

Prevalence of Hypertension and Average Sodium Intake among Shawnee County, Kansas Adults, 2011

Background

Hypertension, or high blood pressure, is a major risk factor for cardiovascular disease and contributes to nearly half of all cardiovascular-related deaths, including stroke, in the United States [1]. Research demonstrates that even small reductions in sodium intake may lower blood pressure, help prevent the onset of hypertension or help control blood pressure among hypertensive adults [2]. The 2010 U.S. Dietary Guidelines currently recommend limiting sodium intake to less than 2,300 mg per day. Certain persons should limit their sodium intake to 1,500 mg per day, including adults 51 years or older; African Americans; and persons with high blood pressure, diabetes or chronic kidney disease [3]. In 2011, the Kansas Department of Health and Environment, Bureau of Health Promotion was awarded a grant from the Centers for Disease Control and Prevention, Sodium Reduction in Communities Program to implement community-based interventions to reduce sodium intake among Shawnee County, Kansas residents.

Objectives

The purposes of this study were to compare the prevalence of clinic-measured and self-reported hypertension among Shawnee County, Kansas adults 18 years and older and to assess their average sodium intake.

Methods

The 2011 Sodium Reduction in Communities – Shawnee County Survey was conducted during April–November 2011 to provide information on the prevalence of high blood pressure; sodium intake; knowledge, attitudes and behaviors related to sodium consumption; and access to foods with low sodium content among adults 18 years and older in Shawnee County, Kansas. Data are used to inform the interventions of the Kansas Sodium Reduction in Communities Project.

This particular survey is unique in its design and consists of three components: (1) telephone interview, which utilizes the Kansas Behavioral Risk Factor Surveillance System (BRFSS) design [4]; (2) clinical measurement of height, weight and blood pressure; and (3) a web-based Automated Self-administered 24-hour Dietary Recall (ASA24) instrument created by the National Cancer Institute. Telephone interviews were conducted within the Kansas Department of Health and Environment, while clinical measurements and ASA24 data were collected by the Shawnee County Health Agency (SCHA). Data were weighted to be representative of the adult population (18 years and older) of Shawnee County.

High blood pressure was defined as clinic-measured average blood pressure $\geq 140/90$ mmHg or current use of blood pressure lowering medication. Self-reported hypertension was defined as respondents who answered “Yes” to the survey question, “Have you ever been told by a doctor, nurse, or other health professional that you have high blood pressure?”

Average sodium intake was calculated directly by the ASA24 Researcher Web site and is based on the United States Department of Agriculture Food and Nutrient Database for Dietary Surveys (FNDDS). FNDDS is a database of foods, their nutrient values, and their gram weights for typical food portions. Meeting current federal recommendations for sodium intake was defined

as consuming $\leq 1,500$ mg/day of sodium among adults 51 years and older, African Americans, or persons with clinic-measured or self-reported high blood pressure, or self-reported diabetes or chronic kidney disease; or consuming $< 2,300$ mg/day among all other respondents.

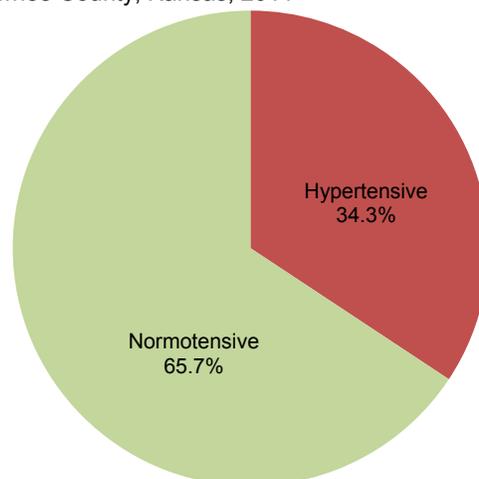
Results

A total of 834 Shawnee County adults completed the telephone interview; of those, 695 (83%) completed clinic visits and ASA24 interviews.

Prevalence of hypertension

In 2011, 34.3% (95% CI: 28.2% to 40.5%) of Shawnee County residents aged 18 years and older had hypertension based on clinic measures or self-reported use of blood pressure lowering medication (Figure 1). This estimate was consistent with participant self-report of ever being diagnosed with high blood pressure (34.9%; 95% CI: 30.0% to 39.7%).

Figure 1. Prevalence of Hypertension among Adults 18 Years and Older, Shawnee County, Kansas, 2011



The prevalence of hypertension in Shawnee County was significantly higher among adults age 65 years and older (61.4%; 95% CI: 52.1% to 70.7%) as compared to those 18 to 64 years (28.2%; 95% CI: 21.4% to 35.0%). The prevalence of hypertension was also significantly higher among adults age 18 years and older whose annual household income was less than

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\$50,000 (44.1%; 95% CI: 33.0% to 55.1%) as compared to those whose annual household income was \$50,000 or greater (25.0%; 95% CI: 18.5% to 31.6%). There was no statistically significant difference in prevalence of hypertension among Shawnee County adults 18 years and older across gender groups, levels of educational attainment, obesity status, or disability status.

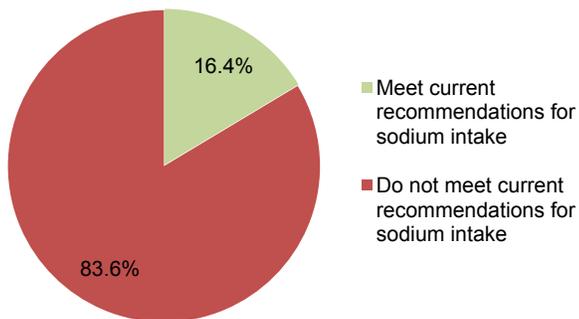
Mean sodium intake

In 2011, the average sodium intake among Shawnee County residents aged 18 years and older was 3,508 mg/day (95% CI: 3,119 to 3,897). The average sodium intake among Shawnee County residents was significantly higher among men (4,141 mg/day; 95% CI: 3,438 to 4,845) as compared to women (2,931 mg/day; 2,681 to 3,181). There was no statistically significant difference in average sodium intake among Shawnee County adults 18 years and older across age groups, annual household income groups, levels of educational attainment, obesity status, disability status, or hypertension status.

Meet current federal recommendations for sodium intake

In 2011, 83.6% (95% CI: 77.8% to 89.4%) of Shawnee County adults aged 18 years and older did not meet current federal recommendations for sodium intake (Figure 2). There was no statistically significant difference in the percentage of Shawnee County adults aged 18 years and older who did not meet current federal recommendation for sodium intake across sex groups, age groups, annual household income groups, levels of educational attainment, obesity status, disability status, or hypertension status.

Figure 2. Percentage of Adults 18 Years and Older Who Meet Current Recommendations for Sodium



Discussion

The prevalence of hypertension among Shawnee County adults is similar to national estimates, which show that during 2005-2008, 30.9% (95% CI: 29.4% to 32.4%) of U.S. adults aged 18 years and older had hypertension [5]. Furthermore, self-reported hypertension status appears consistent with clinical-measured hypertension status, which validates the use of telephone-based surveys such as the Kansas BRFSS to assess this particular health indicator among adults. The average sodium intake among Shawnee County residents is similarly consistent with national estimates of sodium intake, which demonstrate that Americans consume on average 3,300 mg of sodium a day [6]. Unfortunately, results from this study indicate that the overwhelming majority (83.6%) of adults in Shawnee County, Kansas, including those with and without hypertension, are exceeding current sodium recommendations. Nationally, 95.0% (95% CI: 94.9% to 95.2%) of U.S. adults aged 18-50 years with a sodium recommendation of <2,300 mg/day consumed \geq 2,300 mg/day, while 99.4% of those with a sodium recommendation of 1,500 mg/day consumed >1,500 mg/day [7].

There are certain limitations to this study worth noting. Survey results do not apply to individuals without telephone service, those who reside on military bases or within institutions, or those

who are unable to complete a telephone survey. Data included in the current report are only based on sampled individuals with a landline telephone. In addition, estimates of average sodium intake are based on a single 24-hour dietary recall per respondent. Ideally, estimates would be based on averages obtained from two 24-hour dietary recalls, which is the methodology utilized by the National Health and Nutrition Examination Survey (NHANES) [8].

Excessive sodium consumption has significant public health implications for cardiovascular disease due to the reported association between sodium intake and high blood pressure [2]. Fortunately, the Sodium Reduction in Communities Project is currently using funds awarded by the Centers for Disease Control and Prevention to implement evidence-based public health interventions to increase public awareness of the health implications of excessive sodium intake and to make policy and environmental changes that support access to and availability of low-sodium options in Shawnee County.

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References

1. Chobanian AV, Bakris GL, Black HR, et al. The seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure: the JNC 7 report. *JAMA* 2003;289:2560-72.
2. He FJ, MacGregor GA. A comprehensive review on salt and health and current experience of worldwide salt reduction programmes. *J Hum Hypertens* 2009;23:363-84.
3. U.S. Department of Agriculture and U.S. Department of Health and Human Services. *Dietary Guidelines for Americans*, 2010. 7th Edition, Washington, DC: U.S. Government Printing Office, December 2010.
4. Kansas Behavioral Risk Factor Surveillance System Technical Notes. Available at: <http://www.kdheks.gov/brfss/technotes.html#Methodolgy>. Accessed September 26, 2012.
5. Centers for Disease Control and Prevention. Vital Signs: Prevalence, Treatment, and Control of Hypertension—United States, 1999-2002 and 2005-2008. *MMWR* 2011;60(4):103-108.
6. Centers for Disease Control and Prevention. (2012). Vital Signs: Where's the sodium? Available online at: <http://www.cdc.gov/VitalSigns/Sodium>. Accessed September 26, 2012.
7. Centers for Disease Control and Prevention. Usual Sodium Intakes Compared with Current Dietary Guidelines—United States, 2005-2008. *MMWR* 2011;60(41):1413-1417.
8. Centers for Disease Control and Prevention. Key concepts about NHANES dietary data collection. Available online at: <http://www.cdc.gov/nchs/tutorials/Dietary/SurveyOrientation/DietaryDataOverview/intro.htm>. Accessed October 5, 2012.

Heart Attack and Stroke Symptoms Awareness in Kansas

Background

Approximately half of cardiac and stroke deaths occur within one hour of onset of symptoms and before the patient even reaches the hospital [1]. Therefore, timely access to the hospital and recognition of the symptoms of heart attack and stroke are imperative in reducing death due to these diseases. In 2010, cardiovascular disease (CVD), including heart disease and stroke, was the leading cause of death in the United States and in Kansas. In 2010, cardiovascular disease accounted for 7,552 deaths in Kansas, 31% of all deaths [2]. In the United States, CVD cost was estimated to be \$444 billion dollars, and one of every six

dollars spent on health care was spent on treatment of CVD [3].

Since approximately half of the cardiac and stroke deaths occur before patients reach a hospital, clinic, or other medical facility, appropriate access and receipt of timely treatment for patients having a heart attack or stroke depends to some extent on early recognition of the symptoms and taking immediate action by calling 9-1-1. This issue is identified as a focus area for improving cardiovascular health of Americans by the Healthy People 2020 process. It includes objectives to “increase the proportion of adults aged 20 years and older who are aware of and respond to early warning symptoms and signs of a heart attack” and to “increase the proportion of adults aged 20 years and older who are aware of and respond to early warning symptoms and signs of a stroke” (Objective HDS 16 and HDS 17) [4].

Objective

This report aims to describe the prevalence of awareness of correct heart attack and stroke warning signs and symptoms in adult Kansans ages 18 years and older and among various population sub groups.

Method

The 2011 Kansas Behavioral Risk Factor Surveillance Symptom (BRFSS) data were used for this report. Kansas BRFSS is an ongoing, annual, population-based, random, digit-dial survey of non-institutionalized adults ages 18 years and older living in a private residence with landline and/or cell phone service in Kansas. Kansas BRFSS 2011 included the Centers for Disease Control and Prevention (CDC) Heart Attack and Stroke Module. A total of 8,721 respondents were randomly assigned to questionnaire version A of the survey, which included the Heart Attack and Stroke Module. The respondents answered questions regarding warning signs and symptoms of a heart attack and stroke with response options of ‘yes,’ ‘no,’ and ‘don’t know/not sure.’ A red herring question was included for heart attack warning signs and symptoms, “sudden trouble seeing in one or both eyes” and

stroke warning signs and symptoms, “sudden chest pain or discomfort,” to assess whether respondents would answer ‘yes’ to all the items. The last question of the module was, “if you thought someone was having a heart attack or stroke, what is the first thing you would do?” Respondents were able to choose one action from a list, “take them to the hospital, tell them to call their doctor, call 9-1-1, call their spouse or family member, or do something else.”

2011 Kansas BRFSS data were analyzed for the prevalence of awareness of each individual warning sign and symptom. Then, the Kansas BRFSS data were analyzed for the prevalence of awareness of all five heart attack/stroke warning signs and symptoms as well as indicating that they would call 9-1-1 if they thought someone was having a heart attack/stroke and correctly identifying the red herring sign/symptom. Additional analyses were performed among various subpopulations: age groups, race/ethnicity, gender, education, and annual income. All prevalence estimates and 95 percent confidence intervals (CI) are presented as weighted estimates, calculated using SAS software version 9.3, to conform to the Kansas BRFSS survey design.

Results

In 2011, the percentage of adults 18 years and older aware of each of the five major warning signs and symptoms of heart attack varied significantly, from 96.0 percent (95.3-96.6 95% CI) who correctly identified chest pain or discomfort to 60.5 percent (58.7-62.3 95% CI) who correctly identified pain or discomfort in jaw, neck or back (Table 1). The percentage of adults 18 years and older aware of each of the five major warning signs and symptoms of stroke varied significantly as well, from 95.3 percent (94.6-96.1 95% CI), who correctly identified sudden numbness or weakness of face, arm or leg, especially on one side, to 64.4 percent (62.7 to 66.1 95% CI) who correctly identified severe headache with no known cause (Table 2). A total of 85.9 percent (84.6-87.2 95% CI) of respondents reported that they would call 9-1-1 as their first response if they thought someone was having a heart attack or stroke (Figure 1).

Table 1: Percentage of Adults 18 Years and Older Who Correctly Identified Heart Attack Signs or Symptoms, 2011 Kansas BRFSS

	Pain or Discomfort in Jaw, Neck, or Back		Weak, Lightheaded, or Faint		Chest Pain or Discomfort		Pain or Discomfort in the Arms or Shoulder		Shortness of Breath	
	%	(95 % CI)	%	(95 % CI)	%	(95 % CI)	%	(95 % CI)	%	(95 % CI)
Yes	60.5	(58.7 to 62.3)	67.7	(66.1 to 69.3)	96.0	(95.3 to 96.6)	88.6	(87.3 to 89.9)	87.6	(86.5 to 88.8)
No	26.6	(24.8 to 28.3)	18.8	(17.5 to 20.2)	2.4	(1.9 to 3.0)	6.8	(5.7 to 7.8)	6.6	(5.7 to 7.5)
Don't Know/Not Sure	13.0	(11.8 to 14.2)	13.5	(12.4 to 14.6)	1.6	(1.2 to 2.0)	4.6	(3.8 to 5.4)	5.7	(4.9 to 6.6)

Table 2: Percentage of Adults 18 Years and Older Who Correctly Identified Stroke Signs or Symptoms, 2011 Kansas BRFSS

	Sudden Confusion or Trouble Speaking		Sudden Numbness or Weakness of Face, Arm, or Leg, Especially on One Side.		Sudden Trouble Seeing in One or Both Eyes		Sudden Trouble Walking, Dizziness, or Loss of Balance		Severe Headache with No Known Cause	
	%	(95 % CI)	%	(95 % CI)	%	(95 % CI)	%	(95 % CI)	%	(95 % CI)
Yes	91.4	(90.2 to 92.5)	95.3	(94.6 to 96.1)	74.3	(72.7 to 75.9)	88.4	(87.2 to 89.6)	64.4	62.7 to 66.1)
No	3.1	(2.4 to 3.9)	1.8	(1.3 to 2.2)	8.5	(7.4 to 9.7)	4.6	(3.8 to 5.5)	15.5	(14.0 to 16.9)
Don't Know/Not Sure	5.5	(4.6 to 6.4)	2.9	(2.3 to 3.5)	17.2	(15.9 to 18.4)	7.0	(6.1 to 7.8)	20.1	(18.8 to 21.5)

Figure 1. Percentage of Adults 18 Years and Older by Stated First Response to Someone Having a Heart Attack or Stroke, 2011 Kansas BRFSS

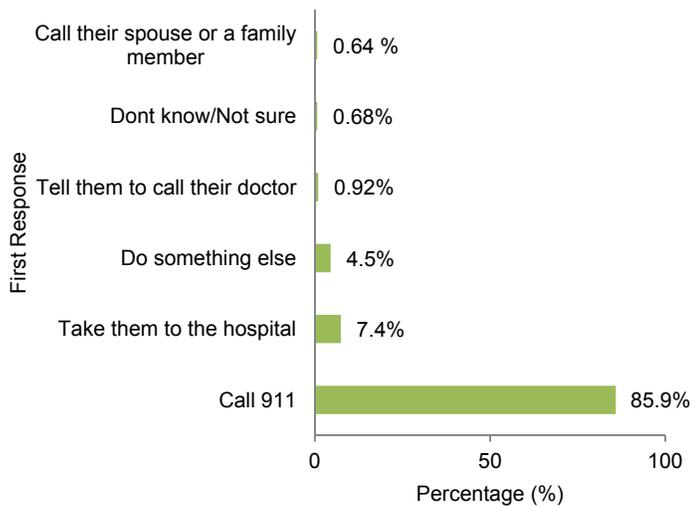


Table 3: Respondents aware of all five heart attack warning signs and symptoms and one incorrect symptom and indicated calling 9-1-1 as first action, by selected characteristics-Kansas BRFSS 2011

Demographic Category	%	(95% CI)
Total	12.3	(11.4 to 13.2)
Sex		
Male	11.0	(9.5 to 12.4)
Female	13.6	(12.4 to 14.7)
Age Group		
18-24 Years	1.8	(0.1 to 3.5)
25-34 Years	11.1	(8.0 to 14.3)
35-44 Years	15.1	(12.5 to 17.7)
45-54 Years	15.4	(13.5 to 17.3)
55-64 Years	16.0	(14.2 to 17.7)
65+ Years	12.3	(10.9 to 13.6)
Annual Household Income Groups		
Less than \$15,000	7.5	(4.5 to 10.5)
\$15,000 - \$24,999	8.3	(6.3 to 10.4)
\$25,000 - \$34,999	13.4	(9.9 to 16.9)
\$35,000 - \$49,999	12.5	(10.1 to 14.9)
\$50,000+	16.3	(14.7 to 17.8)
Race/Ethnicity		
White Non-Hispanic	13.2	(12.2 to 14.2)
Black Non-Hispanic	10.5	(6.5 to 14.6)
Hispanic	7.3	(3.0 to 11.6)
Other Race Only, Non-Hispanic	6.5	(1.1 to 11.8)
Multiracial, Non-Hispanic	6.8	(2.2 to 11.4)
Education Groups		
Less than high school	2.8	(1.6 to 4.1)
High school graduate or G.E.D.	9.2	(7.7 to 10.7)
Some college	15.1	(13.1 to 17.1)
College graduate	16.1	(14.5 to 17.6)

Although percentages of adults being aware of individual symptoms and calling 9-1-1 as their first response are high, only 12.3 percent (11.4-13.2 95% CI) of adults 18 years and older correctly answered all six questions to recognize a heart attack and identified 9-1-1 as the first response to someone having a heart attack or stroke. Among adults 18 years and older, the percentage who correctly answered all six questions about heart attack and identified 9-1-1 as the first response to someone having a heart attack

or stroke varied by age group, annual household income, race/ethnicity, and education. Non-Hispanic whites (13.2%; 12.2-14.2 95% CI) and persons with some college (15.1%; 13.1-17.1 95% CI) had significantly higher knowledge of all heart attack symptoms and identified 9-1-1 as the first response, compared to Hispanics (7.3%; 3.0-11.6 95% CI) and persons who completed high school or GED (9.2%; 7.7-10.7 95% CI). Differences across ethnic groups should be interpreted with caution since these data were not age adjusted to account for the different distributions of age. The percentage of adults 18 years and older who recognized all six symptoms of a heart attack and identified 9-1-1 as the first response to someone having a heart attack or stroke did not vary significantly between sexes (Table 3).

The percentage of adults 18 years and older who correctly answered all six questions about stroke and identified 9-1-1 as the first response to someone having a heart attack or stroke was 21.7 percent (20.3-23.1 95% CI). Non-Hispanic whites (23.6%; 22.0-25.1 95% CI) and persons with some college education (24.7%; 21.9-27.4 95% CI) had significantly higher knowledge of all six symptoms of a stroke and identified 9-1-1 as the first response to someone having a heart attack or stroke, compared to Hispanics (12.3%; 6.5-18.1 95% CI) and persons who completed high school or GED (15.1%; 12.6-17.5 95% CI). Differences across ethnic groups should be interpreted with caution since these data were not age adjusted to account for the different distributions of age. There was no significant difference in knowledge among age and gender groups (Table 4).

Table 4: Respondents aware of all five stroke warning signs and symptoms and one incorrect symptom and indicated calling 9-1-1 as first action, by selected characteristics-Kansas BRFSS 2011

Demographic Category	%	(95% CI)
Total	21.7	(20.3 to 23.1)
Sex		
Male	21.7	(19.4 to 24.0)
Female	21.7	(20.0 to 23.3)
Age Group		
18-24 Years	19.6	(13.2 to 26.0)
25-34 Years	21.6	(17.4 to 25.8)
35-44 Years	25.7	(22.3 to 29.0)
45-54 Years	24.2	(21.9 to 26.1)
55-64 Years	24.7	(22.6 to 26.8)
65+ Years	14.2	(12.8 to 15.7)
Annual Household Income Groups		
Less than \$15,000	13.2	(8.1 to 18.4)
\$15,000 - \$24,999	12.6	(9.5 to 15.7)
\$25,000 - \$34,999	21.6	(17.2 to 26.6)
\$35,000 - \$49,999	21.3	(18.1 to 24.6)
\$50,000+	28.9	(26.6 to 31.1)
Race/Ethnicity		
White Non-Hispanic	23.6	(22.0 to 25.1)
Black Non-Hispanic	12.4	(6.6 to 18.2)
Hispanic	12.3	(6.5 to 18.1)
Other Race Only, Non-Hispanic	14.1	(5.3 to 23.0)
Multiracial, Non-Hispanic	11.0	(4.4 to 17.5)
Education Groups		
Less than high school	11.4	(7.0 to 15.9)
High school graduate or G.E.D.	15.1	(12.6 to 17.5)
Some college	24.7	(21.9 to 27.4)
College graduate	29.3	(27.1 to 31.4)

Discussion

The Kansas BRFSS 2011 data indicated that the proportions of adults 18 years and older who correctly answered all six questions about heart attack or stroke and identified 9-1-1 as the first response to someone having a heart attack or stroke were very low. In addition, the disparities observed in the report by race/ethnicity and education level suggest that public health efforts to increase knowledge and awareness should include strategies directed towards Hispanics and persons with lower levels of education.

Public health efforts are needed to increase the level of awareness of the warning signs and symptoms of a heart attack and stroke and calling 9-1-1 if there is indication of a heart attack or stroke to decrease CVD mortality. Furthermore, the inequalities can be addressed in order to help reach the Healthy People 2020 objectives, and to increase the proportion of adults 18 years and older aware of the warning signs and symptoms of heart attack or stroke in all population sub groups. The current data can be used for planning, implementation and evaluation of efforts to increase public knowledge of heart attack and stroke warning signs and symptoms and the importance of calling 9-1-1, to reduce pre-transport deaths due to these diseases.

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References

1. Kansas Department of Health and Environment. Signs and Symptoms of Heart Attack and Stroke. <http://www.kdheks.gov/cardio/symptoms.htm>. Access 10/10/12
2. Kansas 2010 Vital Statistics Data, Bureau of Epidemiology and Public Health Informatics. KDHE
3. Centers for Disease Control and Prevention. Heart Disease & Stroke Statistics .2011. http://www.cdc.gov/chronicdisease/resources/publications/AAG/dhds_p.htm. Accessed 10/8/12.
4. US Department of Health and Human Services. Healthy People 2020. Available at <http://www.healthypeople.gov/2020/topicsobjectives2020>. Accessed 10/8/12.

Overweight and Obesity in Kansas Middle School Students: Results from the 2011/2012 Kansas Youth Tobacco Survey

Overweight and obesity have been increasing nationally, both in youths and adults. Nationally, about 18 percent of youth 12-19 years old were obese and 15 percent were overweight in 2010 [1]. Being overweight or obese is a risk factor for a variety of chronic diseases, but is not well monitored in Kansas youth. The Kansas Youth Risk Behavior Survey (YRBS) [2] has published high school student weight status every other year since 2005. The Kansas YRBS has consistently reported high school obesity prevalence between 10 percent and 12 percent, and an overweight prevalence between 13 percent and 15 percent in Kansas high school students. The YRBS, however, does not survey middle school students. The Kansas Youth Tobacco Survey (YTS) contains information on weight status, nutrition, and physical activity behaviors in addition to in-depth information on tobacco use. The Kansas YTS is a statewide school survey conducted every two years among students in grades 6-8 (middle school) and 9-12 (high school).

This document reports findings from the 2011/2012 middle school YTS related to weight status. About one in three Kansas middle school students are overweight or obese. A significantly larger percent of Kansas 6th grade students are obese than 8th grade students, which may herald continuing increases in youth obesity. Continued surveillance is needed.

Methods

Nine-hundred fifty students in grades 6-8 participated in the 2011/2012 YTS. This provided a sufficient sample for the results to be weighted to adjust for sampling and non-response bias, allowing the results to be generalized to all Kansas middle school students. Obesity and overweight classifications are based on Body Mass Index (BMI) calculations from student self-reported weight and height. Using the Centers for Disease Control and Prevention (CDC) 2000 Growth Charts [3], students at or above the 95th percentile BMI-for-age are considered obese. Students at or above the 85th percentile but lower than the 95th percentile BMI-for-age are considered overweight. Students below the 85th percentile BMI-for-age are normal or underweight. Biologically implausible values as defined by the CDC [4] and missing values were excluded from analysis. Data were analyzed with SAS 9.3.

Physical disability or long-term health problem status was assessed on the YTS in addition to standard youth demographic indicators. The physical disability or long-term health problems question read, "Do you have any physical disabilities or long-term health problems? 'Long-term' refers to difficulties that have lasted, or are expected to last, 6 months or more."

Results

Overall, 33.4 percent (95% CI: 29.5%-37.6%) of Kansas middle school students were overweight or obese during the 2011-2012 school year. About one in five middle school students (20.1%, 95% CI: 17.4%-23.1%) was overweight, and 13.4 percent (95% CI: 10.6%-16.7%) were obese. These results are similar to findings from the 2009/2010 Kansas Youth Tobacco Survey, which found that 19.1 percent of Kansas middle school students were overweight and 12.7 percent were obese. Per figure 1, combined overweight or obesity status did not vary significantly by any of the included demographic characteristics. When obesity and overweight are considered separately, however, weight status varied significantly by grade level (table 1). **"Other Race" includes Asian, American Indian, Native Hawaiian, multiracial and other race groups, excluding white-only and African American-only.

Figure 1. Prevalence of Overweight or Obesity by Subpopulation In Kansas Middle School Students, YTS 2011/2012

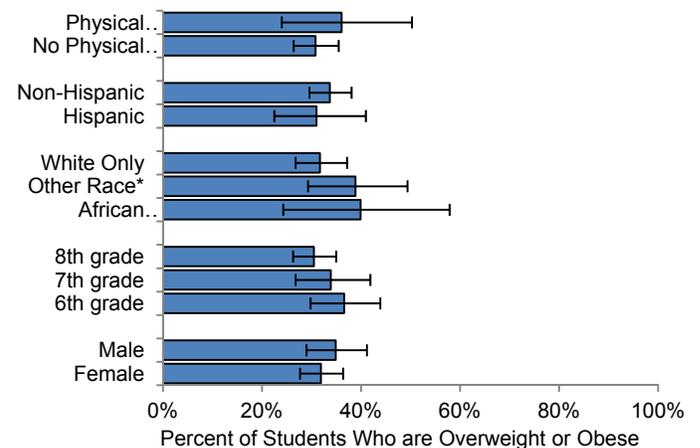


Table 1 indicates that, as asked on the 2011/2012 YTS, weight status does not vary by disability status, sex, race, or ethnicity in Kansas middle school students. Sixth grade students, however, had a significantly higher prevalence of obesity (19.3%, 95%CI: 15.0%-24.5%) than 8th grade students (10.0%, 95% CI: 7.0%-14.1%), which accounts for much of the variation observed by grade level. The prevalence of obesity and overweight in 6th grade Kansas students also breaks the typical pattern of the overweight prevalence being notably, if not significantly, larger than the subpopulation obesity prevalence. Within the larger sub-

populations such as non-Hispanic middle school students and middle school students with no physical disability, the prevalence of obesity is significantly lower than the prevalence of overweight. In the 6th grade subpopulation, the estimate of obesity (19.3%, 95% CI: 15.0%-24.5%) is not significantly different from the estimate of overweight (17.2%, 95% CI: 13.4%-21.9%).

Table 1. Kansas Middle School Student Weight Status by Demographic Groups, 2011/2012 YTS.

Demographic Category	Weight Status	Prevalence	95% Confidence Limits	
Female	Obese	12.0%	8.6%	16.4%
	Overweight	20.0%	15.6%	25.2%
Male	Obese	14.7%	11.4%	18.7%
	Overweight	20.2%	16.2%	24.9%
6th grade†	Obese	19.3%	15.0%	24.5%
	Overweight	17.2%	13.4%	21.9%
7th grade†	Obese	11.3%	7.9%	16.1%
	Overweight	22.6%	16.2%	30.5%
8th grade†	Obese	10.0%	7.0%	14.1%
	Overweight	20.5%	16.9%	24.5%
African American Only	Obese	16.8%	7.2%	34.2%
	Overweight	23.1%	13.5%	36.7%
Other Race	Obese	12.5%	7.3%	20.5%
	Overweight	26.4%	18.2%	36.7%
White Only	Obese	14.0%	10.5%	18.5%
	Overweight	17.7%	14.1%	22.1%
Hispanic	Obese	14.0%	8.1%	23.2%
	Overweight	17.0%	11.2%	24.9%
Non-Hispanic	Obese	13.0%	9.9%	17.0%
	Overweight	20.7%	17.6%	24.2%
No Physical Disability or Long-term Health Problem	Obese	11.2%	8.3%	15.0%
	Overweight	19.6%	16.5%	23.0%
Physical Disability or Long-term Health Problem	Obese	13.3%	5.9%	27.2%
	Overweight	22.8%	13.7%	35.7%

† Rao-Scott Chi-square $p < 0.05$.

Discussion

The 2011/2012 YTS included a question about physical disabilities and long-term health problems. Disability status is difficult to assess, particularly in students, but adult surveillance instruments have found it to be an important correlate of many negative health behaviors, such as tobacco use and sedentary lifestyle [5]. Weight status varied significantly by disability status in high school students on the 2011/2012 YTS, but this relationship was not observed in middle school students. There are a variety of potential explanations for this inconsistency that will inform future survey design. The physical disability question may, for instance, have been inappropriate for a younger audience and failed to provide a reliable measure of physical disability status in middle school students. Another possibility is that there are developmental differences between middle and high school students that impact the relationship between weight and disability status. Additional consideration of how disability is assessed on student surveys is warranted.

Other differences exist between Kansas middle school weight status results and national estimates. It has been shown, for instance, that non-Hispanic African American and Hispanic youth are at a higher risk of obesity than non-Hispanic white youth, but this relationship is not apparent in Kansas middle school students. This could be an issue of insufficient sample size or widening disparities as youth age, only becoming evident in high school.

The fact that the estimate of 6th grade obesity prevalence is not significantly different from the estimate for 6th grade overweight prevalence is troubling. The prevalence of overweight is

generally higher, often significantly higher, than the prevalence of obesity, both overall in middle and high school students and within subpopulations. Similarly, the prevalence of obesity in 6th grade students is nearly double the prevalence of obesity in 8th grade students. Only with continued surveillance can we determine if this disparity is an aberration or an indication of the continuing growth of the obesity epidemic in Kansas. These findings point to a need for continued surveillance of student health behaviors and health status. Additional planning for and implementation of efforts to address youth overweight and obesity are needed in Kansas.

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References

- Ogden CL, Carroll MD, Kit BK, Flegal KM. Prevalence of Obesity and Trends in Body Mass Index among US Children and Adolescents, 1999–2010. *JAMA* 307(5):483–90. 2012.
- Centers for Disease Control and Prevention (CDC). *1991–2011 High School Youth Risk Behavior Survey Data*. Available at <http://apps.nccd.cdc.gov/youthonline>. Accessed on October 4, 2012.
- Kuczmariski RJ, Ogden CL, Grummer-Strawn LM, et al. CDC Growth Charts: United States. Edward J. Sondik, Ph.D. Advance Data from Vital and Health Statistics; no. 314. Hyattsville, Maryland: National Center for Health Statistics. 2000.
- Centers for Disease Control and Prevention (CDC). *A SAS Program for the CDC Growth Charts*. Available at <http://www.cdc.gov/nccdphp/dnpao/growthcharts/resources/sas.htm>. Accessed on October 4, 2012.
- Kansas Department of Health and Environment (KDHE). *2009 Kansas Behavioral Risk Factor Surveillance System*. Available at <http://www.kdheks.gov/brfss/Survey2009/DataTableList2009.htm>, 2012

Drowning Deaths and Hospitalizations for Near Drowning, Kansas, 2006–2010

Introduction

The Centers for Disease Control and Prevention report that there were approximately ten deaths per day from drowning nationwide during 2005–2009, and that about 20 percent of those were children ages 14 and younger. Additionally, those numbers were exceeded by the number of non-fatal drowning injuries, some requiring hospitalization and potentially resulting in brain damage. [1]

Methodology

The current report examines deaths and hospital discharges among Kansas residents in the years 2006–2010 to assess the extent of the problem, the circumstances and populations affected, and to identify potential preventive measures which should be emphasized. Drowning deaths and near-drowning hospitalizations were identified by use of International Classification of Diseases (ICD) codes. Records with ICD-10 mortality codes W65–W74, X71, X92, and Y21 as underlying cause of death were selected from the Kansas Vital Records database, and records with ICD-9-CM (clinical modification) code 994.1, E830, E832, E910, E954, E964, or E984 were selected from hospital discharge data provided by the Kansas Hospital Association to the Kansas Department of Health and Environment.

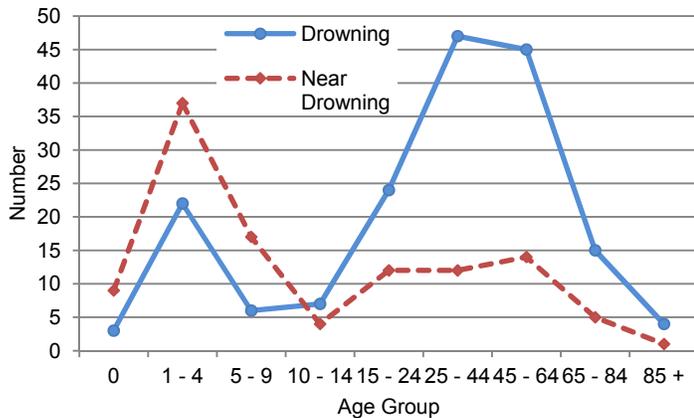
Results

Each year from 2006 to 2010, there were between 26 and 39 drowning deaths of Kansas residents and an additional 17 to 27 hospitalizations for near drowning. For the combined five-year period, there were 173 deaths by drowning and 111 individuals hospitalized for near drowning. Seventy percent (70.3%) of near-drowning hospitalizations occurred in June, July, or August, while

only 42 percent of drowning deaths occurred in those three months.

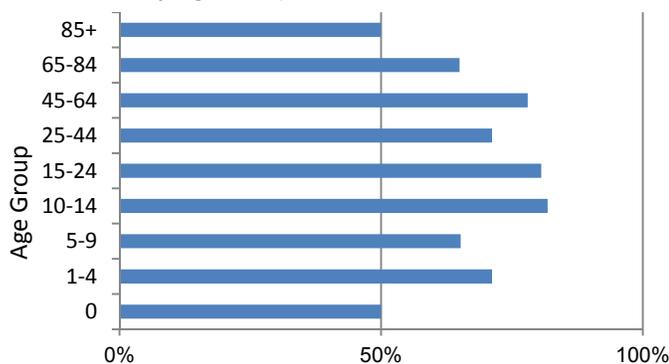
Children ages one to four years had the highest rates of drowning deaths and near-drowning hospitalizations (2.8 and 4.6 per 100,000 population, respectively) and had the highest number of hospitalizations for near drowning (Figure 1).

Figure 1. Drowning Deaths and Hospitalizations for Near Drowning by Age Group, Kansas, 2006-2010



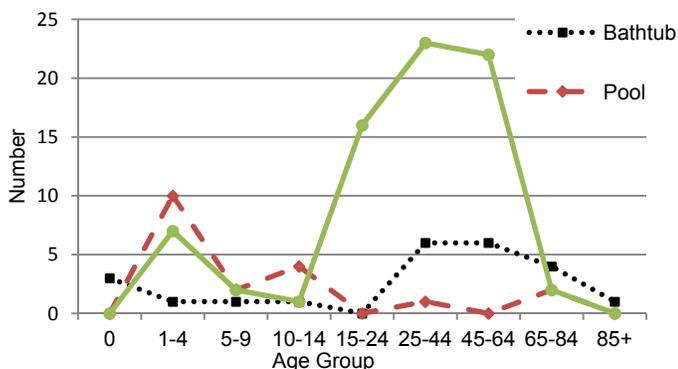
Drowning was the second leading cause of unintentional injury death for children ages one to four, following only motor-vehicle related injuries. If the numbers of drowning and near-drowning victims are combined, 37.3 percent were children ages 14 and below. Nearly three-fourths of the victims were male overall and in all age groups except infants (less than one year of age) and the very aged (85 years plus). (Figure 2)

Figure 2. Drowning Deaths and Near Drowning Hospitalizations Percent Male, by Age Group, Kansas 2006-2010



Children were most likely to have drowned in a swimming pool, followed closely by natural water (lake, river, etc.). For adults, natural water was the location of the greatest number of drowning deaths (Figure 3).

Figure 3. Drowning Deaths by Location By Age Group, Kansas, 2006-2010



Over one-fourth of drowning deaths of 25-64 year olds had some mention of alcohol, methamphetamines, or medications as contributing factors. Most of those deaths occurred in natural water, though three occurred in a bathtub (including hot tub). Seizures were reported for over one-fourth of deaths in bathtubs.

Discussion

The American Academy of Pediatrics cites adult supervision as an important strategy for prevention of drowning in children. However, this strategy alone is insufficient because drowning can occur during brief lapses of attention. [2]

The federal law *Virginia Graeme Baker Pool and Spa Safety Act* of 2008 requires public pools and spas to be equipped with anti-entrapment drain covers. Only scattered state laws and local building codes address pool barriers, usually requiring a minimum four-foot high, locked enclosure. Other safety features for pools and hot tubs include pool covers and alarms.

For all ages, swim lessons can provide training to keep an individual afloat until help arrives, and deaths can be prevented where bystanders have training in cardiopulmonary resuscitation. Older teens and adults should be made aware of the dangers of alcohol consumption in conjunction with water-related activities.

To really understand the potential difference in drowning epidemiology in Kansas compared to what is observed for the U.S. will take more in-depth analysis such as examining differences between drowning at pools and open water bodies.

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References

- Centers for Disease Control and Prevention *Water Injuries Fact Sheet*. Available at <http://www.cdc.gov/HomeandRecreationalSafety/Water-Safety/waterinjuries-factsheet.html>. Accessed August 31, 2012.
- Committee on Injury, Violence, and Poison Prevention and Jeffery Weiss. *Prevention of Drowning*. Pediatrics 2010; 126; e253; originally published online May 24, 2010. Available at <http://pediatrics.aappublications.org/content/126/1/e253.full.pdf+html>. Accessed November 27, 2012.

Kansas Influenza-like Illness Surveillance, 2011-2012

Influenza is not a nationally notifiable disease, nor is it a notifiable disease in Kansas. Because patient-level data are not reported to state health departments or to the Centers for Disease Control and Prevention (CDC), the burden of disease must be tracked through non-traditional methods. Influenza surveillance in Kansas consists of four components that provide data on outpatient influenza-like illness, influenza viruses, and influenza-associated deaths.

The Outpatient Influenza-like Illness Surveillance Network (ILINet) is a collaboration between the CDC and state, local, and territorial health departments. The purpose of the surveillance is to track influenza-like illness (ILI), recognize trends in influenza transmission, determine the types of influenza circulating, and detect changes in influenza viruses. Influenza-like illness is defined by the CDC as fever ($\geq 100^{\circ}\text{F}$ or $\geq 37.8^{\circ}\text{C}$, measured either at the ILINet site or at the patient's home) with cough and/or sore throat, in the absence of a known cause other than influenza.

The Bureau of Epidemiology and Public Health Informatics (BEPHI) at the Kansas Department of Health and Environment (KDHE) recruited health care providers throughout Kansas to participate in ILINet. Each week, ILINet site personnel determined the total number of patients seen with ILI during the previous week by age group — preschool (0-4 years), school age through college (5-24 years), adults (25-49 years and 50-64 years), and older adults (>64 years). In addition, the total number

of patients seen during the previous week for any illness was recorded. These data were submitted to the CDC via the internet or fax; sites are asked to report the previous week's data by noon each Tuesday.

When the surveillance period began during the week ending October 8, 2011, 47 health care providers were enrolled in ILINet. One pediatric site was added to the program during the week ending January 21, 2012. As a result, the 2011-2012 surveillance data were collected from 48 sites throughout the state: 30 family practice clinics, eight hospital emergency departments, six university student health centers, and four pediatric clinics.

During the influenza surveillance period starting October 2, 2011 (week 40) and ending May 19, 2012 (week 20), sites observed a total of 295,604 patients—3,686 (1.2%) sought care for ILI. Compared to previous years, this influenza season was particularly late. The rate of ILI rose steadily from January 2012

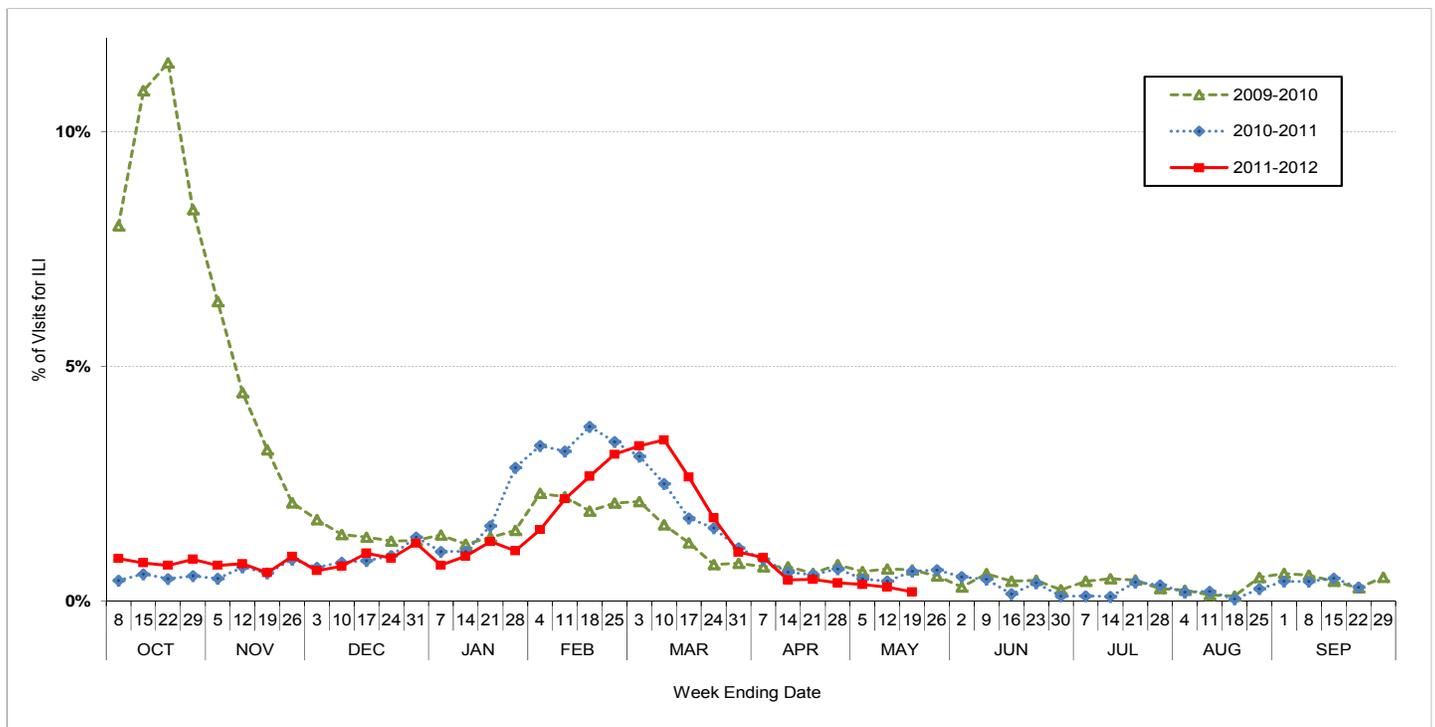
through March 2012. The ILI rate peaked at 3.4% during the week ending March 10, 2012; this is the latest peak of an influenza season in Kansas since surveillance began in 1995. Typically, ILI has peaked in December, January, or February. The rate of ILI dropped below 1% during the week ending April 7, 2012, and remained low through the end of the surveillance period.

ILINet is the cornerstone of KDHE's influenza surveillance activities, which also includes laboratory testing and mortality surveillance. ILINet relies on data submitted by volunteer sites — if you know of a family practice clinic, hospital emergency department, student health center, or pediatric clinic that may wish to participate in ILINet, please contact Amie Worthington (aworthington@kdheks.gov), 785-296-2898, KDHE's influenza surveillance coordinator.

Amie Worthington
Daniel Neises

Bureau of Epidemiology and Public Health Informatics

Figure 1. Percentage of Visits for Influenza-like Illness (ILI) Reported by ILINet Sites, Kansas, October 2011- May 2012 and Previous Two Surveillance Periods*



*ILINet sites may vary in number and type (student health, family practice, etc.) each season. Data from the previous two surveillance years are plotted according to week number corresponding to the 2011-2012 week ending date; for example, week 40 ended October 8, 2011, week 40 of 2010 ended October 9, 2010, and week 40 of 2009 ended October 10, 2009

Announcements

2011 Annual Summary Released

The 2011 Kansas Annual Summary of Vital Statistics is the latest edition of a report released by the Kansas Department of Health and Environment. The report serves as a baseline document used to assess the health of Kansans.

The report highlights a number of items of interest for 2011:

- Kansas increased in population from 2,853,118 residents in 2010 to 2,871,238 residents in 2011, according to U.S. Census Bureau estimates.
- In the past 20 years, population increases of 56.5 percent in residents 45-54 years of age and 69.6 percent in residents 55-64 years of age reflected the aging of the baby boomers.
- In 2011, there were 39,628 live births to Kansas residents, 811 fewer than in 2010.
- The 2011 Kansas birth rate (13.8 per 1,000 population) is the lowest since Kansas created a Vital Records system in 1912.
- The only year with a similar birth rate was 1973, when the birth rate was 13.9 per 1,000 population.
- Seven (7.2%) percent of infants born to Kansas mothers in 2011 had low birth-weights (under 2,500 grams). Low birthweights were more common for Black non-Hispanic infants (13.5%) than for White non-Hispanic (6.7 %) or Hispanic (6.6%) infants.
- The percent of Kansas mothers receiving inadequate prenatal care in 2011 (12.9%) decreased 9.2 percent from 2010.
- There were 247 infant deaths to Kansas residents in 2011, a decrease of 2.4 percent from 253 infant deaths in 2010.
- The disparity in the infant, neonatal, and post neonatal death rates between White non-Hispanics and Black non-Hispanics continues to be a public health concern. The Black non-Hispanic infant death rate in 2011 (12.9 deaths per 1,000 live

births) was 2.4 times higher than the rate for White non-Hispanics (5.3 deaths per 1,000 per live births).

- Out-of-wedlock births decreased slightly from 37.7 percent in 2010 to 37.2 percent in 2011. This is the first decrease in the percentage of out-of-wedlock births since 1951.
- The Kansas 2011 teen pregnancy rate (20.9 pregnancies per 1,000 female teens) decreased 9.5 percent from a rate of 23.1 in 2010.
- Almost half of the abortions performed in Kansas in 2011 were for non-Kansans. The abortion ratio for Kansas residents in 2011 was 99.6 abortions per 1,000 live births, a decrease of 4.6 percent from a ratio of 104.4 in 2010.
- Cancer displaced heart disease as the leading cause of death in Kansas in 2011, continuing a pattern of annual exchange of the leading cause of death between these two causes which began in 2009.
- Unintentional injuries were the leading cause of death in 2011 for each of the age groups under 45 years of age. For each of the age groups between 45 and 84, the leading cause of death was cancer; and for ages 85 and above, the leading cause of death was heart disease.

The tables and charts contained in this report represent only a glimpse of the insight that can be gained from the data reported on live births, deaths, stillbirths, marriages, marriage dissolutions (divorce and annulment), and abortions recorded annually. It can be found at <http://www.kdheks.gov/bephi/>. To obtain more details from the wealth of information about Kansas vital events, please visit Kansas Information for Communities, the Division of Health tool to create specific analyses, at <http://kic.kdhe.state.ks.us/kic/>. Persons needing additional data can call (785) 296-8627.

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Table 1. Selected Vital Events and Percent Change Kansas, 2011, 2010, and 1992

Vital Event	2011	2010	Percent Change 2010-2011	1992	Percent Change 1992-2011
Live Births	39,628	40,439	-2.0	37,848	4.7
Out-of-Wedlock Births	14,749	15,241	-3.2	9,183	60.6
Stillbirths	188	168	11.9	216	-13.0
Hebdomadal Deaths	121	143	-15.4	165	-26.7
Perinatal Period III Deaths	309	311	-0.6	381	-18.9
Neonatal Deaths	157	170	-7.6	199	-21.1
Infant Deaths	247	253	-2.4	332	-25.6
Maternal Deaths	4	7	-42.9	2	100.0
Deaths	24,114	24,428	2.8	22,052	13.9
Marriages	17,897	18,150	-1.4	21,845	-18.1
Marriage Dissolutions	10,445	10,579	-1.3	12,365	-15.5
Abortions	3,946	4,223	-6.6	6,231	-36.7

Residence data are presented for births, deaths, and abortions.

Occurrence data are presented for marriages and marriage dissolutions

Annual Kansas Infectious Disease Summary for 2011

The Annual Kansas Infectious Disease Summary for 2011 is now online. The report, prepared by the Kansas Department of Health and Environment (KDHE), Bureau of Epidemiology and Public Health Informatics (BEPHI) is available at http://www.kdheks.gov/epi/download/disease_summary/dissu_m_current.htm.

The report analyzes the frequencies, rates, and trends for reportable diseases and conditions in the state. A supplement to the report contains disease breakouts by county.

In Kansas and other states, infectious diseases are a growing threat to public health and have a significant impact on healthcare costs [1]. The Centers for Disease Control and Prevention (CDC) reports under-vaccinated populations are at risk for outbreaks of diseases that are vaccine-preventable, including measles, pertussis, and mumps [2].

Since the declaration in 2000 that measles had been eliminated in the United States, several importations of the disease have occurred. In 2011, Kansas reported seven cases. Despite the introduction of new pertussis vaccines in 2006, outbreaks have been occurring around the country. Kansas had 52 confirmed cases of pertussis in 2011.

Physicians, hospitals, laboratories, and local health departments contribute to the reporting and investigation of infectious

and reportable diseases. Food borne illness outbreaks are investigated by BEPHI and the Kansas Department of Agriculture.

Year-to-date tracking of reportable diseases in Kansas is maintained online at

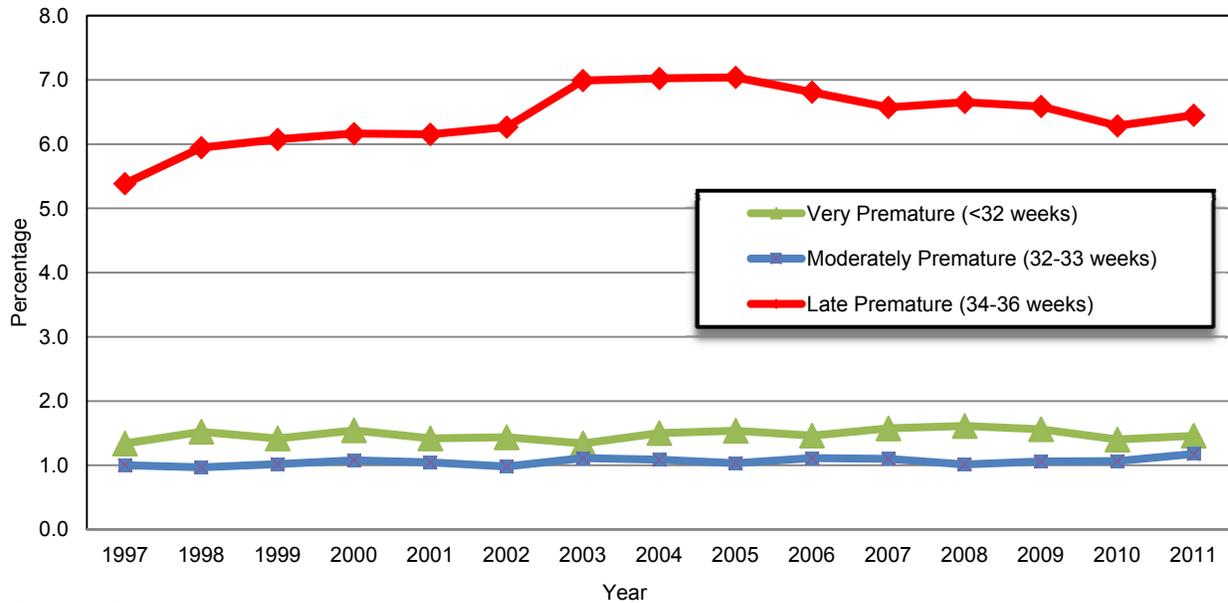
http://www.kdheks.gov/epi/download/All_Disease_Counts_Summary.pdf. For more information about the BEPHI, visit the Infectious Disease Epidemiology and Response web page at <http://www.kdheks.gov/epi/index.html>.

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References

1. FY 2000 Performance Plan - Revised Final FY 1999 Performance Plan. Centers for Disease Control and Prevention. [Internet] 2000. Available from <http://www.cdc.gov/program/performance/fy2000plan/2000iv.htm>. October 10, 2012
2. Online Performance Appendix FY2012 Centers for Disease and Prevention Control. [Internet] 2012. http://www.cdc.gov/fmo/topic/Performance/performance_docs/FY2012_CDC_Online_Performance_Appendix.pdf October 10, 2012

Percent of Premature Births by Category and Year, Kansas, 1997-2011



Residence Data

Source: KDHE Bureau of Epidemiology and Public Health Informatics

Each year in the United States, about 500,000 babies are born too soon. Premature births are those that occur when gestation is less than 37 weeks. Governor Sam Brownback’s Roadmap for Healthy Kansas Families is to excel in education. Children born about three months prematurely are three to four times more likely to struggle in school than children born full term. While the state’s percent of preterm births (9.1% in 2011) was lower than the Healthy People 2020 target (11.4%), prematurity remains a leading factor in Kansas resident infant deaths.

For ways to address prematurity, visit Kansas Health Matters Promising Practices at <http://www.kansashealthmatters.org/modules.php?op=modload&name=PromisePractice&file=index> using the search words ‘preterm’ or ‘premature.’ Community resources can also be search at the Kansas Resource Guide, <http://www.ksresourceguide.org/>.

The Public Health Informatics (PHI) of the Kansas Department of Health and Environment's Bureau of Epidemiology and Public Health Informatics produces *Kansas Health Statistics Report* to inform the public about availability and uses of health data. Material in this publication may be reproduced without permission; citation as to source, however, is appreciated. Send comments, questions, address changes and articles on health data intended for publication to: PHI, 1000 SW Jackson, Suite 130 Topeka, KS, 66612-1354, Kansas.Health.Statistics@kdheks.gov, or 785-296-8627. Robert Moser, MD, Secretary KDHE; D Charles Hunt, MPH, State Epidemiologist and Director, BEPHI; Elizabeth W. Saadi, PhD, State Registrar, Deputy Director, BEPHI; Greg Crawford, Editor.

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