# Kansas Health Statistics Report

**Kansas Department of Health and Environment – Division of Health**
**Bureau of Epidemiology and Public Health Informatics – No 47 – November 2010**

## Tobacco Use among Adult Kansans – 2009 Behavioral Risk Factor Surveillance System

### Background

Tobacco use is one of the most preventable causes of morbidity and mortality [1]. Reducing the prevalence of cigarette smoking is an important public health goal because of the strong association of tobacco use with diseases and premature mortality [2]. At present, nearly 40 diseases or causes of death are known to be positively associated with cigarette smoking [3]. CDC estimated average annual smoking-attributable age-adjusted mortality rate from 2000-2004 in Kansas among adults 35 years and older was 262.7 per 100,000 [4]. It was higher than the national estimate of 248.5 per 100,000 [5]. In 2004, in Kansas, the total annual smoking-attributable age-adjusted rate for Years of Potential Life Lost (YPLL) was 3,429.5 per 100,000 [9]. Tobacco use has huge economic impact as well. In 2004, in Kansas, for adults 18 years and older, total annual smoking-attributable health expenditure was $795 million [7] and total annual Medicaid expenditure attributable to smoking was $171 million [8]. In 2006, total Kansas state revenue from tobacco excise taxes and settlement was $172.7 million [10]. In addition to tobacco use in the form of cigarettes, smokeless tobacco use is increasing [6]. There has been a surge in smokeless tobacco (SLT) products marketing in response to the public health efforts for smoking prevention [6].

### Objective

This study's objective is to examine the prevalence of tobacco use (including cigarette smoking and use of smokeless tobacco) among adult Kansans and various population subgroups in 2009.

### Method

2009 Kansas Behavioral Risk Factor Surveillance System (BRFSS) data were analyzed for this study. 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 tobacco use among adults. Sample size for the 2009 BRFSS survey was 18,912 respondents. For this study's purpose, tobacco use is defined as respondents who currently smoke cigarettes every day or some days and/or use any smokeless tobacco products like chewing tobacco, snuff, or snus. Weighted analysis of Kansas BRFSS data was performed using SAS 9.2 software. Prevalence of tobacco use was examined among different population subgroups by age, sex, race, ethnicity, annual household income, education, employment, marital status, disability status, geographic location, weight status based on Body Mass Index (BMI), leisure time physical activity, recommended level of physical activity status, and insurance coverage. In addition, prevalence of tobacco use was analyzed in relation to co-morbid conditions such as diabetes, hypertension, asthma, and mental illness. Prevalence of tobacco use was also examined in relation to behavioral risk factors such as problem gambling, heavy drinking, binge drinking, and insufficient fruits and vegetable consumption.

### Results

The 2009 Kansas BRFSS weighted data analysis showed that about 470,770 adults 18 years and older (22.4%) use tobacco in at least one form (either smoke cigarettes or use smokeless tobacco). About 27,321 adult Kansans use both smokeless tobacco and smoke cigarettes (1.3%). Detailed results for adults who use tobacco in at least one form are given in Table 1.

Table 1. Prevalence of tobacco use among adults age 18 years and older by selected demographic characteristics in Kansas, 2009

| Population Subgroups (by demographic characteristics) | Prevalence of Tobacco Use | | |
|---|---|---|---|
| | Weighted Percentage (%) | 95% Confidence Interval | |
| | | Lower Limit | Upper Limit |
| Total | 22.4 | 21.5 | 23.3 |
| Gender Groups | | | |
| Male | 27.1 | 25.6 | 28.5 |
| Female | 17.9 | 16.9 | 18.9 |
| Age Groups | | | |
| 18-24 years | 25.2 | 21.0 | 29.4 |
| 25-34 years | 29.4 | 26.8 | 31.9 |
| 35-44 years | 23.3 | 21.4 | 25.2 |
| 45-54 years | 26.0 | 24.5 | 27.6 |
| 55-64 years | 20.3 | 19.0 | 21.7 |
| 65+ years | 10.1 | 9.3 | 11.0 |
| Ethnicity Groups | | | |
| Hispanic | 22.6 | 18.4 | 26.8 |
| Non-Hispanic | 22.4 | 21.5 | 23.3 |
| Race Groups | | | |
| White Only | 22.0 | 21.0 | 22.9 |
| African American Only | 23.7 | 19.1 | 28.2 |
| Other Races Only | 22.6 | 18.6 | 26.7 |
| More than One Race | 37.3 | 28.8 | 45.7 |

(continued on next page)

**Inside**

***(Editors Note: This issue contains an insert summarizing the Kansas Youth Tobacco Survey results.)***

(Table 1 Continued )

| Population Subgroups (by demographic characteristics) | Prevalence of Tobacco Use | | |
|---|---|---|---|
| | Weighted Percentage (%) | 95% Confidence Interval | |
| | | Lower Limit | Upper Limit |
| Annual Household Income Levels | | | |
| <$15,000 | 36.0 | 31.6 | 40.4 |
| $15,000 to $24,999 | 30.2 | 27.7 | 32.8 |
| $25,000 to $34,999 | 25.4 | 22.6 | 28.3 |
| $35,000 to $49,999 | 25.6 | 23.3 | 28.0 |
| $50,000 or more | 18.0 | 16.8 | 19.3 |
| Education Status | | | |
| Less than high school graduate/GED | 38.2 | 33.9 | 42.5 |
| High school graduate/GED | 29.2 | 27.3 | 31.1 |
| Some college | 24.8 | 23.1 | 26.6 |
| College graduate | 11.7 | 10.7 | 12.7 |
| Employment Status | | | |
| Employed for Wages / Self-Employed | 23.5 | 22.4 | 24.7 |
| Out of Work | 40.2 | 35.2 | 45.2 |
| Homemaker/ Student | 16.0 | 12.8 | 19.1 |
| Retired | 12.3 | 11.3 | 13.3 |
| Unable to Work | 37.8 | 33.7 | 42.0 |
| Marital Status | | | |
| Married/member of an unmarried couple | 20.6 | 19.7 | 21.6 |
| Divorced/Separated | 36.0 | 33.4 | 38.5 |
| Widowed | 14.1 | 12.5 | 15.7 |
| Never married | 25.6 | 22.3 | 28.9 |
| Population Density | | | |
| Frontier | 22.8 | 19.1 | 26.5 |
| Rural | 26.3 | 23.5 | 29.1 |
| Densely-settled Rural | 24.4 | 22.0 | 26.9 |
| Semi-urban | 24.6 | 22.3 | 26.8 |
| Urban | 20.0 | 18.8 | 21.1 |
| Health Insurance Status | | | |
| Uninsured | 39.9 | 36.4 | 43.3 |
| Insured | 20.0 | 19.2 | 21.0 |
| *Other races includes Asian, American Indian/Alaska Native, Native Hawaiian or Pacific Islander, and any other race. | | | |

2009 Kansas BRFSS results showed that more than one in four (27.1%) men used tobacco and about one in six (17.9%) women used tobacco. Percentage of tobacco use among males was significantly higher than females. Prevalence of tobacco use did not vary significantly by ethnicity. Multiracial adults had significantly high prevalence of tobacco use (37.3%) as compared to whites and African-Americans. Prevalence of tobacco use was high among the low-income population. The percentage of tobacco use was significantly higher among adults with annual household income less than $15,000 as compared to adults with annual household income $50,000 or more (36.0% vs. 18.0%). Education status had a great influence on prevalence of tobacco use. Each category of education status shown in Table 1 is significantly different than other categories. Prevalence of tobacco use decreased with an increase in education status. More than one in three individuals who were out of work (40.2%) and who were unable to work (37.8%) used tobacco. The percentage of tobacco use was significantly higher among individuals who were out of work or unable to work as compared to adults who were employed for wages/self-employed. The percentage of tobacco use was significantly higher among divorced or separated individuals (36.0%) as compared to other categories of marital status. More than one in three individual without health insurance used tobacco (39.9%) as compared to one in five individual with insurance (20.0%).

Table 2. Prevalence of tobacco use among adults age 18 years and older by behavioral risk factors in Kansas, 2009

| Population Subgroups (by behavioral risk factors) | Prevalence of Tobacco Use | | |
|---|---|---|---|
| | Weighted Percentage (%) | 95% Confidence Interval | |
| | | Lower Limit | Upper Limit |
| Weight status based on Body Mass Index (BMI) | | | |
| Normal or Underweight (BMI <25) | 22.8 | 21.2 | 24.4 |
| Overweight (25 ≤ BMI < 30) | 23.4 | 21.8 | 24.9 |
| Obese (BMI ≥ 30) | 21.4 | 19.8 | 23.0 |
| Leisure time physical activity status | | | |
| Participated in leisure time physical activity | 20.0 | 19.0 | 21.0 |
| Did not participate in leisure time physical activity | 30.4 | 28.6 | 32.3 |
| Recommended level of physical activity | | | |
| Meets recommendations | 21.9 | 20.5 | 23.3 |
| Insufficient | 21.3 | 20.0 | 22.6 |
| No activity | 26.5 | 24.0 | 29.0 |
| Heavy drinking | | | |
| Heavy drinker | 55.6 | 50.0 | 61.2 |
| Not heavy drinker | 20.8 | 19.9 | 21.7 |
| Binge drinking | | | |
| Binge drinker | 42.7 | 39.6 | 45.8 |
| Not binge drinker | 18.8 | 17.9 | 19.6 |
| Gambling | | | |
| Yes | 28.4 | 26.9 | 29.9 |
| No | 18.5 | 17.4 | 19.6 |
| Fruit and vegetable consumption | | | |
| Does not eat fruits and veggies five times a day | 23.9 | 22.9 | 24.9 |
| Eats fruits and veggies five times a day | 14.8 | 13.0 | 16.5 |

Prevalence of tobacco use did not vary by weight status although it varied significantly by leisure time physical activity status (Table 2). A significantly higher percentage of adults who did not participate in leisure time physical activity used tobacco (30.4%) as compared to those who participated in leisure time physical activity (20.0%). A significantly higher percentage of heavy alcohol drinkers (55.6%) and binge drinkers (42.7%) used tobacco as compared to their counterparts. Prevalence of tobacco use was significantly higher among those who gambled (28.4%) as compared to those who did not (18.5%). A significantly higher percentage of tobacco use was seen among indi-

viduals who did not eat fruits and vegetables five times a day as compared to those who ate this recommended amount of fruits and vegetables (23.9% vs.14.8%).

Table 3. Prevalence of tobacco use among adults age 18 years and older by disability status and mental illness variables in Kansas, 2009

| Population Subgroups (by disability status and mental illness variables) | Prevalence of Tobacco Use | | |
|---|---|---|---|
| | Weighted Percentage (%) | 95% Confidence Interval | |
| | | Lower Limit | Upper Limit |
| Disability Status | | | |
| Living with a Disability | 26.9 | 25.1 | 28.8 |
| Living without a Disability | 21.2 | 20.2 | 22.2 |
| Mental Illness (3-level) | | | |
| No mental illness | 20.7 | 19.3 | 22.1 |
| Mild-moderate mental illness | 33.7 | 28.1 | 39.3 |
| Serious mental illness | 49.5 | 38.5 | 60.6 |
| Serious Psychological Distress (SPD) | | | |
| Present* | 49.5 | 38.5 | 60.6 |
| Absent** | 21.6 | 20.3 | 22.9 |

SPD 'Present' category is same as 'Serious mental illness' category.
**SPD 'Absent' category is created by merging 'No mental illness' and 'Mild-moderate mental illness' categories.

A significantly higher percentage of tobacco use was seen among individuals living with a disability (26.9%) as compared to adults living without a disability (21.2%) (Table 3). The percentage of tobacco use was significantly higher among adults with Serious Psychological Distress (SPD) as compared to adults without SPD (49.5% vs. 21.6%). Almost half of the adults with SPD (49.5%) used tobacco.

Table 4. Prevalence of tobacco use among adults age 18 years and older by other chronic conditions in Kansas, 2009

| Population Subgroups (by other chronic conditions) | Prevalence of Tobacco Use | | |
|---|---|---|---|
| | Weighted Percentage (%) | 95% Confidence Interval | |
| | | Lower Limit | Upper Limit |
| Diabetes | | | |
| Present | 17.7 | 15.6 | 19.8 |
| Absent | 22.8 | 21.9 | 23.8 |
| Hypertension | | | |
| Present | 21.5 | 20.1 | 22.9 |
| Absent | 22.6 | 21.5 | 23.8 |
| Current Asthma | | | |
| Present | 25.7 | 22.2 | 29.3 |
| Absent | 22.0 | 21.1 | 22.9 |

Prevalence of tobacco use did not vary by co-morbid conditions like hypertension and current asthma. Slightly higher prevalence of tobacco use was seen among adults who did not have diabetes (22.8%) as compared to those who had diabetes (17.7%) (Table 4).

Table 5. Prevalence of tobacco use among adults age 18 years and older by general and mental health status in Kansas, 2009

| Population Subgroups (by general and mental health status) | Prevalence of Tobacco Use | | |
|---|---|---|---|
| | Weighted Percentage (%) | 95% Confidence Interval | |
| | | Lower Limit | Upper Limit |
| General Health Status | | | |
| Fair or poor | 30.4 | 27.9 | 32.8 |
| Excellent to good | 21.3 | 20.3 | 22.2 |
| Mental Health Status | | | |
| =>14 days mental health not good | 40.4 | 36.9 | 44.0 |
| <14 days mental health not good | 20.7 | 19.8 | 21.6 |

Almost one in three adults who reported their general health status as fair or poor used tobacco (30.4%) as compared to one in five adults who reported their general health status as excellent, very good or good (21.3%) (Table 5). The prevalence of tobacco use was twice as high among adults who reported their mental health not good for 14 or more days in past 30 days as compared to those who reported their mental health not good for less than 14 days in past 30 days (40.4% vs. 20.7%).

## Discussion

2009 Kansas BRFSS results showed that the prevalence of tobacco use is high among Kansas adults. Socio-demographic characteristics showed high influence on prevalence of tobacco use among adults. Disparities were observed among various population subgroups. Prevalence of tobacco use was high among males, adults with low income, adults with low education, those who are out of work or unable to work and among adults living with disability. Individuals practicing risk behaviors such as heavy drinking and binge drinking showed more than twice the prevalence of tobacco use as compared to their counterparts. Higher prevalence of tobacco use was seen among adults without diabetes. In addition, the prevalence of tobacco use was high among those who reported poor general and poor mental health.

To address this challenging public health issue and to achieve the goal of reducing tobacco use, the Kansas Tobacco Use Prevention and Control Program and its partners are using multifaceted programs and strategies. These strategies are directed towards prevention of initiation of tobacco use, promotion of assistance to tobacco users to quit and establishment of smoke-free policies and social norms.

*Nimisha Bhakta, MPH*
*Ghazala Perveen, MBBS, PhD, MPH*

## Reference

1 Christophi CA, et al. *Prevalence and social environment of cigarette smoking in Cyprus youth*. BMC Public Health 2008, 8:190
2 Flegal KM, *The Effects of Changes in Smoking Prevalence on Obesity Prevalence in the United States*. American Journal of Public Health, August 2007, Vol 97, No. 8, Pg 1510-1514.
3 Corrêa P, Barreto SM and Passos V. *Smoking-attributable mortality and years of potential life lost in 16 Brazilian capitals, 2003: a prevalence-based study*. BMC Public Health 2009, 9:206
4 https://apps.nccd.cdc.gov/sammec/five_yr_sam.asp?year=2004&state=KS accessed on March 05, 2010.
5 https://apps.nccd.cdc.gov/sammec/five_yr_sam_rate.asp?year=2004&state=US accessed on March 05, 2010.
6 Carpenter CM, Connolly GN, Ayo-Yusuf OA, Wayne GF. *Developing smokeless tobacco products for smokers: an examination of tobacco industry documents*. Tob Control. 2009 Feb;18(1):54-9. Epub 2008 Oct 23.
7 https://apps.nccd.cdc.gov/sammec/show_same_data.asp?data_element_state=KS&data_element_year=2004&quick_state_pick=Go accessed on March 05, 2010.

8 Armour BS, Finkelstein EA, Fiebelkorn IC. *State-level Medicaid expenditures attributable to smoking*. Prev Chronic Dis 2009;6(3). http://www.cdc.gov/pcd/issues/2009/jul/08_0153.htm. Accessed on March 5, 2010.
9 https://apps.nccd.cdc.gov/sammec/ypll_rate_reports_total.asp accessed on March 5, 2010.
10 Centers for Disease Control and Prevention. *Best Practices for Comprehensive Tobacco Control Programs – 2007*. Atlanta: U.S. Dept. of Health and Human Services, CDC, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; October 2007.

# Immunization Coverage of 24 Month Olds in Kansas, 2005-2006

## Background

Each year, the Advisory Committee on Immunization Practices (ACIP) releases a recommended immunization schedule [1]. This is done to ensure that the schedule is reflective of the current recommended uses of licensed vaccines. Additionally, this recommended schedule is used to guide daycare, preschool and school immunization policies.

A survey was conducted to assess the percentage of 24 month old children who were up to date for the recommended vaccines. The full report of survey results can be found at http://www.kdheks.gov/immunize/download/retrospective_2009-10.pdf.

## Methods

The Kansas Certificates of Immunizations (KCIs) and other immunization data for children enrolled in a kindergarten class in Kansas public and private schools during the 2009-2010 school year were collected and evaluated for immunization coverage rates. A stratified, cross-sectional design was utilized for this study, with each county representing a stratum. The characteristics of interest, or outcome variables, were the percentages of children who were fully immunized against diphtheria, tetanus and Pertussis (DTaP4), polio (Polio3), measles, mumps and rubella (MMR1), *H. influenzae* type b (Hib3), hepatitis B virus (HepB3), varicella (Var1), and pneumococcal disease (PCV3).

A probability sample of all children enrolled in Kansas public school kindergartens was drawn. To ensure an adequate sample size in each county and to maximize the efficiency of the sampling process, a different sampling ratio was established for each county, and a probability sample was selected using a systematic sample technique. Due to the small size of the private school population in Kansas, all records from private schools were solicited. Analyses were performed using weighted data, and the analyses accounted for the complex sample design effect due to the stratification process and differences in sampling ratios between counties. Sample weights were calculated using the number of kindergartners enrolled in a county and the number of records analyzed for that county.

Coverage rates were assessed for these children at 24 months of age. Children born between September 2, 2003 and September 1, 2004 were included in this study, and their immunization coverage rates at 24 months of age, i.e., between September 2, 2005 and September 1, 2006, were analyzed. The results of the survey refer to children who were born between September 2, 2003, and September 1, 2004. The coverage rates refer to the point in time at which these children turned 24 months old, between September 2, 2005 and September 1, 2006. For the 24 month old analysis, 13,563 (88%) children were included in the analysis because they were 24 months of age between September 2, 2005 and September 1, 2006.

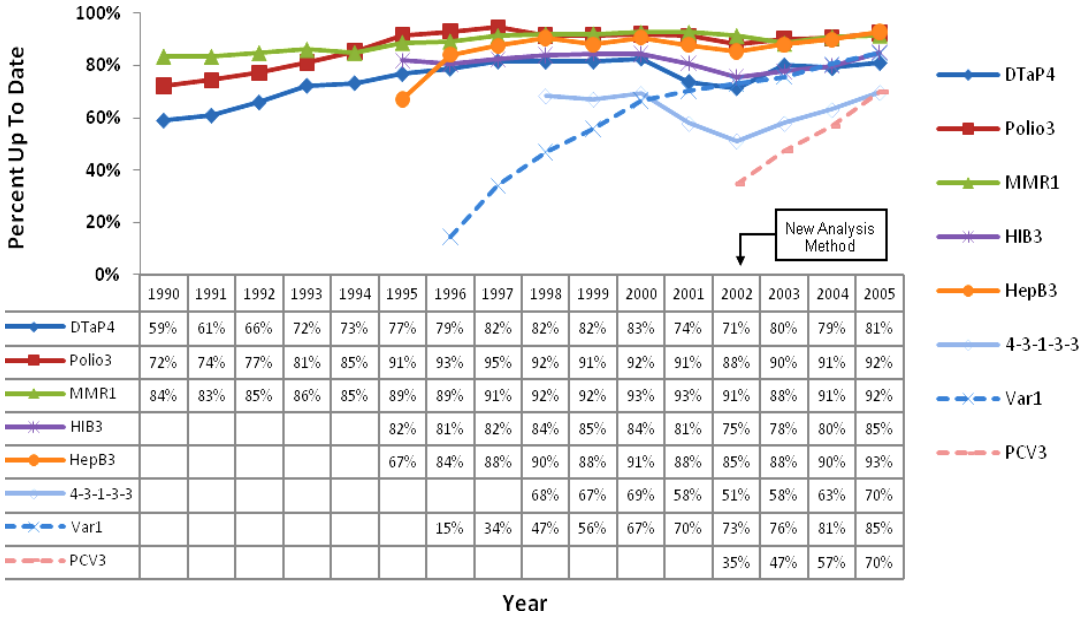
The results for this survey were measured against similar previous studies. In total, there were 797 schools, 695 public and 102 private, included in the analysis. A representative sample of 15,330 children from both public and private schools with complete and usable KCIs, or other sources of immunization data, were included in the analysis.

## Results

The statewide coverage rate for the 4-3-1-3-3 series (DTaP4, Polio3, MMR1, Hib3, HepB3) for children by 24 months of age increased, compared to 2004-2005, by more than 6.5 percentage points to 70 percent, which was below the Healthy People 2010 goal of at least 80 percent (Figure 4). Healthy People 2010 set goals of 90% coverage for DTaP4, Polio3, MMR1, Hib3, HepB3, and Var1 and 80% coverage for 4-3-1-3-3 series among children aged 19 to 35 months. Varicella vaccination, which has been required for school entry since the 2005-06 school year, had a coverage rate of 85 percent by 24 months of age. The coverage rates for PCV3, which is not required for school entry, increased by more than 13 percentage points to 70 percent.

Immunization coverage rates of children by 24 months of age increased each year from 1990-91 through 2000-01 and remained elevated for most single vaccines (Figure 4). Significant decreases in rates for DTaP4 and the 4-3-1-3-3 series occurred in 2001-02 due to a shortage of the DTaP vaccine. The coverage rate for the 4-3-1-3-3 series has been increasing following the reduction in coverage, and the 4-3-1-3-3 and DTaP4 coverage rates are no longer significantly different than the 2000-01 rates. Beginning in 2003-04 and continuing through 2005-06 (2009-10 Retrospective Study), the rates for most vaccinations have been increasing.

Figure 4. Percent of children up to date at 24 months of age by vaccine, Kansas, 1990 - 2005.*




| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DTaP4 | 59% | 61% | 66% | 72% | 73% | 77% | 79% | 82% | 82% | 82% | 83% | 74% | 71% | 80% | 79% | 81% |
| Polio3 | 72% | 74% | 77% | 81% | 85% | 91% | 93% | 95% | 92% | 91% | 92% | 91% | 88% | 90% | 91% | 92% |
| MMR1 | 84% | 83% | 85% | 86% | 85% | 89% | 89% | 91% | 92% | 92% | 93% | 93% | 91% | 88% | 91% | 92% |
| HIB3 | | | | | | 82% | 81% | 82% | 84% | 85% | 84% | 81% | 75% | 78% | 80% | 85% |
| HepB3 | | | | | | 67% | 84% | 88% | 90% | 88% | 91% | 88% | 85% | 88% | 90% | 93% |
| 4-3-1-3-3 | | | | | | | | | 68% | 67% | 69% | 58% | 51% | 58% | 63% | 70% |
| Var1 | | | | | | | 15% | 34% | 47% | 56% | 67% | 70% | 73% | 76% | 81% | 85% |
| PCV3 | | | | | | | | | | | | | 35% | 47% | 57% | 70% |

* Based on retrospective surveys from years analyzed when child was in school starting in 1994 through 2009

The 105 counties were grouped into three categories based on population density, and coverage rates were compared among these groups. Counties that were "sparsely populated" (<20 persons per square mile) had higher coverage rates for the 4-3-1-3-3 series than "moderately populated" (20 – 149.9 persons per square mile) and "urban" (≥150 persons per square mile) counties. The coverage rate estimates were compared to determine if differences exist among the counties of different population densities. For the 4-3-1-3-3 series, the coverage rate of sparsely populated counties was statistically higher compared to moderately populated and urban counties, and the moderately populated rates were statistically greater than the urban rates (Table 9). Additionally, the coverage rate estimate for the sparsely populated category, which only accounts for 11 percent of the population surveyed, compared to the coverage rate estimates of the other two categories (moderately populated, urban) was significantly higher for DTaP4, Polio3, MMR1, and Hib3. The moderately populated category, which is comprised of 32% of the population surveyed, had the lowest coverage estimates for Var1. The moderately populated counties did not have the highest coverage rate for any vaccine. Urban counties, which includes the most densely populated counties and represents 57% of the population surveyed, had the lowest coverage rate estimates for Polio3, Hib3, HepB3, and the 4-3-1-3-3 series. Var1 was the only vaccine for which the urban category had the highest rate.

Table 9. Kansas immunization coverage rates by peer group for 2005-2006.*

| Counties by Population Density – Condensed Groups n=13,563 | | | |
|---|---|---|---|
| | Sparsely Populated n=3,724 (95% CI) | Moderately Populated n=6,361 (95% CI) | Urban n=3,478 (95% CI) |
| DTaP4 | 83.4 (82.2 - 84.6) | 80.4 (79.3 - 81.4) | 80.9 (78.9 - 82.8) |
| Polio3 | 94.5 (93.8 - 95.3) | 93.2 (92.5 - 93.8) | 91.3 (89.9 - 92.7) |
| MMR1 | 92.7 (91.9 - 93.6) | 91.6 (90.8 - 92.3) | 91.4 (90 - 92.8) |
| Hib3 | 92.4 (91.6 - 93.3) | 86.2 (85.3 - 87.1) | 83 (81.1 - 84.8) |
| HepB3 | 95.2 (94.5 - 95.9) | 94.2 (93.5 - 94.8) | 91.4 (90 - 92.9) |
| 4-3-1-3-3 Series | 78.8 (77.5 - 80.1) | 71 (69.8 - 72.2) | 67.2 (64.8 - 69.5) |
| Var1 | 84.5 (83.3 - 85.6) | 83.7 (82.7 - 84.6) | 85.2 (83.4 - 87) |
| PCV3 | 71.6 (70.2 - 73.1) | 68.6 (67.4 - 69.9) | 70.2 (67.9 - 72.6) |

### Conclusion

While the percent of 24 month olds who are up to date for the various age-appropriate vaccines have either remained static or increased, most vaccines (DTaP4, Hib3, Var1, and PCV3) do not meet the Healthy People 2010 goal of 90 percent; Kansas also does not meet the goal of 80 percent coverage for the 4-3-1-3-3 series.

Vaccine coverage is of great public health importance. By having greater vaccine coverage rates, there is an increase in herd immunity, which leads to lower incidence rates and an ability to limit the size of disease outbreaks.

In 2006, a widespread outbreak of mumps occurred in Kansas and across the United States. Prior to the outbreak, the incidence rate of mumps was at a historical low, and even with the outbreak, the rates were still lower than in the pre-vaccination era. Due to high vaccine coverage rates, thousands of cases were possibly prevented [2] [3].

Limitations of this survey include: the survey reports data that refer to immunization coverage rates that occurred three years before the survey. Due to Hib3 and PCV3 not being required for school entry, these vaccines may not consistently be reported on the immunization record, thus artificially decreasing coverage rates for the individual vaccines, as well as the 4-3-1-3-3 series.

*Elizabeth Lawlor, MS*
*Bureau of Epidemiology and Public Health Informatics*

### Reference

1. Centers for Disease Control and Prevention. Recommended immunization Schedule ---United States, January – June 2004. MMWR 2004;53(01)
2. Kansas Department of Health and Environment, Bureau of Epidemiology and Disease Prevention, 2006.
3. Centers for Disease Control and Prevention. Update: multistate outbreak of mumps---United States, January 1--May 2, 2006. MMWR 2006;55:559--63.

## Assessing Household Food Security in Kansas Using the Kansas Behavioral Risk Factor Surveillance System (BRFSS) Survey Data, 2008

### Background

The Kansas Department of Health and Environment (KDHE) is a participating member of the Governor's Food Security Task Force. The task force recommended to the Governor in its 2006 report that hunger related questions be added to the Kansas Behavioral Risk Factor Surveillance System (BRFSS). KDHE agreed to make the proposal on behalf of the task force. The standard "short form" six-items, a subset of the full 18-items of the U.S. Department of Agriculture Food Security Survey Module, were proposed and added to the 2008 BRFSS. The purpose of asking the food security questions is to assess the pervasiveness of hunger in Kansas.

Food Security -- access to all people at all times to enough food for an active, healthy life -- is one of several conditions necessary for a population to be healthy and well nourished [1]. Food security is especially important for children because the nutritional content of their diet affects not only their health, but also their physical, mental, and social development -- and thus their future health and well-being [2].

### Objective

This population-based study examined the pervasiveness of hunger in Kansas.

### Methods

Data from the state-added food security module – administered to approximately 50 percent of respondents in a split survey design of the 2008 Kansas BRFSS survey data (N=4,294) – were analyzed. All estimates were weighted to be representative of the entire Kansas population/households, except those who are institutionalized or homeless. All estimates and associated standard errors were generated using SUDAAN 10.0.1. SUDAAN (Software for the Statistical Analysis of Correlated Data) produces accurate variance estimates for complex survey designs.

The household food security statistics presented are based on a measure of food security calculated from responses to a series of questions about conditions and behaviors known to characterize households having difficulty meeting basic food needs. Each question asks whether the condition or behavior known to characterize households having difficulty meeting basic food needs. Each question asks whether the condition or behavior occurred at any time during the previous 12 months and specifies a lack of money or other resources to obtain food as the reason [1].

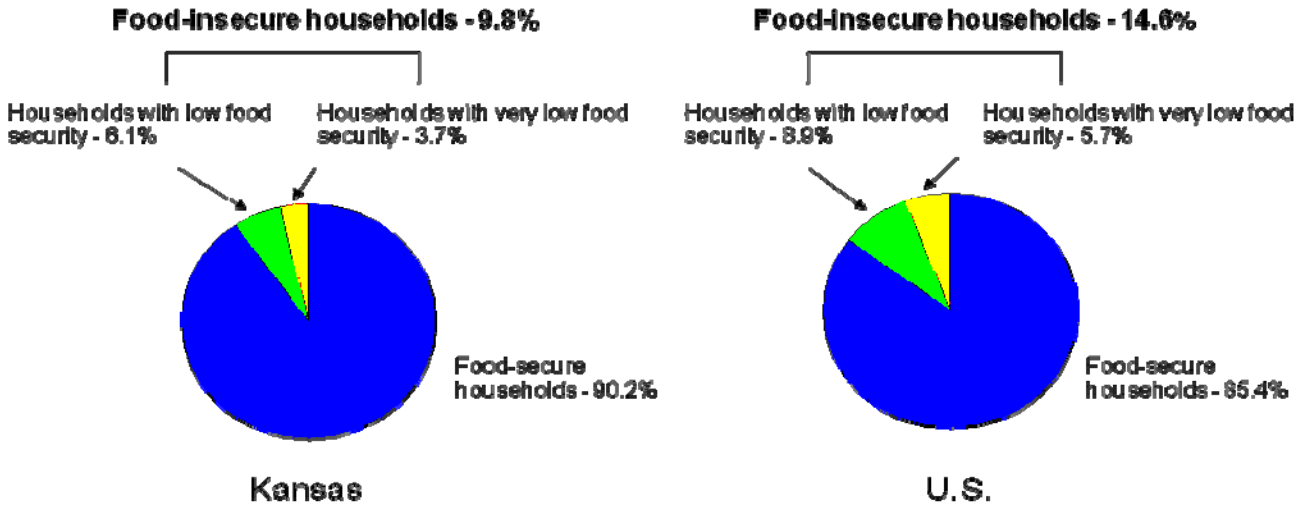
The food security status of each interviewed household is determined by the number of food-insecure conditions and behaviors the household reports. Households are classified as *food secure* if they report no food-insecure conditions or if they report only one food-insecure condition. They are classified as *food insecure* if they report two or more food-insecure conditions [1, 3, 4].

## Results

In *very low food security* households, normal eating patterns of one or more household members were disrupted and food intake was reduced at times during the year because they had insufficient money or other resources for food [5].

An estimated 20,578 Kansas households (3.7%) in 2008 had very low food security at some time during the preceding 12 months, compared to 5.7 percent of the U.S. households.

Figure 5. Food Security Status of Households, 2008 Kansas and U.S




Note: The U.S. statistic for low food security would be lower (7.7%) if based on a measure of adult food security, which would be more directly comparable with the Kansas measure.

Source: KS - Kansas Behavioral Risk Factor Surveillance System, 2008; US - Current Population Survey, 2008

In 2008, a total of 4,134 households were interviewed in the Kansas BRFSS, state-added food security module. These represent an estimated 566,888 Kansas households. Of these households, food security status was known for 561,133, as they provided a valid response to any of the questions in the food security scale.

**Food secure**

These households had access, at all times, to enough food for an active, healthy life for all household members [5]. The 90.2 percent (est. 506,091) of Kansas households were food secure during the previous 12 months, compared to 85.4 percent for the U.S. households.

**Food insecure**

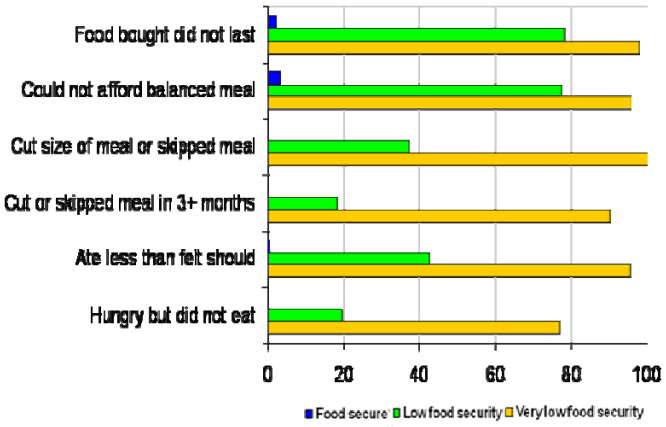
At times during the during the preceding 12 months, these households were uncertain of having, or unable to acquire, enough food to meet the needs of all their members because they had insufficient money or other resources for food. Food-insecure households include those with *low food security* and *very low food security* [5].

An estimated 55,042 Kansas households (9.8%) in 2008 were food insecure at some time during the preceding 12 months, compared to 14.6 percent for the U.S. households.

*Low food security* households obtained enough food to avoid substantially disrupting their eating patterns or reducing food intake by using a variety of coping strategies, such as eating less varied diets, participating in Federal food assistance programs, or getting emergency food from community food pantries [5].

An estimated 34,464 Kansas households (6.1%) in 2008 had low food security in the preceding 12 months, compared to 8.9% for the U.S. households.

Figure 6. Percentage of Households Reporting Each Indicator of Food Insecurity, by Food Security Status, Kansas, 2008




Source: Kansas Behavioral Risk Factor Surveillance System, 2008

Kansas households classified as having *very low food security* reported the following specific conditions [1].

- In 98.1 percent, respondents reported that the food they bought just did not last and they did not have money to get more.
- In 95.8 percent, respondents reported that they could not afford to eat balanced meals.
- One hundred percent reported that an adult had cut the size of meals or skipped meals because there was not enough money for food.

(continued on page 7)

# THE KANSAS YOUTH TOBACCO SURVEY DATA HIGHLIGHTS

## 2009/2010

The Kansas Youth Tobacco Survey contains in-depth information on the use of tobacco products, knowledge/beliefs of the impact of tobacco use, attitudes surrounding tobacco, and exposure to secondhand smoke among Kansas youth. It is a statewide survey conducted every two years by the Kansas Department of Health and Environment among students in grades 6-8 (Middle School/MS) and 9-12 (High School/HS). The results are used in program evaluation as well as in program planning.

This document contains major highlights of the 2009/2010 Kansas Youth Tobacco Survey. As a result of sufficient overall response rates for Middle and High School Surveys, these results can be generalized to all middle and high school students in Kansas.

## TRENDS IN TOBACCO USE

### *CIGARETTE USE*

The majority of smokers start smoking before the age of 18. These young smokers are more likely to develop nicotine dependence and have greater lifelong risk of smoking-related cancers. It is estimated that half of all cigarette smokers will die from their addiction.

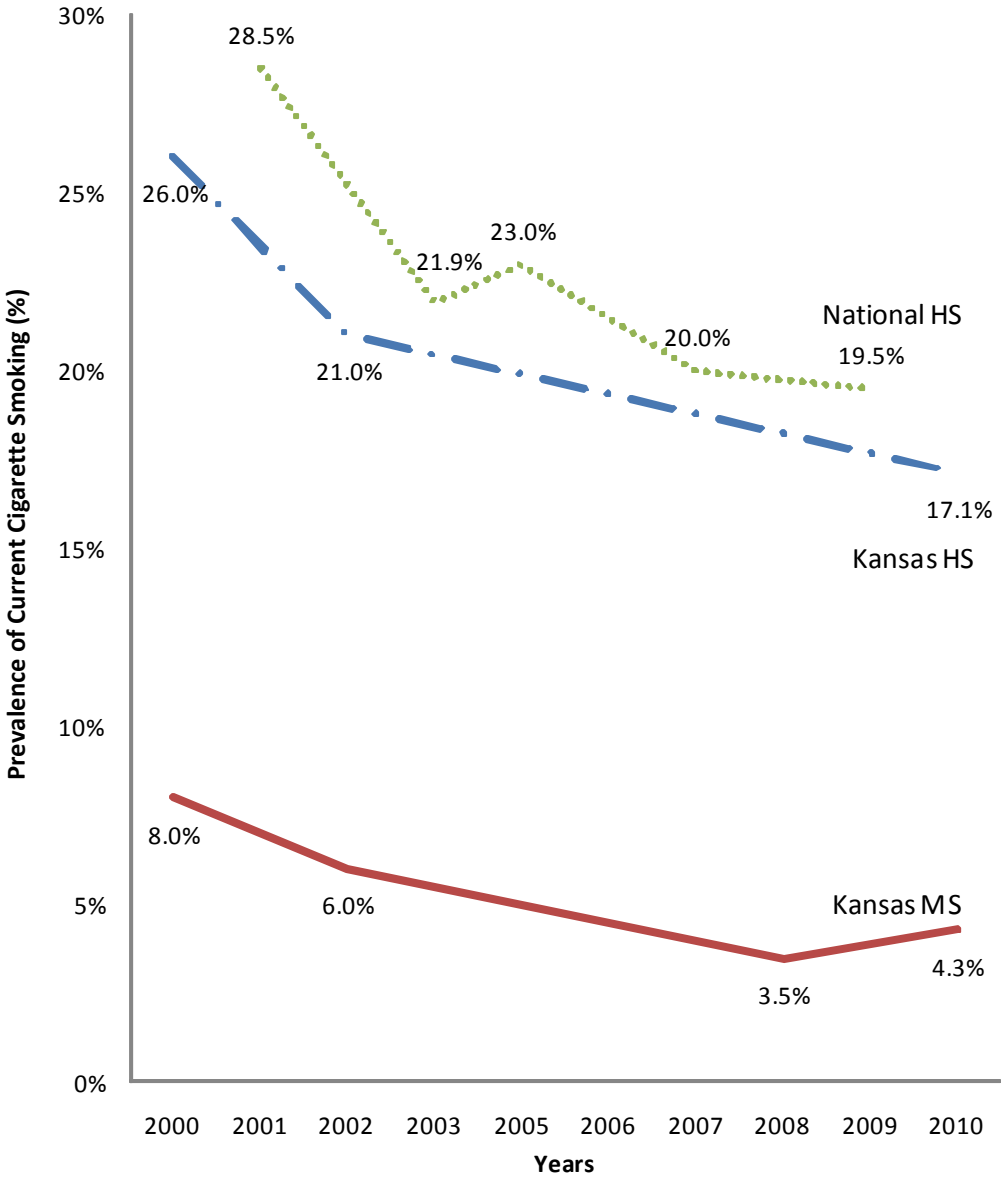
4.3% OF MS STUDENTS AND 17.1% OF HS STUDENTS ARE CURRENT SMOKERS.

The addiction to nicotine is difficult to break. However, an increased willingness to quit increases the chance of successfully quitting.

44.6% OF HS SMOKERS WANT TO QUIT.

OF THE HS SMOKERS WHO TRIED TO QUIT, ONLY 28.4% OF THEM STAYED SMOKE-FREE FOR MORE THAN 30 DAYS.

**Graph 1. Kansas HS and MS, and Natl HS Smoking Prevalence**



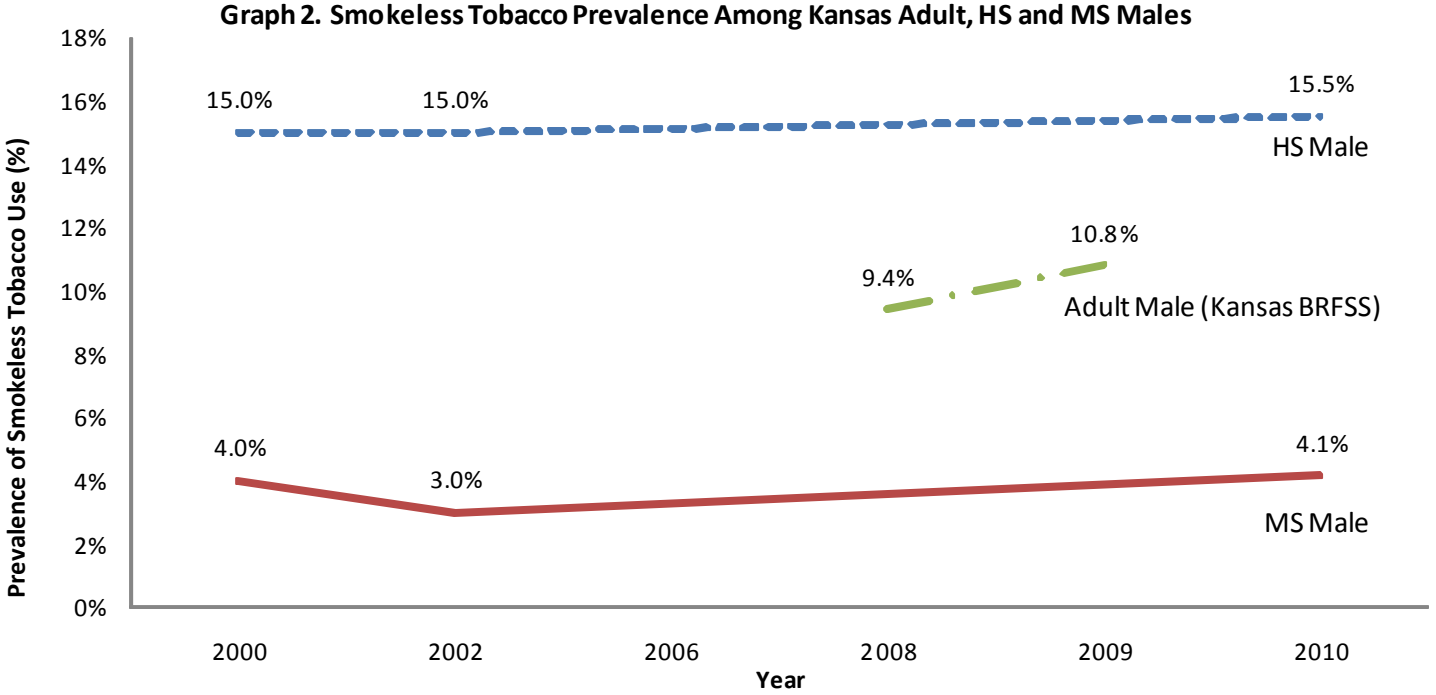
## *SMOKELESS TOBACCO USE: CHEWING TOBACCO, SNUFF OR DIP*

4.1% OF MALE MS STUDENTS AND 15.5% OF MALE HS STUDENTS USE SMOKELESS TOBACCO.

VERY FEW FEMALE STUDENTS (LESS THAN 2%) USE SMOKELESS TOBACCO.

Smokeless tobacco use by male youth is a problem in Kansas. Smokeless tobacco use among HS male students has remained high during the last decade and is consistently higher than smokeless tobacco use among adult males.

**Graph 2. Smokeless Tobacco Prevalence Among Kansas Adult, HS and MS Males**

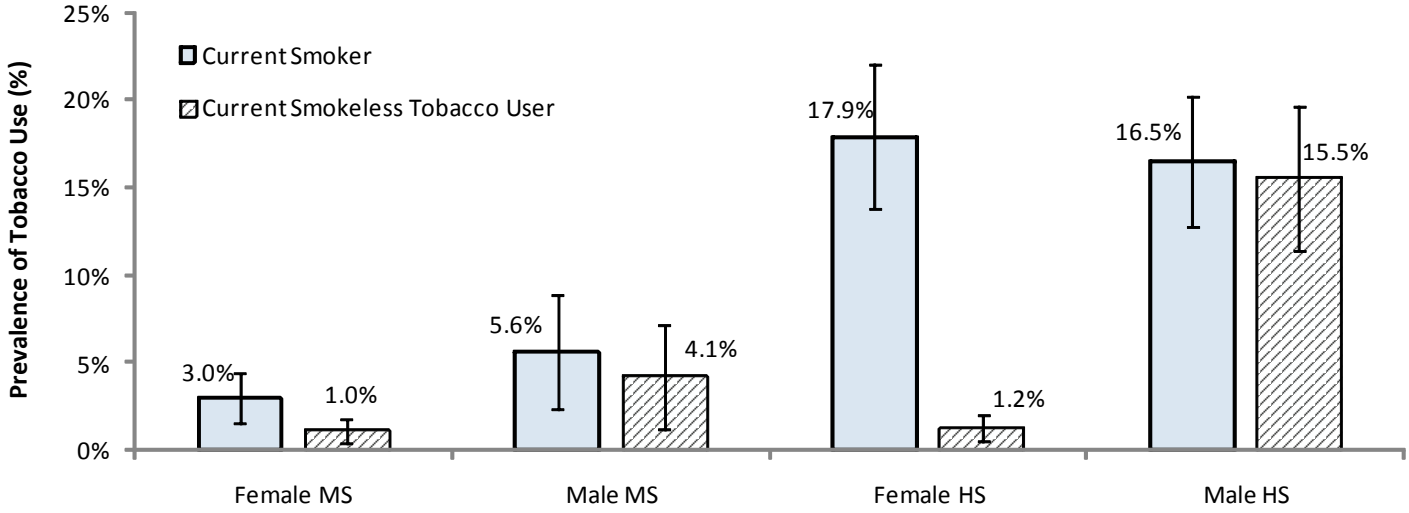



Note: Kansas Adult Male Current Smokeless Tobacco Prevalence estimates obtained from the Kansas Behavioral Risk Factor Surveillance System (BRFSS).

## TOBACCO USE BURDEN

Tobacco is used disproportionately more by certain demographic sub-groups of youth. Males, for instance, are much more likely than females to use smokeless tobacco.

**Graph 3. Kansas Youth Tobacco Use by Gender, 2010**




Note: Vertical bars indicate 95% confidence intervals.

The proportion of HS males using smokeless tobacco (15.5%) is nearly 13 times greater than the proportion of HS females using smokeless tobacco (1.2%). The prevalence of cigarette smoking is similar between male and female high school students.

**Table 1. Kansas Youth Tobacco Use by Race, 2010**

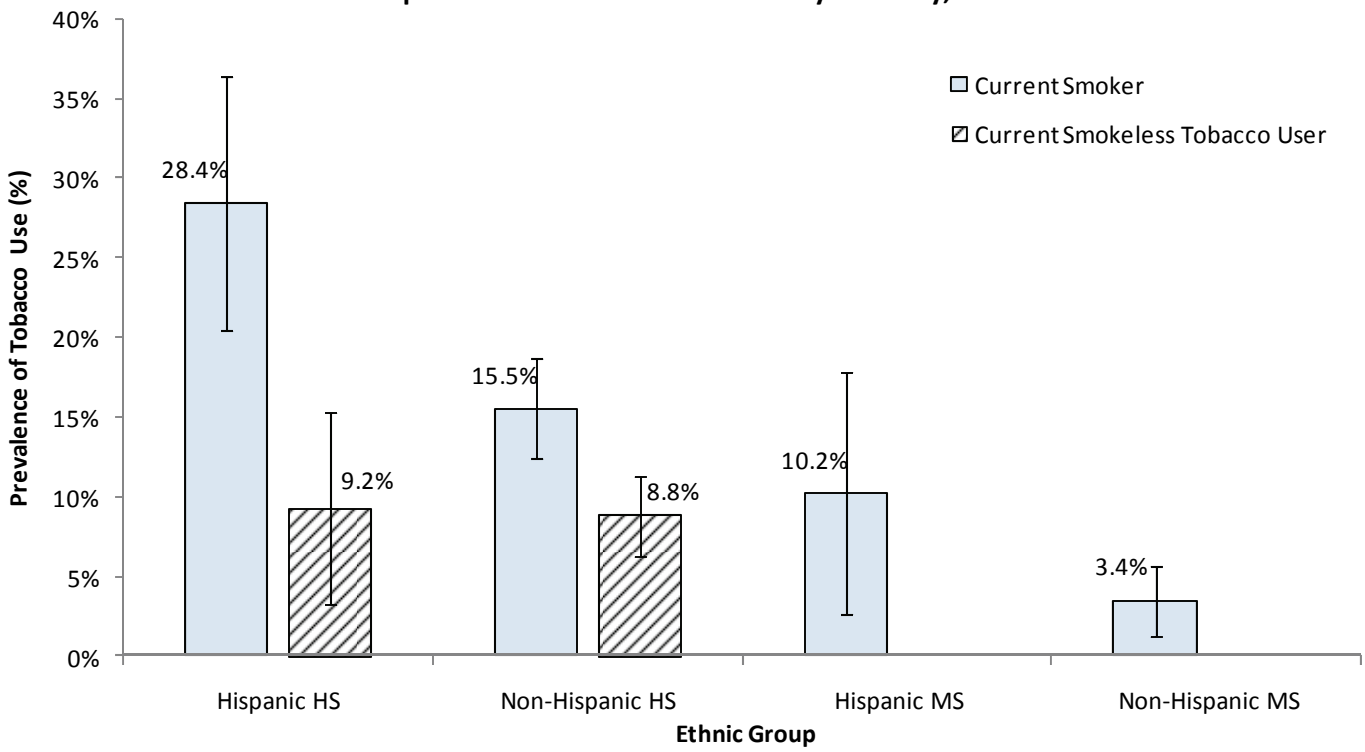
| Current Smoking | Prevalence | 95% CL | |
|---|---|---|---|
| Other Race HS | 19.8% | *13.2%* | *26.5%* |
| African American HS | 29.4% | *12.9%* | *45.9%* |
| White HS | 15.1% | *12.1%* | *18.2%* |
| Other Race MS | 4.5% | *0.4%* | *8.5%* |
| African American MS | 13.2% | *2.5%* | *23.9%* |
| White MS | 3.1% | *0.7%* | *5.5%* |
| **Current Smokeless Tobacco Use** | | | |
| Other Race HS | 7.0% | *2.7%* | *11.3%* |
| African American HS | 10.5% | *1.7%* | *19.4%* |
| White HS | 9.3% | *6.4%* | *12.2%* |
| Other Race MS | * | * | * |
| African American MS | * | * | * |
| White MS | * | * | * |

*Unstable estimates are not reported

No statistically significant differences are seen in the percentage of current cigarette or smokeless tobacco use among HS students across different racial groups (Table 1). Similarly, no significant differences are seen in the percentages of current cigarette smoking among MS students across racial groups. The percentages of current smokeless tobacco use among MS students are not calculated due to small sample size.

The prevalence of smoking in Kansas Hispanic high school students is significantly higher (28.4%) than the prevalence of smoking among non-Hispanic high school students (15.5%). Smokeless tobacco use prevalence does not appear to vary between Hispanic and non-Hispanic students. No significant difference is seen in the percentage of current smoking among Hispanic and Non-Hispanic MS students.

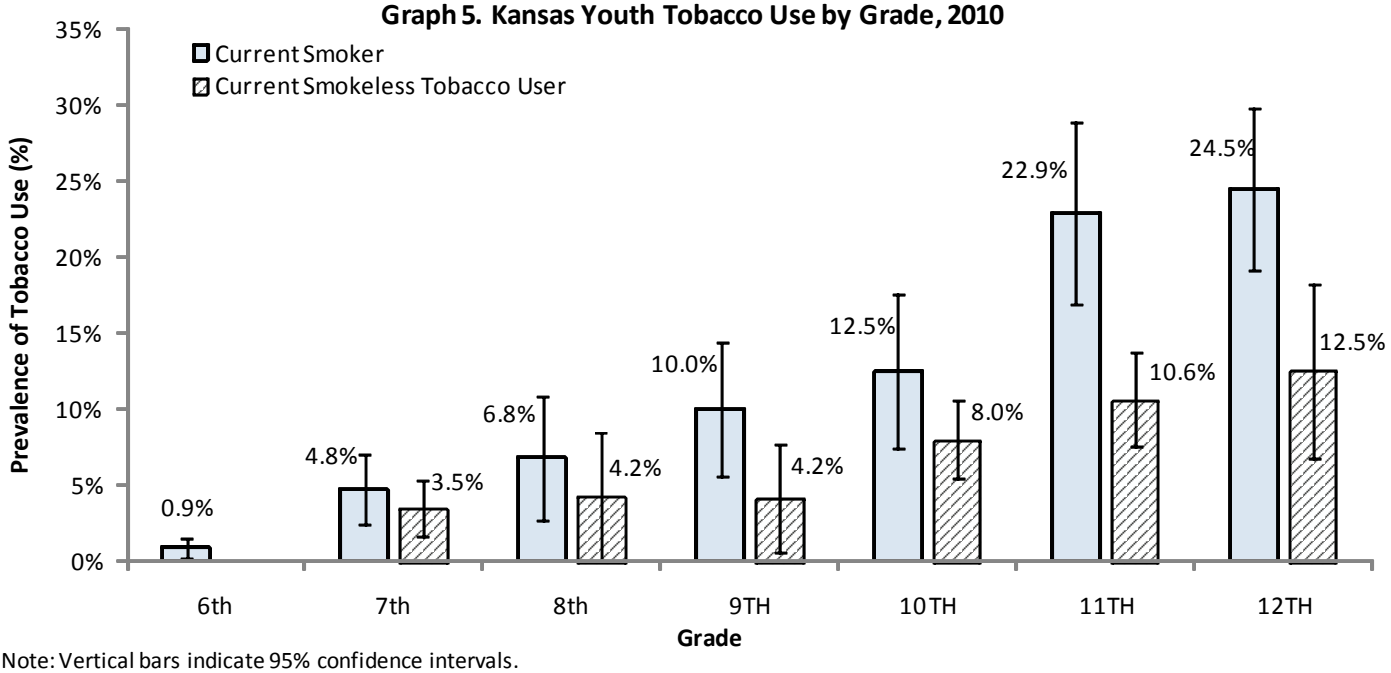
**Graph 4. Kansas Youth Tobacco Use by Ethnicity, 2010**




Note: Vertical bars indicate 95% confidence intervals.

Tobacco use progressively increases across grade levels. According to the 2007 Kansas Adult Tobacco Survey, 73% of current smokers 18 years and older reported they became regular smokers before or at the age of 18. To reduce tobacco use, it is critical that prevention programs target youth.

**Graph 5. Kansas Youth Tobacco Use by Grade, 2010**




Note: Vertical bars indicate 95% confidence intervals.

## SOCIAL ACCEPTANCE OF TOBACCO USE

Social acceptance and other social views can encourage smoking among youth. Current high school smokers, for instance, are more likely than non-smokers to believe that students who smoke have more friends. Grassroots efforts engaging youth in anti-smoking activities are one of the ways tobacco prevention programs can target and change social norms regarding tobacco use.

14.1% OF ALL MS STUDENTS AND 13.9% OF ALL HS STUDENTS THINK STUDENTS WHO SMOKE HAVE MORE FRIENDS.

26% OF CURRENT HS SMOKERS THINK STUDENTS WHO SMOKE HAVE MORE FRIENDS.

16.0% OF MS STUDENTS AND 14.7% OF HS STUDENTS HAVE PARTICIPATED IN ONE OR MORE ANTI-SMOKING EVENTS IN THEIR COMMUNITIES.

## KNOWLEDGE OF HARM OF TOBACCO USE

Overall, students are aware of the harm tobacco can cause, but those who are smokers seem to know less about the dangers of tobacco use.

6.6% OF MS STUDENTS AND 11.7% OF HS STUDENTS THINK IT IS SAFE TO SMOKE FOR A YEAR OR TWO.

31.6% OF HS SMOKERS THINK IT IS SAFE TO SMOKE FOR A YEAR OR TWO.

57.7% OF MS STUDENTS AND 31.1% OF HS STUDENTS ARE TAUGHT IN SCHOOL ABOUT THE DANGERS OF SMOKING.

## EXPOSURE TO SECONDHAND SMOKE

Secondhand smoke affects everyone. Friends, family, pets, neighbors, and the environment are all endangered. Those who appear to know the dangers of secondhand smoke are nonsmokers while fewer smokers believe secondhand smoke is harmful.

92.1% OF MS STUDENTS AND 91.5% OF HS STUDENTS THINK SECONDHAND SMOKE IS HARMFUL.

85.8% OF HS SMOKERS THINK SECONDHAND SMOKE IS HARMFUL.

Even though a majority of MS and HS students understand secondhand smoke is harmful, many of them are still exposed to secondhand smoke every day.

40.4% OF MS STUDENTS AND 55.6% OF HS STUDENTS WERE EXPOSED TO SECONDHAND SMOKE IN A ROOM OR CAR IN THE PAST 7 DAYS.

32.4% OF MS STUDENTS AND 34.4% OF HS STUDENTS LIVE WITH SOMEONE WHO SMOKES.

48.3% OF HS SMOKERS LIVE WITH SOMEONE WHO SMOKES.

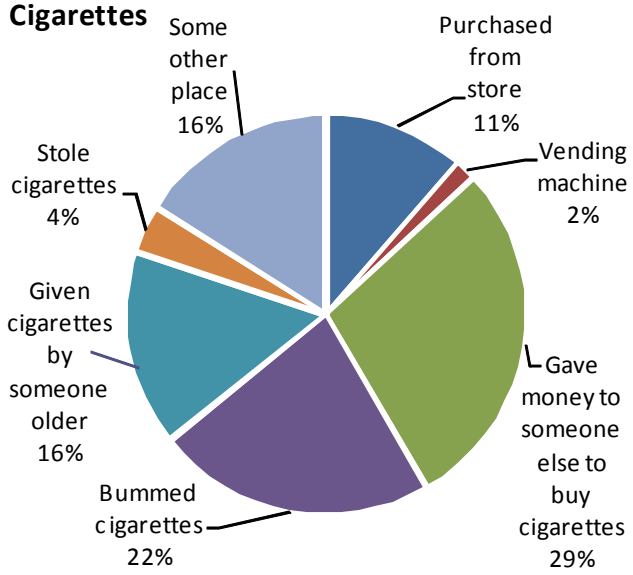
## YOUTH ACCESS TO TOBACCO PRODUCTS

Although it is illegal for anyone to sell tobacco products to persons under the age of 18, youth still report relatively easy access to cigarettes and smokeless tobacco.

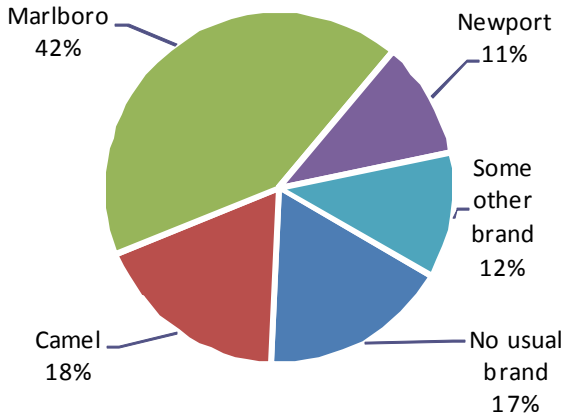
About 2 in 3 (67%) HS smokers have access to cigarettes through social sources, such as giving money to someone older to buy cigarettes, bumming, or someone older gives them cigarettes.

70.4% OF HS STUDENT SMOKERS WERE NOT ASKED FOR IDENTIFICATION WHEN THEY PURCHASED CIGARETTES FROM A STORE IN THE LAST 30 DAYS.

**Graph 6. How HS Students Get Their Cigarettes**




**Graph 7. Reported cigarette brand preference among Kansas HS smokers**




## YOUTH CIGARETTE BRAND PREFERENCE

The three most heavily advertised cigarette brands continue to be the preferred brands of cigarettes smoked by youth. Camel, Marlboro and Newport account for 71% of reported brand preference by current Kansas high school smokers.

44.2% OF CURRENT KANSAS HIGH SCHOOL SMOKERS USUALLY SMOKE MENTHOLATED CIGARETTES.

# Kansas Tobacco Use Prevention Program

Kansas Department of Health and Environment

The Kansas Department of Health and Environment (KDHE) Tobacco Use Prevention Program (TUPP) is committed to improving the health and lives of all Kansans by reducing use of and exposure to tobacco. TUPP works with state and local partners to promote interventions consistent with Centers for Disease Control and Prevention's (CDC) *Best Practices for Comprehensive Tobacco Control Programs* (2007). Currently, 47 of Kansas' 105 counties receive limited funding through Chronic Disease Risk Reduction Grants to support actions aimed at

1) eliminating exposure to tobacco smoke;
2) promoting tobacco cessation;
3) preventing initiation of tobacco use among youth; and
4) identifying and eliminating tobacco use disparities.

**Kansas Tobacco Use Prevention Program**
Bureau of Health Promotion
1000 SW Jackson, Suite 230
Topeka, KS 66612
(785) 296-8127
Email: TUPP@kdheks.gov

KanQuit!
1-800-QUIT-NOW (784-8669)
KANSAS TOBACCO USE PREVENTION PROGRAM

Kansas Department of Health & Environment
KDHE

- In 90.2 percent, respondents reported that this had occurred in three or more months.
- In 95.5 percent, respondents reported that they had eaten less than they felt they should because there was not enough money for food.
- In 76.9 percent, respondents reported that they had been hungry but did not eat because they could not afford enough food.

Table 10. Food Security Status by Household and Selected Respondent Characteristics, Kansas, 2008

| Category | Food secure (%) | Food insecure (%) | | |
|---|---|---|---|---|
| | | All | With low food security | With very low food security |
| All households | 506,091 (90.2%) | 55,042 (9.8%) | 34,464 (6.1%) | 20,578 (3.7%) |
| With children | | | | |
| Married | 89.6 | 10.4 | 7.1 | 3.3 |
| Single mothers | 72.0 | 28.0 | *14.2 | 13.8 |
| Gender | | | | |
| Male | 92.3 | 7.7 | 5.8 | 1.9 |
| Female | 87.6 | 12.4 | 7.5 | 4.9 |
| Female 18-44 | 83.6 | 16.4 | 9.9 | 6.5 |
| Race/ethnicity | | | | |
| White non-Hispanic | 91.3 | 8.7 | 6.0 | 2.7 |
| Black non-Hispanic | 81.6 | 18.2 | *12.4 | 5.8 |
| Hispanic | 84.3 | 15.7 | 8.4 | 7.3 |
| Age 65+ | 95.9 | 4.1 | 3.4 | 0.7 |
| Disability | | | | |
| with | 82.2 | 17.8 | *10.1 | 7.7 |
| without | 92.4 | 7.6 | 5.6 | 2.0 |
| Income | | | | |
| Less than $15,000 | 66.9 | 33.1 | 20.2 | 12.9 |
| $15,000 to $24,999 | 77.2 | 22.8 | *12.4 | 10.4 |
| $25,000 to $34,999 | 86.3 | 13.7 | *11.7 | 2.0 |
| $35,000 to $49,999 | 87.6 | 12.4 | 8.9 | 3.5 |
| $50,000 or more | 97.2 | 2.8 | 1.9 | 0.9 |
| BMI | | | | |
| Normal or underweight | 91.5 | 8.5 | 5.8 | 2.7 |
| Overweight | 91.0 | 9.0 | 6.3 | 2.7 |
| Obese | 87.2 | 12.8 | 8.2 | 4.5 |

Source: Kansas Behavioral Risk Factor Surveillance Survey, 2008.

Food insecurity was more prevalent among:

- Single mothers
- Women of childbearing age (18-44 years)
- Black non-Hispanic
- Hispanic
- Living with a disability
- Low income
- Obese

## Conclusions

About one in 10 households in Kansas lacks access to a secure supply of food. In Kansas, those most at risk for experiencing food insecurity are single mothers, women of childbearing age, low-income persons, black non-Hispanics, Hispanics, persons living with a disability, and obese persons.

## Public Health Implications

The information gained will allow program staff to understand the magnitude of hunger and plan appropriate and targeted intervention activities. State and local agencies and non-profit community programs will have access to the information gained through the survey.

## Limitations

- Cross-sectional surveillance survey
- Self-reporting
- Recall bias
- Only landlines used (likely to miss some lower income households)
- Non-response


## Acknowledgements

Thanks to Dr. Mark Nord in the Food Assistance Branch at the Economic Research Service of the U.S. Department of Agriculture, Dr. Ghazala Perveen, Ms. Nimisha Bhakta, and Ms. Ginger Taylor in the Bureau of Health Promotion, KDHE, and the Kansas WIC and BFH staff for their support and assistance with this project.



For more information please contact Dave Thomason at dthomason@kdheks.gov.

*Jamie S. Kim*
*David Thomason*
*Bureau of Family Health*


## References


1. Nord M, Andrews M, and Carlson S. Household Food Security in the United States, 2008. ERR-83, U.S. Dept. of Agriculture, Econ. Res. Serv. November 2009
2. Nord M. Food Insecurity in Households with Children: Prevalence, Severity, and Household Characteristics. EIB-56. U.S. Dept. of Agriculture, Econ. Res. Serv. September 2009
3. U.S. Household Food Security Survey Module: Six-Item Short Form. July 2008
4. Bickel G, Nord M, Price C, Hamilton W, and Cook J. Guide to Measuring Household Food Security, Revised 2000. U.S. Department of Agriculture, Food and Nutrition Services, Alexandria, VA. March 2000
5. Food Security in the United States: Key Statistics and Graphic. www.ers.usda.gov/Briefing/Foodsecurity/stats_graphs.htm

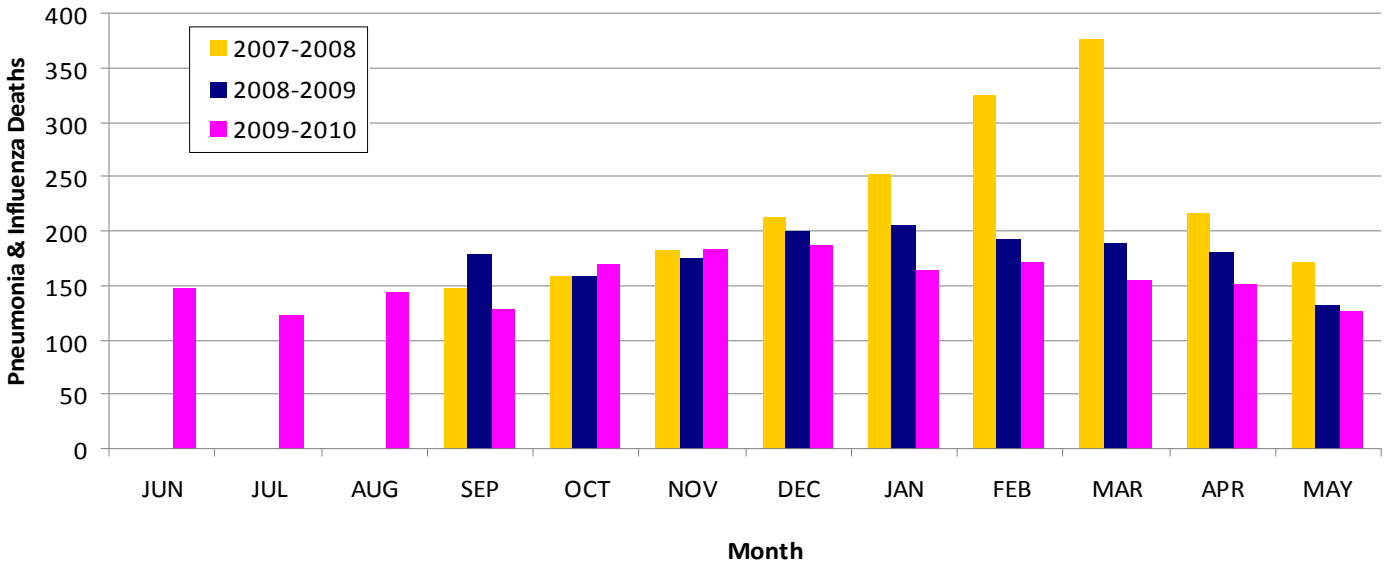

# Pandemic Pneumonia and Influenza (P&I) Mortality, Kansas, 2009-2010

KDHE's Bureau of Epidemiology and Public Health Informatics monitors influenza-related mortality. Death certificate data is collected to determine the number of deaths caused by pneumonia or influenza (P&I). Mortality is divided among three categories: pneumonia or influenza recorded as a contributing factor of death, influenza recorded as the direct cause of death, and pneumonia recorded as the direct cause of death.

Traditionally, seasonal P&I mortality data includes deaths that occurred from September through May. Because pandemic 2009 A/H1N1 influenza (pH1N1) was detected in Kansas on April 24, 2009, the period of mortality surveillance was adjusted. The 2008-2009 period was changed to September 1, 2008 through April 30, 2009. The 2009-2010 period was adjusted to include both waves of pH1N1, beginning May 1, 2009 and ending May 31, 2010.

During the 2009-2010 period, the largest numbers of P&I deaths were recorded in the months of November and December (Figure 1).

Figure 1: Deaths attributed to pneumonia or influenza by month, Kansas, September 2007-May 2010*

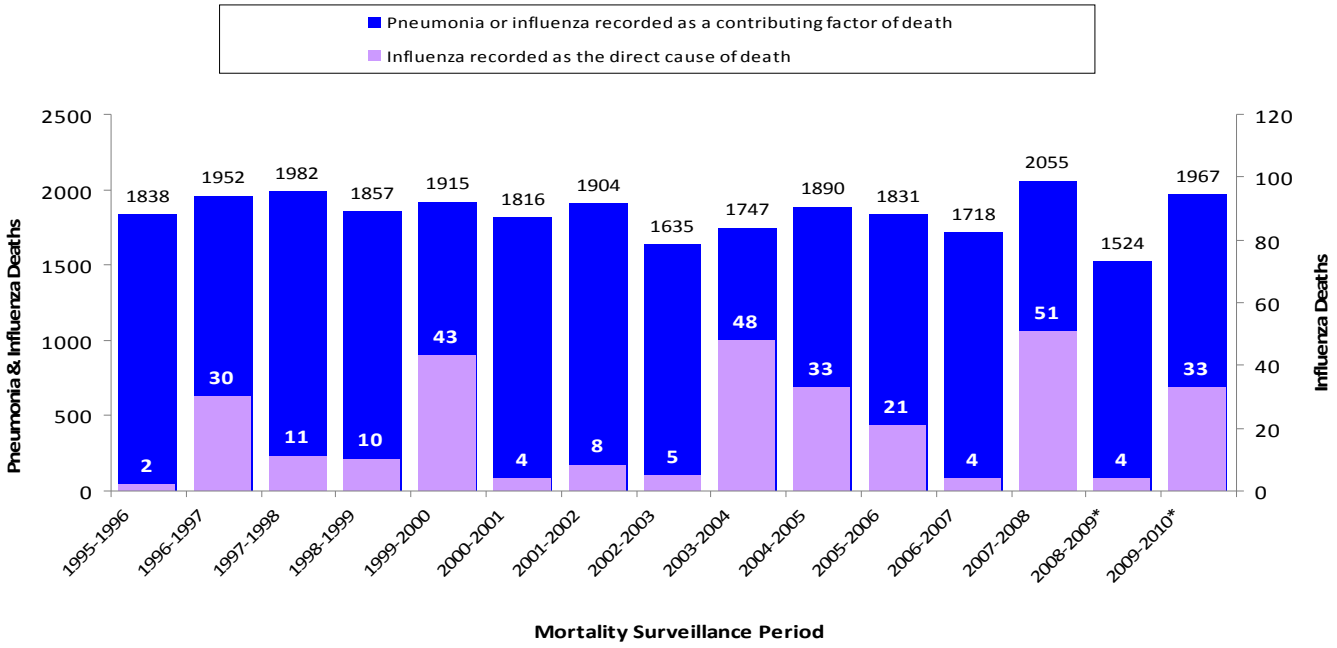



**Death certificate lists pneumonia or influenza as a contributing factor or direct cause of death. The surveillance period typically begins September 1 and ends May 31 of the following year; however, due to the emergence of pandemic H1N1 in Kansas in late April 2009, the 2008-2009 period (September 1, 2008 through April 30, 2009) ended one month early and the 2009-2010 period (May 1, 2009 through May 31, 2010) began one month early and was extended through the summer. The 2009-2010 data is provisional and subject to change.*

A total of 522 deaths—one directly attributed to influenza, and 521 other P&I deaths—occurred during the four extra months (May through August 2009) contained within the 2009-2010 surveillance period. These additional deaths pushed the mortality total to 1,967, above the 14-year median of 1,847.5. However, P&I mortality observed during the pandemic 2009-2010 surveillance period was not beyond the range previously seen; higher mortality was seen during September 1997 – May 1998 and September 2007 – May 2008 (Figure 2).

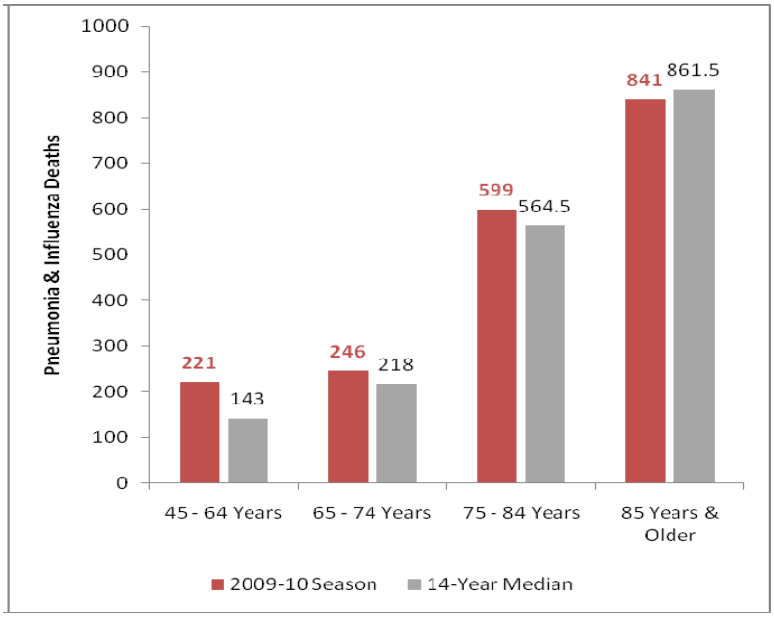
Of the total number of P&I deaths (n=1,967) recorded during the 2009-2010 pandemic period, 33 (1.7%) were directly attributed to influenza. This number was above the 14-year median (10.5 deaths) and mean (20 deaths) observed since 1995-1996. A greater number of directly-attributed deaths was observed in three previous seasons: 1999-2000, 2003-2004, and 2007-2008 (Figure 2).

Figure 2: Pneumonia and influenza mortality by surveillance period, Kansas, 1995-2010 *




**Each influenza season begins September 1 and ends May 31 of the following year, with the exception of 2008-2009 (September 1, 2008 through April 30, 2009) and 2009-2010 (May 1, 2009 through May 31, 2010). This time shift is due to the emergence of pandemic H1N1 in May 2009. The 2009-2010 data is provisional and subject to change.*

Figure 3: Pneumonia and influenza Deaths by Selected Age Groups, 2009-2010 Season and 14-year Median, Kansas




National data shows that P&I mortality during the pandemic was lower than expected because adults aged 65 years and older—the age group that usually accounts for 90 percent or more of P&I mortality—were less affected by the 2009 H1N1 virus compared to younger age groups [1]. In Kansas, 1,686 deaths were recorded among this age group from May 2009-May 2010. Despite the additional four months included in the 2009-2010 surveillance period, this total is near the 14-year median of 1,658 (Figure 3)

In summary, despite the high morbidity caused by pH1N1 during the 2009-2010 influenza surveillance period, mortality did not exceed historical levels.

*Daniel Neises, MPH*
*Bureau of Epidemiology and Public Health Informatics*

### Reference

1. Centers for Disease Control and Prevention. Update: Influenza Activity — United States, 2009–10 Season. MMWR 2010;59:901-908. Available online at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5929a2.htm

## 2009 Annual Summary Released

The *2009 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 the baseline document used to assess the health of Kansans.

This year's annual summary contains six new tables.

- Table 20, Live Births by Initiation of Breastfeeding, reports the number and percent of woman who started breastfeeding their infant before discharge.
- Table 21, Live Births by the Mother's Reported Cigarette Use, provides county level statistics on smoking use before and during pregnancy.
- Table 22, Live Births by Birth Weight Category for Gestational Age, provides information on infants that are small for their gestational age.
- Table 23, Mother's Weight Gain in Pregnancy by Pregnancy BMI Category, addresses whether woman has sufficient weight gain during pregnancy.
- Table 65, Deaths by Number and Percent Related to Tobacco, reports on the deaths where the certifying physician said the death was related to tobacco.
- Table 66, Deaths from 39 Selected Causes by Number and Percent and Sex of Decedent, reports the impact of tobacco on the leading causes of death in Kansas.

Each of these new tables are made possible from information that is now collected on the birth and death certificates. Please see the Technical Notes, starting on page 157 for more details on the new tables.

The report highlights a number of items of interest for 2009:

- Kansas increased in population to 2,818,747 residents in 2009 from 2,802,134 in 2008.
- In the last five years (2005-2009) frontier and rural counties continued to lose population; while semi-urban and urban counties gained in population.
- In the last 20 years, population increases of 71.9 percent in residents 45-54 years of age and 51.7percent in residents 55-64 years of age reflected the aging of the baby boomers
- In 2009, a total of 41,388 births were registered to Kansas residents, 427 less than in 2008.
- Over nine percent (9.2) of live births in 2009 were preterm (less than 37 completed weeks of gestation).
- The percent of Kansas mothers receiving inadequate prenatal care (14.9) decreased 5.7 percent between 2008 and 2009.
- Out-of-wedlock births followed national trends, increasing to 37.6 percent (15,572 live births).
- The Kansas 2009 teen pregnancy rate (26.8 per 1,000 female teens) has decreased 6.3 percent from 28.6 in 2008.
- In 2009, a total of 290 infant deaths occurred (7.0 infant deaths per 1,000 live births), 13 less than in 2008.
- 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 (15.5) is 2.6 times higher than the rate for White non-Hispanics (6.0).
- Almost half of the abortions performed in Kansas occurred to non-Kansans. The number of reported abortions in 2009 (9,474) decreased 11.0 percent from 2008 (10,643).
- The age-adjusted death rate for heart disease dropped 6.3 percent from 2008 to 2009, a statistically significant decrease.
- For Kansas, in 2009, cancer passed heart disease as the leading cause of death.
- In 2009, unintentional injuries were the leading cause of death for Kansas residents 1-4 and 15-24 years of age. For the first time, cancer was the leading cause of death for children 5-14.

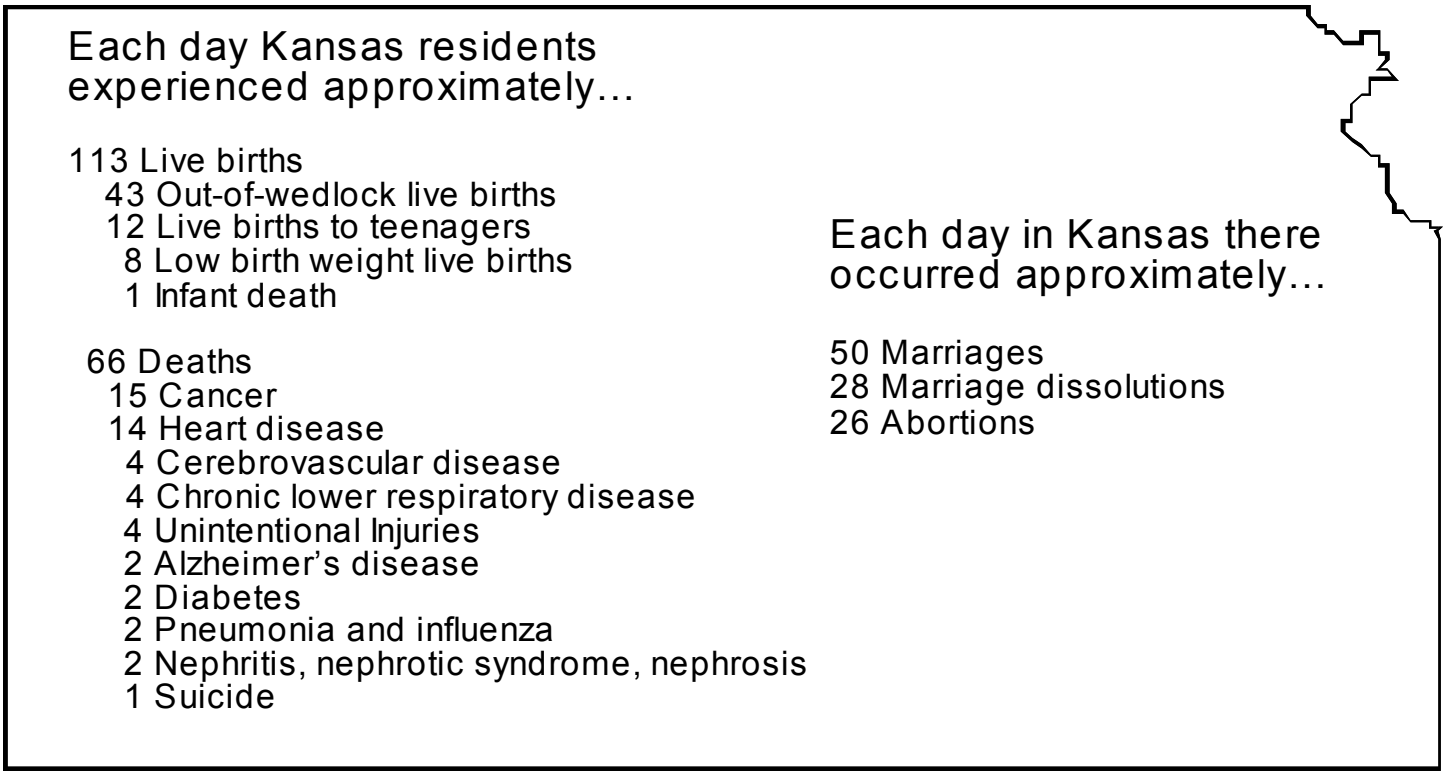
The tables and charts contained in this report represent only a glimpse of the insight that can be gained from the data reported on live births, deaths, stillbirths, marriages, marriage dissolutions (divorce and annulment), and abortions recorded annually. It can be found at http://www.kdheks.gov/bephi/. 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.

Table 7. Selected Vital Events and Percent Change, Kansas, 2009,2008 and 1990

| Vital Events | 2009 | 2008 | Percent Change 2008-2009 | 1990 | Percent Change 1990-2009 |
|---|---|---|---|---|---|
| Live Births | 41,388 | 41,815 | -1.0 | 38,872 | 6.5 |
| Out-of-Wedlock Births | 15,572 | 15,754 | -1.2 | 8,337 | 86.8 |
| Stillbirths | 213 | 182 | 17.0 | 217 | -1.8 |
| Hebdomadal Deaths | 144 | 160 | -10.0 | 162 | -11.1 |
| Perinatal Period Ill Deaths | 357 | 342 | 4.4 | 379 | -5.8 |
| Neonatal Deaths | 176 | 193 | -8.8 | 196 | -10.2 |
| Infant Deaths | 290 | 303 | -4.3 | 325 | -10.8 |
| Maternal Deaths | 8 | 7 | 14.3 | 5 | 60.0 |
| Deaths | 23,997 | 24,896 | -3.6 | 22,173 | 8.2 |
| Marriages | 18,268 | 18,717 | -2.4 | 22,720 | -19.6 |
| Marriage Dissolutions | 10,333 | 9,818 | 5.2 | 12,580 | -17.9 |
| Abortions | 4,780 | 5,512 | -13.3 | 4,175 | 14.5 |

Residence data are presented for births, deaths, abortions Occurrence data are presented for marriages and marriage dissolutions

Figure 8. Every Day During 2009




## Bureaus Merge

The Bureau of Surveillance and Epidemiology and the Bureau of Public Health Informatics have merged to become the Bureau of Epidemiology and Public Health Informatics. State Epidemiologist D. Charles Hunt, MPH, is the bureau director. The deputy director is State Registrar, Elizabeth W. Saadi, PhD.

The merged bureau has responsibility for infectious disease epidemiology and response, environmental epidemiology, trauma epidemiology, healthcare-associated infections, and public health informatics involving health care data analysis, vital statistics data analysis, and infectious disease surveillance data. The bureau is also responsible for operation of the Kansas Information for Communities health data portal.

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**

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. John W. Mitchell, Acting Secretary KDHE; Jason Eberhart-Phillips, MD, State Health Officer and Director, Division of Health; D. Charles Hunt, MPH, State Epidemiologist and Director, BEPHI; Elizabeth W. Saadi, PhD, State Registrar, Deputy Director, BEPHI; Greg Crawford, Editor.