



# Kansas Health Statistics Report

Kansas Department of Health and Environment – Division of Health  
Bureau of Public Health Informatics – No 44 – February 2010

## New Annual Research Summary: Selected Special Statistics, Stillbirths and Infant Deaths Kansas, 2008

Infant mortality is an important indicator of the health of a community or state. It is associated with a variety of factors such as economic development, general living conditions, social well-being, where basic needs are met, rates of illness such as diabetes and hypertension and quality of the environment. [1]

The purpose of this report is to move beyond single-year statistics reported in the *Annual Summary of Vital Statistics* and provide a more long-term view of stillbirth and infant mortality data and statistics. Findings include the following:

- In the last century, the infant mortality rate (IMR) has decreased dramatically (90.2%) from 73.5 deaths/ 1,000 live births in 1912 (2,795 infant deaths) to 7.2 in 2008 (303 infant deaths). Even since 1989, the overall trend in infant mortality rates decreased significantly.
- The Kansas infant mortality trend did not decline in the last five years.
- In the last 20 years (1989-2008), the Black non-Hispanic infant death rate remained at least twice that of the White non-Hispanic population.
- The counties with the highest number of infant deaths (2004-2008) included Sedgwick County (323 or 21.4% of the total), Johnson County (235 or 15.6% of the total), Wyandotte County (135 or 8.9% of the total) and Shawnee County (115 or 7.6% of the total). These four counties accounted for 53.5 percent of the infant deaths.
- The counties with the highest infant mortality rates and a relative standard error of 30 percent or lower included Cloud (19.6), Allen (13.7), Atchison (11.0), Barton (10.7) and Geary (10.5), while the counties with the lowest rates were Harvey (5.0), Lyon (5.3), Finney (5.4), Miami (5.5) and Riley (5.7).
- Analysis of linked birth/death data (2005-2008) shows that prematurity or low birth weight is a primary risk factor in infant deaths (about 62 %).
  - Prematurity is an important risk factor for the non-Hispanic Black population (75.3% of infant deaths); non-Hispanic White population (60.6%) and the Hispanic population (59.3%).
  - Gestational age-specific analysis shows an infant mortality rate of 46.8/1,000 live births for infants born prematurely, 16 times that for infants weighing 2,500 grams or more (2.9/1,000).
  - Similarly, the infant mortality rate for very premature infants (214.4/1,000) is 74 times higher than the rate for infants born weighing 2,500 grams or more.

The new report that summarizes vital records data on stillbirths and infant deaths can be found at <http://www.kdheks.gov/bphi/index.html>. Persons inquiring about additional data needs can call (785) 296-8627.

Carol Moyer, MPH RN  
Office of Health Assessment

### Reference

1. Reidpath D & Allotey P. (2003). Infant Mortality rate as an indicator of population health. *J. Epidemiol Community Health*, 57, 344-346

## Status of Obesity in Kansas – 2008

### Background

Population assessment of obesity is done by calculating Body Mass Index (BMI). Categories of BMI indicate ranges of body weight. [7] It is an inexpensive and easy-to perform method of screening for weight categories that may lead to health problems. [6] An adult who has a BMI of 30 or higher is considered obese. [7] During the past 20 years there has been a dramatic increase in obesity in the United States. [1] More than one third of U.S. adults, i.e. more than 72 million people are obese. [5] Obesity has physical, psychological, and social consequences in adults. [5] Health risks of obesity include coronary heart disease, stroke, hypertension, dyslipidemia, arthritis and type-2 diabetes. [2, 5] Apart from physical ailments, people suffering from obesity also face psychological problems, including depression, appearance consciousness, and lack of self-confidence. [8] In 2000, obesity-related health care costs totaled an estimated \$117 billion. [5] The medical costs of obesity reached an estimated \$147 billion in 2008. [15] Between 1987 and 2001, diseases associated with obesity account for 27% of the increases in medical costs. [5] Medical expenditures for obese workers are 29 percent, 17 percent greater than expenditures for workers with normal weight. [5]

### Objective

This study aims at examining prevalence of obesity among Kansans in various population subgroups using 2008 Kansas Behavioral Risk Factors Surveillance System (BRFSS) data. [4]

### Method

2008 Kansas BRFSS data were analyzed. Kansas BRFSS is an annual population-based random digit-dial telephone survey, tracking health conditions and risk behaviors of non-institutionalized adults ages 18 years and older, residing in a private residence with a landline telephone. In Kansas, BRFSS is the only population-based data source for examining prevalence of obesity. Sample size for the 2008 BRFSS survey was 8,628 respondents. In accordance with CDC's definition, Kansas BRFSS defined obesity as a BMI equal to or greater than 30 kg/m. [2] The BMI of the respondents was calculated from self-reported weight and height at the time of the survey interview. Age-adjusted prevalence of obesity was examined in various categories of variables related to sex, race, ethnicity, annual household income, education, disability status, general health status, leisure time physical activity and recommended levels of physical activity status. In addition, the prevalence of obesity was analyzed in relation to comorbidities such as diabetes, hypertension, asthma, and high blood cholesterol. Prevalence of obesity was also examined in relation to fruit and vegetable consumption status and ever-diagnosed (lifetime) de-

<b>Inside</b>	
<b>Stillbirth and Infant Death Statistics Report.....</b>	<b>1</b>
<b>Status of Obesity in Kansas – 2008 .....</b>	<b>1</b>
<b>Aging of Kansas Primary Care Physicians .....</b>	<b>4</b>
<b>Tobacco Contributions to Mortality .....</b>	<b>5</b>
<b>Overview of Trauma Falls .....</b>	<b>7</b>
<b>New Legislative Statistics Issued.....</b>	<b>7</b>
<b>Kansas Community Discharge Data added to KIC .....</b>	<b>7</b>

pression status. There was too small of sample size to analyze the association of obesity with coronary heart disease, myocardial infarction, and stroke. Weighted analysis of Kansas BRFSS data was performed using SAS 9.1.3 software.

## Results

The weighted survey data estimated that more than one in four adults ages 18 years and older in Kansas, i.e. 28 percent, were obese.

Table 1. Age-adjusted prevalence of obesity in adults age 18 years and older by selected demographic characteristics in Kansas, 2008

Population Subgroups (by demographic characteristics)	Prevalence of Obesity		
	Weighted Percentage	95% Confidence Interval	
		Lower Limit	Upper Limit
<b>Gender Groups</b>			
Male	29.7	27.6	31.7
Female	26.3	24.7	27.9
<b>Ethnicity Groups</b>			
Hispanic	34.6	29.1	40.2
Non-Hispanic	27.6	26.3	29.0
<b>Race Groups</b>			
White Only	27.4	26.0	28.8
African American Only	43.7	36.6	50.8
Other Races Only*	26.4	22.3	30.5
<b>Annual Household Income Levels</b>			
<\$25,000	32.8	29.3	36.3
\$25,000 to \$49,999	31.7	29.0	34.4
\$50,000 or more	25.9	24.0	27.9
<b>Education Status</b>			
≤ High school graduate/GED	30.5	28.1	32.9
Some college/College graduate	26.8	25.3	28.4

\*Other races include Asian, American Indian/Alaska Native, Native Hawaiian or Pacific Islander, any other race and more than one race.

Kansas BRFSS 2008 results showed that men had a higher prevalence (29.7%) of obesity than women (26.3%) (Table 1). Hispanics had higher prevalence (34.6%) than non-Hispanics (27.6%). African-Americans had significantly higher prevalence (43.7%) than Whites (27.4%). Prevalence of obesity was high among the low-income population. A decrease in annual household income corresponded to an increase in obesity prevalence, which was significant for categories less than \$25,000 as compared to more than \$50,000 per year. Obesity prevalence was higher among adults with lower education status; however the difference was not statistically significant when compared to adults with higher education status.

The prevalence of obesity was significantly higher (47.6%) among the adults who reported having fair or poor general health as compared to the adults who reported having excellent to good (25.5%) as general health status (Table 2). More than one in three (39%) adults who reported living with disability was obese as compared to 24.8 percent of adults who reported living without disability. Prevalence of obesity was significantly higher among individuals who did not participate in leisure-time physical activity (33.2%) as compared to those who participated (26.1%). Prevalence of obesity was high among those who did not eat five servings of fruits and vegetables per day (29.3%) as compared to those who ate five or more servings of fruits and vegetables per day (22.4%).

Table 2. Age-adjusted prevalence of obesity in adults age 18 years and older by general health, disability status, and behavioral risk factors in Kansas, 2008

Population Subgroups (by general health, disability status and behavioral risk factors)	Prevalence of Obesity		
	Weighted Percentage	95% Confidence Interval	
		Lower Limit	Upper Limit
<b>General Health Status</b>			
Excellent-Good	25.5	24.2	26.8
Fair-Poor	47.6	42.2	53.0
<b>Disability Status</b>			
Living with a Disability	39.1	35.5	42.7
Living without a Disability	24.8	23.4	26.2
<b>Leisure Time Physical Activity</b>			
Participate	26.1	24.6	27.6
Do not participate	33.2	30.3	36.0
<b>Recommended Level of Physical Activity*</b>			
Meets recommendation	22.2	19.7	24.8
Does not meet recommendation	33.1	30.4	35.9
<b>Fruits and Vegetables Consumption</b>			
Eats fruits and veggies five or more times a day	22.4	18.5	26.3
Does not eat fruits and veggies five times a day	29.3	27.2	31.3

\* Recommended Level of Physical Activity: Adults that have reported participating in either moderate physical activity defined as 30 or more minutes per day for five or more days per week, or vigorous activity defined as 20 or more minutes per day on three or more days meet the recommendation.

Table 3. Age-adjusted prevalence of obesity in adults age 18 years and older by chronic health conditions in Kansas, 2008

Population Subgroups (by chronic health conditions)	Prevalence of Obesity		
	Weighted Percentage	95% Confidence Interval	
		Lower Limit	Upper Limit
<b>Diabetes</b>			
Present	64.9	54.5	75.2
Absent	25.7	24.4	27.1
<b>Hypertension</b>			
Present	42.6	37.5	47.6
Absent	22.6	20.6	24.6
<b>High Blood Cholesterol (Among those who were ever tested for cholesterol)*</b>			
Present	38.4	33.0	43.8
Absent	27.4	24.6	30.1
<b>Current Asthma</b>			
Present	38.5	34.0	43.1
Absent	27.1	25.7	28.4
<b>Lifetime Depression</b>			
Present	35.1	30.2	40.1
Absent	28.5	26.5	30.5

\* Among respondents who had ever had their cholesterol checked and had been told by a doctor or health care professional that they have high blood cholesterol.

More than one in two adults with diabetes (64.9%) were obese as compared to about one in four adults without diabetes (25.7%) (Table3). Nearly one in two adults with hypertension (42.6%) were obese as compared to less than one in four adults

without hypertension (22.6%). A higher prevalence of obesity was observed among adults who reported having current asthma (38.5%) as compared to adults not having current asthma. Prevalence of obesity was higher among individuals with diagnosed lifetime depression (35.1%) as compared to individuals without lifetime depression (28.5%).

## Discussion

Racial/ethnic disparities in overweight and obesity are well documented in many studies; with the racial/ethnic disparities being more pronounced and consistent among women. [14] The 2008 Kansas BRFSS showed similar results. Higher prevalence of obesity was observed among Hispanics and African Americans as compared to their counterparts.

Research shows that obese individuals are more likely to experience greater than 14 unhealthy days affecting their physical health domain. [12] Lower Health-Related Quality of Life (HRQOL) is associated with higher body mass index (BMI). [12, 13] Similar results were seen in our analysis. In Kansas, adults who reported having fair or poor general health had higher prevalence of obesity as compared to the adults who reported having excellent to good as their general health status.

Lifestyle factors including excess calorie and fat intake and low levels of physical activity are central causes of obesity. [11] Studies show a strong association among adults having lower self-efficacy of eating fruits and vegetables, not meeting physical activity guidelines, and the likelihood of being obese. [8] As mentioned earlier, similar results were found. Prevalence of obesity was significantly higher among individuals who did not participate in leisure-time physical activity and among those who did not eat five servings of fruits and vegetables per day.

Obesity is a major risk factor for development and progression of hypertension and diabetes, which often coexist in obese patients. [9] Kansas BRFSS showed similar results; comorbidities like diabetes, hypertension, high blood cholesterol and asthma were highly associated with obesity. Significantly higher prevalence of obesity was seen among adults having any of these conditions.

Research also shows that depression and anxiety are independently associated with chronic health conditions (e.g. obesity, history of a stroke, diabetes, asthma). [10] 2008 Kansas BRFSS data showed higher prevalence of obesity among adults with diagnosed lifetime depression, though it was not statistically significant when compared to adults without diagnosed lifetime depression.

In conclusion, results of Kansas BRFSS 2008 showed that prevalence of obesity is high among adult Kansans. Disparities related to obesity exist among different population subgroups in Kansas. Socio-demographic characteristics were seen to be associated with prevalence of obesity. Higher prevalence of obesity was observed among individuals with lifestyle related behavioral risk factors such as lack of physical activity and inadequate fruits and vegetable consumption. Obesity was also associated with psychological problems such as lifetime depression. Chronic conditions like diabetes, hypertension and asthma co-existed with obesity. These data showed that obesity is an important public health issue in Kansas. Public health strategies directed towards environmental, system and policy changes should be designed to address this issue and related disparities.

*Nimisha Bhakta, MPH  
Ghazala Perveen, PhD, MPH, MBBS  
Behavioral Risk Factors Surveillance System*

## References

1. <http://www.cdc.gov/obesity/data/trends.html>
2. Centers for Disease Control and Prevention. Differences in Prevalence of Obesity among Black, White, and Hispanic Adults - United States, 2006–2008. *MMWR* 2009; 58: [740-744].
3. <http://www.cdc.gov/obesity/data/trends.html>

4. Kansas BRFSS, Bureau of Health Promotion, Kansas Department of Health and Environment, 2008.
5. <http://www.cdc.gov/chronicdisease/resources/publications/AAG/obesity.htm>
6. [http://www.cdc.gov/healthyweight/assessing/bmi/adult\\_bmi/index.html](http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html)
7. <http://www.cdc.gov/obesity/defining.html>
8. Fuzhong Li et al. (2009). Obesity and the Built Environment: Does the Density of Neighborhood Fast-Food Outlets Matter? *Am J Health Promot.* 2009; 23(3): 203–209.
9. Guixiang Zhao et al. (2009). Weight control behaviors in overweight/obese U.S. adults with diagnosed hypertension and diabetes. *Cardiovascular Diabetology* doi:10.1186/1475-2840-8-13
10. Fan AZ, Strine TW, Huang Y, Murray MR, Musingo S, Jiles R, et al. Self-rated depression and physician-diagnosed depression and anxiety in Florida adults: Behavioral Risk Factor Surveillance System, 2006. *Preventing Chronic Disease* 2009; 6(1). [http://www.cdc.gov/pcd/issues/2009/jan/07\\_0227.htm](http://www.cdc.gov/pcd/issues/2009/jan/07_0227.htm).
11. Karin M. Nelson (2006). The Burden of Obesity Among a National Probability Sample of Veterans. *J GEN INTERN MED* 2006; 21:915–919
12. Hassan MK, Joshi AV, Madhavan SS, Amonkar MM. Obesity and health-related quality of life: a cross-sectional analysis of the US population. *International Journal Obesity Related Metabolic Disorders.* 2003 Oct; 27(10):1227-32.
13. Fontaine KR, Barofsky I. Obesity and health-related quality of life. *Obesity Reviews.* 2001 Aug; 2(3):173-82.
14. Dong-Chul Seo, Mohammad R. Torabi. Racial/Ethnic Differences in Body Mass Index, Morbidity and Attitudes toward Obesity among U.S. Adults. *Journal of the National Medical Association* Vol. 98, No. 8, August 2006.
15. Centers for Disease Control and Prevention. Highest Rates of Obesity, Diabetes in the South, Appalachia, and Some Tribal Lands. Press Release. November 19, 2009.

## The Aging of the Kansas Primary Care Physician Workforce and Vulnerability of Counties for Access to Health Care

### Background

As the Kansas population continues to increase and to age, primary care physicians (PCPs) are becoming less plentiful. Although the number of Kansas full-time equivalency (FTE) PCPs increased two percent from 2007 to 2008 (1,545.32 to 1,577.61) [1], the number of physicians indicating primary care specialties decreased 7.6 percent for the same period (2,356 to 2,177). [2]

### Objective

Access to primary care physician services is an important issue critical to addressing the health needs of our population. Between 2000 and 2020 the Kansas population is projected to increase 12 percent, while the population age 65 and over, the age segment needing the most medical care, will grow 46 percent. [3] Knowledge of where our primary care physicians nearing retirement work and where our populations of most need are located may help planners better understand issues surrounding the state's physician supply and demand.

### Method

Data used to prepare the *Kansas Primary Care Physician FTE Report by County 2008* data are used for this analysis. These data are licensure and practice location data obtained courtesy of the Kansas State Board of Healing Arts via the Kansas Health Policy Authority and maintained at the Office of Health Assessment, Kansas Department of Health and Environment. Calculations of full-time equivalents (FTEs) and ratios are prepared according to the guidelines set forth by the Code of Federal Regulations for physicians. [4] Primary Care physicians are defined as those individuals practicing in one or more of the following specialties and one or more of the following work settings as shown in Table 4.

Table 4. Primary Care Specialties and Work settings

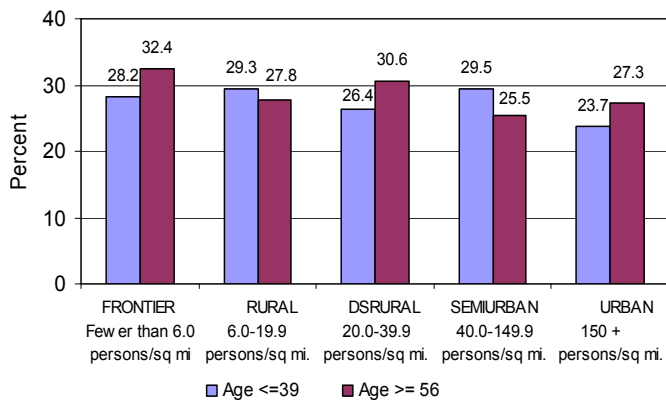
Specialties	Work settings
Adolescent Medicine	Federally Qualified Health Center
Family Practice	Free Standing Clinic
General Practice	General Hospital
Internal Medicine	Self-Employed, Solo Practice
Obstetrics	Local Health Department
Obstetrics/Gynecology	Partnership/Group Practice Office
Pediatrics	Rural Health Clinic Medical School/Teaching Hospital

The Kansas Information for Communities population data were used to prepare dependency ratios by age category and peer groups. [5]

**Results**

In Kansas, 27.6 percent of primary care physician Full Time Equivalents (FTEs) are physicians age 56 or older. Kansas county peer group data show that rural and semi-urban groups have a greater percent of primary care physician FTEs that are age 39 or younger than they have primary care physician FTEs that are age 56 or older. Frontier, densely settled rural and urban groups have a smaller percent of primary care physician FTEs that are age 39 or younger than they have primary care physician FTEs that are age 56 or older (Figure 1).

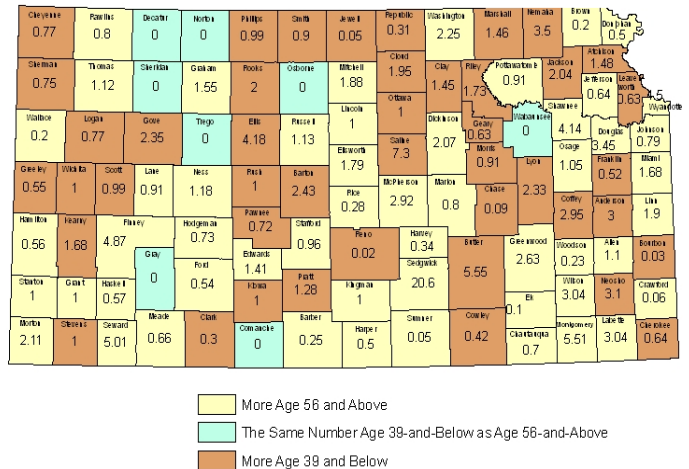
Figure 1. Percentage of Primary Care Physicians Age 39 or Younger / 56 or Older by County Peer Group, Kansas 2008



One of the primary findings from the 2007 *Kansas Physician Workforce Report* conducted by the University of Kansas School of Medicine states that even with “the state’s physician supply expected to increase over the next two decades, Kansas will likely remain behind most other states due to physician demand trends and increased rates of out-migration of medical school graduates, interns, and residents as a result of expansion of practice opportunities and educational programs in geographically contiguous states and nationwide” [6].

As illustrated in Figure 2, light shading indicates that 53 (50.5 percent) Kansas counties have a greater proportion of primary care physician FTEs who are age 56 or older (for example, Shawnee County has 4.14 more FTEs that are => Age 56). The heavy shading indicates that 44 (41.9 percent) Kansas counties have a greater proportion of primary care physician FTEs who are age 39 or younger ( for example Jackson County has 2.04 more FTEs that are =<Age 39). The medium shaded counties represent seven counties that have the same number of physicians age 39-and-below as age 56-and-above.

Figure 2. Difference in Number of FTEs for Younger and Older Primary Care Physicians, Kansas 2008

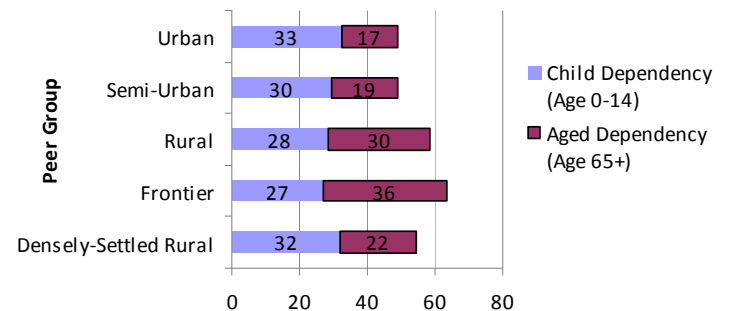


Published by:  
Kansas Department of Health and Environment  
Office of Health Assessment  
Information Technology, GeoSpatial Services

Date of Publication: January 2010  
Data Source:  
Kansas Cartographic Dataset  
OHA

Given the higher proportion of elderly residents in Kansas’ rural and frontier areas and of children in the densely-settled rural, semi-urban and urban areas – two populations often requiring more health care – the consequences of provider shortages are far reaching. This data also illustrates that all peer groups have about a 50 percent or higher dependency population with the frontier group having the largest at 63 percent (Figure 3).

Figure 3. Population Dependency Ratios by County Peer Group by Dependency Category, Kansas 2008



**Conclusion**

It is particularly critical that those counties in peer groups that have older physicians focus heavily on recruiting younger primary care physicians for practice in their area just to meet the current demand. All Kansas counties will need to focus on training, recruiting, and retaining younger primary care physicians both to replace those who are retiring and to address the rising demand for primary care services due the expansion and the aging of the Kansas population.

Rachel Lindbloom, MA, LCSW  
David Clark  
Office of Health Assessment

**References**

1. The Kansas Information for Communities, Health Professions, FTE Report. <http://kic.kdhe.state.ks.us/kic/OHA/reports/excel/Primary%20Care%20Health%20Care%20FTEs%20by%20Year.xls> Accessed October 15, 2009.
2. The Kansas Information for Communities, Health Professions, Standard Report. <http://kic.kdhe.state.ks.us/kic/OHA/reports/excel/KIC%20standard%20reports.xls> Accessed October 15, 2009.

3. Health Resources and Services Administration, (2004) State Health Workforce Profiles Highlights Kansas. <http://bhpr.hrsa.gov/healthworkforce/reports/statesummaries/kansas.htm> Accessed December 22, 2009.
4. Code of Federal Regulations, Public Health, Parts 1 to 399, Revised as of October 1, 1996, Public Health Service Act, Part 5, Designation of Health Professional(s) Shortage Areas.
5. The Kansas Information for Communities, Kansas Population Table by County. [http://kic.kdhe.state.ks.us/kic/popeth\\_table.html](http://kic.kdhe.state.ks.us/kic/popeth_table.html) Accessed October 15, 2009.
6. Kansas University School of Medicine, (2007) Kansas Physician Workforce Report. <http://www.kumc.edu/som/documents/KansasPhysicianWorkforceReport.pdf> Accessed September 9, 2009.

## Physician Indication of Tobacco Contributions to Mortality on the Kansas Death Certificate, 2005-2008

Tobacco smoking was responsible for an estimated 467,000 U.S. deaths (19.1 percent of 2.448 million total U.S. deaths) in 2005. [1] Tobacco use has been linked to at least 25 major diseases, including ischemic heart disease, stroke, hypertensive disease, diabetes mellitus, several types of cancer (lung, mouth, pharynx, esophagus, stomach, liver, pancreas, cervix uteri, bladder, leukemia, colorectal, and kidney), chronic obstructive pulmonary disease and other respiratory diseases, and tuberculosis. In a recent presentation, KDHE Director of Health Dr. Jason Eberhart-Phillips stated, “our top two health challenges” are tobacco and obesity. [2]

Dr. Eberhart-Phillips quoted estimates from national models that the effects of tobacco use kill at least 3,900 Kansans each year. On average, Kansas physicians, coroners, and medical examiners have identified tobacco use as a contributing factor in 3,705 deaths per year in the 2005-2008 period, while marking the question about tobacco contribution to death “Unknown” on at least a third of all certificates each year. Since tobacco use was likely a contributing cause in least some of the events for which tobacco contribution was entered as “Unknown,” the difference between model estimates and physician diagnosis is not significant.

### Method

Since 2005, the Kansas Death Certificate has included the question “Did tobacco use contribute to death?” (To prevent the presence of this question from predisposing the physician’s responses in the section on Cause of Death it is placed after that section.) Four responses are permitted: “Yes”, “No”, “Probably”, and “Unknown”.

Unless otherwise stated, in the analyses that follow, the denominators for the percentages reported are the numbers of deaths for which the contribution of tobacco is known, omitting the “Unknown” responses from the totals. Numerators are calculated by combining “Yes” and “Probably” responses.

The analyses are based on Kansas occurrence deaths, not Kansas residence deaths. Tobacco information is not always available on death certificates for Kansas residents who died out of state, largely due to the fact that some states have not yet switched to the new form of the death certificate that Kansas adopted in 2005, and therefore do not have a question about the contribution of tobacco on their certificates.

Cause of death analyses are based on underlying cause of death only, with no consideration given to any additional contributing causes. ICD-10 codes are grouped into the List of 113 Selected causes of Death [3]. Cause groups with little tobacco contribution noted on the death certificate, or with less than 100 deaths where the tobacco contribution is known, are grouped in an “All Other Causes” category.

## Results

During the period 2005-2008 there were 96,431 Kansas occurrence deaths. The certifying physician stated that tobacco use contributed, or probably contributed to 14,822 of these deaths (3,705.5 deaths per year), that it did not contribute to 45,382 deaths and that it was unknown whether tobacco was a contributing factor in 36,227 deaths. The percentage of “Unknown” responses was 34 percent of all deaths in 2005, increasing to 39 percent of all deaths in 2007 and 2008.

Overall, tobacco contributed, or probably contributed, to 24.6 percent of Kansas occurrence deaths where the tobacco contribution to the death was known in the period 2005-2008. A tobacco contribution to mortality was reported more frequently for men than for women (32.3% vs. 18.0% of cases where the tobacco contribution to the death was known).

Tobacco use was indicated as a contributing factor to mortality more frequently for the White non-Hispanic population group (24.9%) than for non-Hispanic Blacks (22.9%) or for Hispanics (12.8%). Results for the remaining, smaller population groups may be found in Table 5.

Table 5. Tobacco contribution to mortality by population group, Kansas occurrence deaths, 2005-2008

Population Group	Number “Y” or “P”	% of Known
White non-Hispanic	13,674	24.9
Black non-Hispanic	638	22.9
Hispanic Any Race	168	12.8
Native American NH	151	37.8
Other/Multi NH	140	27.6
Asian/Pacific Islander NH	40	12.9
Unknown Race, NH	11	28.9

Tobacco-related mortality is most commonly reported for decedents between 55 and 64 years of age (44.4%) and between 65 and 74 years of age (44.3%). Lower tobacco-related mortality starting at age 75 may be due to the longer life expectancy of females, who have less overall tobacco-related mortality (Table 6).

Table 6. Tobacco contribution to mortality by age group, Kansas occurrence deaths, 2005-2008

Age Group	Number “Y” or “P”	% of Known
0-4	5	0.5
5-14	1	0.5
15-24	13	1.4
25-34	49	5.4
35-44	262	16.9
45-54	1,171	31.6
55-64	2,515	44.4
65-74	3,796	44.3
75-84	4,772	29.3
85+	2,235	10.5

Geography has little or no role in predicting the incidence of tobacco-related mortality in Kansas. The percentage of known or probable tobacco-related deaths clusters tightly between 23.5 percent (for Frontier counties) and 25.7 percent (for Semi-Urban counties) if Kansas counties are grouped by population density Peer Groups. If KDHE Districts are chosen instead, the percentage of known or probable tobacco-related deaths clusters between 22.7 percent (North Central District) and 27.2 percent (Northwest District).

Physicians are consistently noting a tobacco contribution to mortality for several of the causes of death associated with tobacco use by Danaei et al. [1], with the highest rates of association for emphysema (94.1%), cancer of the larynx (90.1%), cancer of the trachea, bronchus and lung (87.3%), other chronic respiratory disease (85.9%; this category includes several forms of chronic bronchitis and chronic obstructive pulmonary disease,

and bronchiectasis), cancer of the lips, mouth and pharynx (62.2%), and cancer of the esophagus (53.7%). A list of cause of death groups with significant incidence and a tobacco contribution higher than the tobacco contribution to overall mortality (24.6% of cases in which the tobacco status of the decedent is known) can be found in Table 7.

NCHS Cause Group 102, Accidental exposure to smoke, fire and/or flame is included, even though there were fewer than 100 smoke and/or fire deaths for which event tobacco status was known, because it shows that careless use of tobacco products is still a contributing factor in over one third (34.5%) of smoke and/or fire deaths. A tobacco contribution was reported for only 12.8 percent of stroke deaths in which the decedent's tobacco status was known; since this is less than the tobacco contribution to overall mortality (24.6%), stroke deaths are merged into the All Other Causes category.

Table 7. Tobacco contribution to mortality by selected NCHS cause of death code group, Kansas occurrence deaths, 2005-2008

Underlying cause of death	Number "Y" or "P"	% of Known
71. Emphysema	411	94.1
24. Malignant neoplasm of larynx	64	90.1
25. Malignant neoplasm of trachea bronchus and lung	3,728	87.3
73. Other chronic lower respiratory diseases	3,288	85.9
18. Malignant neoplasm of lip mouth and pharynx	96	62.3
19. Malignant neoplasm of esophagus	133	53.8
63. Aortic aneurism and dissection	128	43.0
54. Atherosclerotic cardiovascular disease (so described)	192	38.9
102. Accidental exposure to smoke fire and/or flames	30	34.5
52. Acute myocardial infarction	798	31.6
55. All other forms of chronic ischemic heart disease	1,428	31.2
76. Other diseases of respiratory system	161	25.1
All other causes	4,365	10.3

### Conclusions

Tobacco use makes its largest impact on Kansas mortality among men in late middle age and early old age (55-74 years of age). This impact appears to be slightly worse among White non-Hispanics than among Black non-Hispanics or Hispanics, but the difference between White and Black non-Hispanics is not large. However, tobacco contribution to mortality among Hispanics is roughly half that seen in White non-Hispanics and Black non-Hispanics. Further research might indicate whether this reflects a real difference in the incidence of tobacco use among Hispanics, or whether the difference is due to a reduced access and/or utilization of medical care among Hispanics, leaving the physician completing the death certificate without a complete medical history to draw upon.

Since tobacco-related mortality is often the culmination of a pattern of behavior established many decades earlier, predictions about who may die of tobacco-related causes in the future, and initiatives to prevent such deaths, must include information about smoking behavior among youth and young adults. Nevertheless, differing patterns of tobacco-related mortality suggest that prevention campaigns focused on boys and young men might be more productive than campaigns broadly addressed to the general public.

Since tobacco use is indicated as a contributing factor in a significant percentage of deaths due to smoke, fire and flame, traditional warnings against smoking in bed continue to be relevant.

Additional study is needed to determine why the number of "Unknown" responses has increased. It is possible that this increase represents an increase in physician caution in assessing the role of tobacco as a contributing factor to mortality.

David Oakley, MA  
Office of Health Assessment

### References

1. Danaei G, Ding EL, Mozaffarian D, Taylor B, Rehm J, et al. (2009) The Preventable Causes of Death in the United States: Comparative Risk Assessment of Dietary, Lifestyle, and Metabolic Risk Factors. PLoS Med 6(4): e1000058. doi:10.1371/journal.pmed.1000058.
2. Eberhart-Phillips, Jason (2010) A Vision of Health, The 2010 Legislative Agenda Division of Health, KDHE. Kansas Public Health Grand Rounds Session #2, 27 January 2010.
3. Heron, Melonie and Tejada-Vera, Betzaida, Deaths: Leading Causes for 2005, National Vital Statistics Reports, Volume 58, Number 8, page 4.

### Overview of Trauma Falls in Kansas

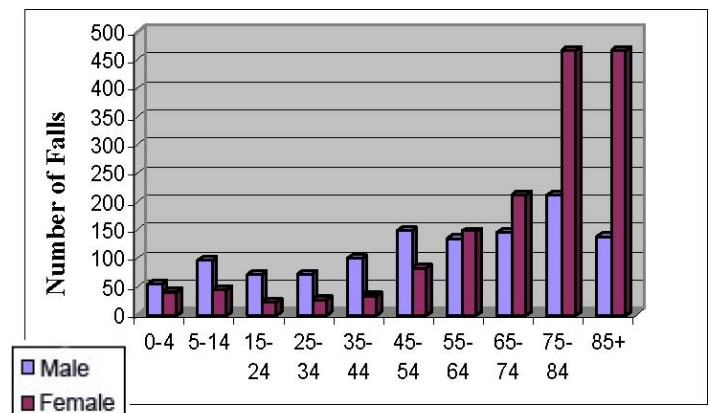
Falls are the most common cause of trauma in Kansas. In 2006, 2,721 unintentional fall-related traumas (ICD9 E-codes 880-888) were reported to the Kansas Trauma Registry. Injury severity was minor (ISS 1-8) for approximately half (53.25%) of patients, moderate (ISS 9-14) for 31 percent of patients, and severe (ISS > 15) for 15.7 percent of patients. The average length of stay across all ages was 5.68 days. Twelve percent of patients stayed in the hospital one day, 58 stayed for two to five days, 23 percent stayed six to ten days, and seven percent stayed for more than ten days.

Traumas due to falls result in a significant amount of morbidity. Discharge disposition for 41.3 percent of patients was either to a skilled nursing facility, a nursing home, or rehabilitation facility (24%, 6.4%, and 11% respectively). Half of patients who fell were discharged to home or to home with health care. Death was the outcome for 4.37 percent of patients.

### Who is injured by falls?

Although a preponderance of falls occurs in older individuals, falls occur in all age groups (Figure 4). On average, male fall patients are younger (Mean=53.8 years) than females (Mean age 71.26). Half of all male patients are older than 57 years old, whereas half of female patients are older than 79 years old.

Figure 4. Frequencies of falls by age and gender



Cases included met trauma criteria for the Kansas Trauma Registry. Duplicate transfer cases were excluded.

### How do fall traumas occur?

A relatively large number of falls (30%) occur from slipping or

tripping, followed by falls from stairs (12%), ladders, scaffolding or buildings (10%), chairs/furniture (9%), and other heights (8%). The cause of over one fourth (27%) of falls is unspecified.

The number of fall traumas due to slipping increases dramatically with age. Similarly, the number of falls on steps increases with age. The number of sports-related injuries peaks at 5-14 years old and falls from ladders and buildings are highest in the 35-54 year age groups.

### Where do fall traumas occur?

Many falls (62.92%) included in the trauma registry occur at home. Other places where falls occur include: residential facility (8.59%), public building (7.04%), recreation (3.50%), industry (2.73%), farm (1.29%), and other/unspecified place (10.55%).

For adults >55 years old and children 0-4 years old, more than half of all falls occur at home. Recreation accounts for 22.3 percent of all falls in 5-14 year olds and 17.89% of 15-24 year olds. For 85+ year olds, 20.96 percent of falls occur in residential facilities.

### Discussion

These data do not represent all hospitalized fall injuries in Kansas. One large group excluded from the trauma registry is patients who sustain isolated hip fractures from falling from the same level (slipping, tripping or unspecified fall). For other types of falls, trauma registry data represent the most serious fall injuries and patients transferred to another acute care facility. Nevertheless, these data are useful for thinking about injury prevention

### Preventing falls

Half of fall traumas in Kansas are people >65 years old who are injured at home or in residential facilities. CDC recommends that older adults can take several steps to prevent falls in their homes:

- Exercise regularly to increase strength and improve balance.
- Review prescription and over-the counter medicines with physician or pharmacist to reduce side effects and interactions.
- Improve lighting in home.
- Reduce other hazards that can lead to falls.

Nursing home interventions include:

- Assess patients after a fall to identify risk factors.
- Educate staff about fall prevention strategies.
- Review patient medications to reduce side effects and interactions.
- Make environment safer by putting in grab bars and raised toilet seats, lowering bed heights, and installing handrails.
- Provide patients with hip pads.
- Use alarms to identify patients who may need help if they get out of bed or try to move without help.

*Dee Vernberg, MPH, Ph.D.  
Epidemiologist  
Kansas Trauma Program*

## New Legislative Statistics Issued

The Bureau of Public Health Informatics has updated and issued the 2008 Legislative District Report Cards. The report cards contain selected vital statistics information that has been geocoded to each house or senate district. The geocoded information is then summarized in a one-sided card with graphs and a table of frequencies and rates.

The Legislative report cards began in 2003. Vital events data for the most recent year is tabulated and census data from 2000 is used as the source of denominators in any population-based rate calculation.

The report cards, available at <http://kic.kdhe.state.ks.us/>

[kic/legis.html](http://kic/legis.html), focus on births and deaths for each district. Persons who access the report cards are asked to complete a survey about their use of the cards at: <https://www.surveymonkey.com/s/YB7DM7J>

*Office of Health Assessment*

## Updated 2008 Kansas Community Hospital Discharge Data is now Available on KIC!

The *Kansas Information for Communities (KIC)* Community Hospital Discharge modules – Diagnosis and Procedure – have been updated with 2008 provisional community hospital discharge data. Community hospital discharge data is provided by the Kansas Hospital Association to the Kansas Health Policy Authority who makes it available to the Kansas Department of Health and Environment's Bureau of Public Health Informatics. Procedure data can be accessed at: <http://kic.kdhe.state.ks.us/kic/procedure.html> and diagnosis data is available at: <http://kic.kdhe.state.ks.us/kic/discharge.html>. Currently two options for querying data are available including table creation for any or all of the years from a) 2003 to 2008 using data that includes Hispanic origin, or b) 1995 to 2008 excluding Hispanic origin.

Community Hospital Discharge Data as displayed on KIC uses Clinical Classification Software (CCS) developed by the Agency for Healthcare Research and Quality (AHRQ) to cluster patient diagnoses or procedures into a manageable number of clinically meaningful categories. Updated periodically, the CCS compresses the 12,000 diagnosis codes of the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) into 259 mutually exclusive categories and 26 summarized groupings. The system can be used with any data that are coded using the ICD-9-CM.

In 2007, CCS replaced the original CCS categories for mental health and substance abuse with categories from the Mental Health Substance Abuse Clinical Classification Software (CCS-MHSA). For KIC, however, a special archival version of the single-level CCS for diagnoses was created for doing longitudinal analysis involving past years. This version uses the original CCS format for mental health conditions (65-75), and applies it to the latest ICD-9-CM codes. Thus, this special archival CCS grouping version has been run against the 2007 and 2008 community hospital discharge data maintained on KIC and will be used for processing future datasets. More information on the clinical classification, as well as the lists of diagnoses and procedures utilized by CCS, can be found at the AHRQ web site. Detailed information on the ICD-9-CM system is best viewed at the National Center for Health Statistics site on Classification of Diseases.

*Office of Health Assessment*

The Office of Health Assessment (OHA) of the Kansas Department of Health and Environment's Bureau of 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: OHA, 1000 SW Jackson, Suite 130 Topeka, KS, 66612-1354, [Kansas.Health.Statistics@kdheks.gov](mailto:Kansas.Health.Statistics@kdheks.gov), or 785-296-8627. Roderick L. Breiby, Secretary KDHE; Jason Eberhart-Phillips, MD, State Health Officer and Director, Division of Health; Elizabeth W. Saadi, PhD, Interim Director, BPHI, and Acting State Registrar; Elizabeth W. Saadi, PhD, Director, OHA; Greg Crawford, Editor.

264-39  
Office of Health Assessment  
Bureau of Public Health Informatics  
Kansas Dept. of Health & Environment  
1000 SW Jackson, Suite 130  
Topeka, KS 66612-1354

**PRST STD  
US Postage  
Paid  
Topeka, KS  
Permit No. 157**