental insurance, 84% visited a dentist, dental hygienist, or dental clinic in the past year.

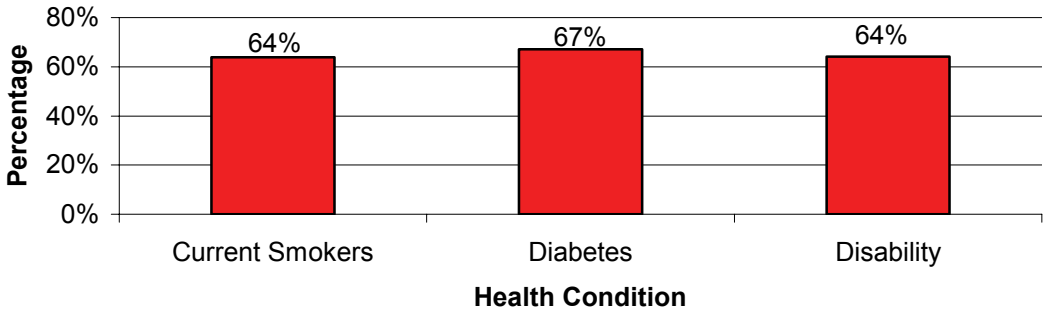
Percentage of Adults Who Utilized the Oral Health System Within the Past Year



Oral Health Utilization and Health Conditions

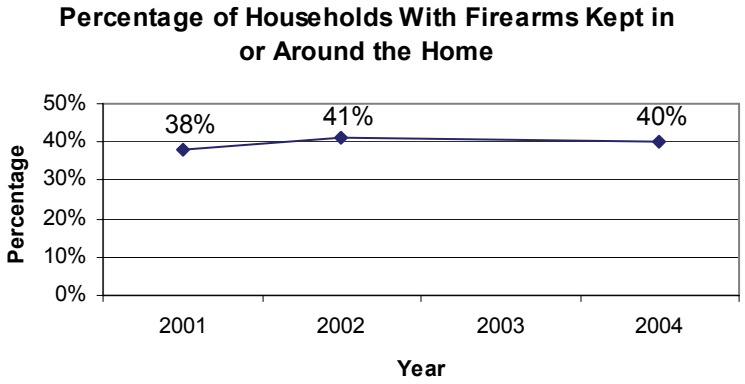
- Among adults with diabetes, 67% reported they visited a dentist, dental hygienist or dental clinic in the past year.
- Among current smokers, 64% reported they visit a dentist, dental hygienist or dental clinic in the past year.

Percentage of Adults Who Utlized the Oral Health System Within the Past Year by Health Condition



FIREARMS

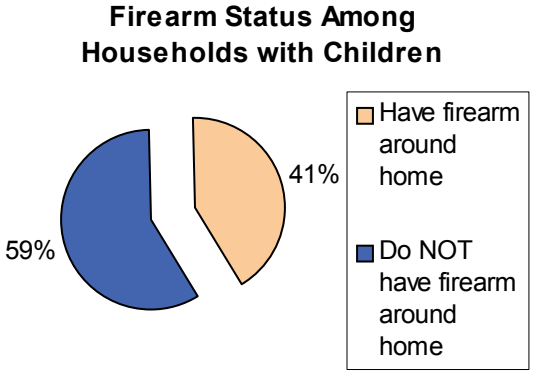
Firearms were the leading cause of injury death in 2002 (18). An estimated 268 Kansans and 30,242 people in the United States died due to firearms in 2002. (19,20). In 2004, there were 64,389 nonfatal injuries attributable to firearms in the United States (21). Nationwide, an estimated $911 million per year in medical costs is associated with firearms injuries (21).

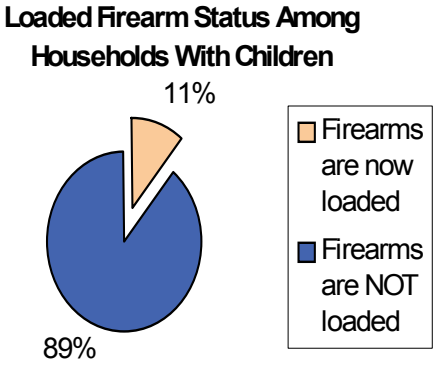


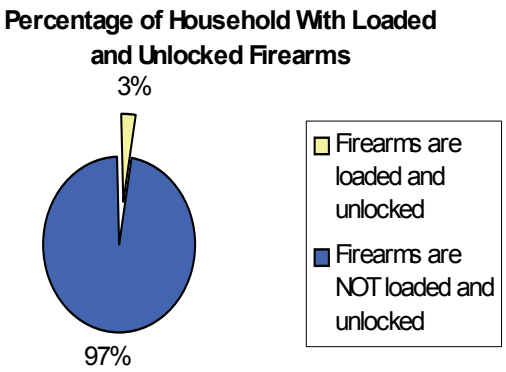
- In 2004, 40% of households in Kansas kept a firearm in or around the home. Firearms included pistols, shotguns and rifles but did not include BB guns, starter pistols, or gun that cannot fire.
- Of households with firearms, 16% have loaded firearms and 66% have unlocked firearms.

HOUSEHOLDS with CHILDREN and FIREARMS

The American Academy of Pediatrics recommends households with children who keep a gun in the home: keep the gun unloaded, lock the guns, lock ammunition, and hide the keys to the locked box (22).







- 41% of households with children have a firearm in or around the house.
- 11% of households with children have a loaded firearm kept around the house.
- 3% of households with children have loaded and unlocked firearms in or around the house.

Technical Notes

Questionnaire Design

The survey consists of three sections:

- Core questions are asked by all states. The order the questions appear and the wording of the questions are fairly consistent across all states. Types of core questions include fixed, rotating, and emerging health issues.
    - Fixed core: contains questions that are asked every year. Fixed core topics include health status, health care access, healthy days, life satisfaction, emotional satisfaction, disability, tobacco use, alcohol use, exercise, immunization, HIV/AIDS, diabetes, asthma, and cardiovascular disease.
    - Rotating core: contains questions asked every other year.
        - Odd years (2005, 2007, 2009, etc): fruits and vegetables, hypertension awareness, cholesterol awareness, arthritis burden, and physical activity.
        - Even years (2006, 2008, 2010, etc): women's health, prostate screening, colorectal cancer screening, oral health and injury.
    - Emerging Health Issues: contains late breaking health issue questions. At the end of the survey year, these questions are evaluated to determine if they should be a part of the fixed core.
- Optional Modules include questions on a specific health topic. The CDC provides a pool of questions from which states may select. States have the option of adding these questions to their survey. The CDC's responsibilities regarding these questions include development of questions, cognitive testing, financial support to states to include these questions on the questionnaire, data management, limited analysis and quality control.
- State added questions are based on public health needs of each state. State added questions include questions not available as supported optional modules in that year or emerging health issues that are specific to each state. Any modifications made to the CDC support modules available in that year make the module a state added module. The CDC has no responsibilities regarding these questions.

Each year, stakeholders are invited to attend an annual planning meeting and propose optional modules and state added questions to be added to the survey. Then, a survey selection committee consisting of the BRFSS Coordinator, Director of Science and Surveillance, and Office of Health Promotion Director meet to determine the questionnaire content. The survey selection committee uses a specific set of criteria to determine the questionnaire's content.

Sampling

The 2004 BRFSS was conducted using a disproportionate stratified sampling method. This method of probability sampling involved assigning sets of one hundred telephone numbers with the same area code, prefix and first two digits of suffix and all possible combinations of the last two digits ("hundred blocks") into two strata. Those hundred blocks that have at least one known listed household number are designated high density (also called "one-plus block"); hundred blocks with no known listed household numbers are designated low density ("zero blocks"). The high-density stratum is sampled at a higher rate than the low density stratum resulting in greater efficiency. Approximately the same number of households are called each month throughout the calendar year to reduce bias caused by seasonal variation of health risk behaviors.

Potential working telephone numbers were dialed during three separate calling periods (daytime, evening, and weekends) for a total of 15 call attempts before being replaced. Upon reaching a valid household number, one household member ages 18 years and older was randomly selected. If the selected respondent was not available, an appointment was made to call at a later time or date. Because respondents were selected at random and no identifying information was solicited, all responses to this survey were anonymous. In 2004, 8,654 residents of Kansas were interviewed.

Response Rate

The CASRO (Council of American Survey Research Organizations) response rate for the 2004 Kansas BRFSS survey was 58.14%. The CASRO formula is based on the number of interviews completed, the number of households reached, and the number of household with unknown eligibility status. The CASRO response rate is used because in addition to those persons who refused to answer questions, lack of response can also arise because household members were not available despite repeated call attempts, or household members refused to pick up the phone based on what they discern from caller ID.

Limitations

As with any research method, the BRFSS has limitations.

- BRFSS is conducted among non-institutionalized adults and therefore excludes individuals without telephone service, those on military bases, and individuals in institutions.
- All information is self reported which may introduce bias such as recall bias, reporting bias, etc.
- Due to the sampling and population rate, it is often difficult to obtain subpopulation data such as county level data or data on minorities.
- BRFSS is not ideal for low prevalence conditions.

Weighting Procedures

Weighting is a process by which the survey data are adjusted to account for unequal selection probability and response bias and to more accurately represent the population from which the sample was drawn. The response of each person interviewed were assigned a weight which accounted for the density stratum, the number of telephones in the household, the number of adults in the household, and the demographic distribution of the sample.

Estimates

Data results from the BRFSS are estimates of the real population prevalence. To account for sampling error and for the accuracy of the estimate, we calculate 95% confidence intervals. A confidence interval contains an upper and lower limit. We are 95% confident that the true percentage is between the lower limit and the upper limit. The smaller the range between the lower limit and upper limit, the more precise the estimated percentage is. In other words, the narrower the confidence interval, the better.

Split Questionnaire

To accommodate increasing data needs, the Kansas BRFSS used a split questionnaire in 2004. CDC optional modules and state added questions are organized by topics into two sections: questionnaire A and questionnaire B. Each telephone number is randomly assigned to questionnaire A and questionnaire B prior to being called. All 8,000 respondents answer questions from the core section. Then, approximately half of the respondents will receive questionnaire A and the remaining will receive questionnaire B, (i.e. approximately 4,000 respondents for each questionnaire).

Advantages of a split questionnaire:

- Collect data on numerous topics within one data year
- Collect in-depth data on one specific topic
- Ability to keep questionnaire time and length to a minimum

Disadvantages of a split questionnaire:

- Complexity of data weighting; additional weighting factors are needed
- Variables on questionnaire A cannot be analyzed with variables on questionnaire B

Analysis of split questionnaire:

The sample size for each split of the questionnaire is approximately half of the total sample size. As mentioned above, each respondent is randomly assigned to questionnaire A or to questionnaire B. The questions regarding certain conditions are included in the core section (e.g., asthma, disability, high blood pressures, etc.). State added questions and optional modules for these conditions are included on questionnaire A or questionnaire B. Therefore, these additional questions on a specific health condition are asked from respondents who are assigned to that particular split questionnaire. This resulted in approximately half of the respondents who were identified with a particular condition from the core section responding to additional questions on the specific condition. Also, the number of adults with the specific health condition may vary on each question due to respondents terminating at various points in the survey.

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