

## Binge Drinking Prevalence, Frequency and Intensity in Kansas, BRFSS 2011

### Background

Excessive alcohol consumption was responsible for approximately 9,856 deaths and 20,750 years of potential life lost in Kansas each year during 2001-2005 [1]. Excessive alcohol use includes binge drinking, heavy drinking, any alcohol consumption by people under 21 years old, and any alcohol use by pregnant women [2]. In Kansas, excessive alcohol consumption cost approximately \$1.9 million in 2006 or approximately \$2.09 per drink [3]. These costs included but were not limited to health care expenses, crime and lost productivity. Nationally, about three-quarters of the total cost of excess alcohol consumption was due to binge drinking [3]. Excessive alcohol consumption, including binge drinking, contributes to injuries (including motor vehicle crashes), disease, violence and sexually transmitted infections [3]. Binge drinking is a costly public health concern. Healthy People 2020, which provides 10-year national health objectives, has set several objectives dedicated to healthier consumption of alcohol by reducing the proportion of adults engaging in binge drinking or excessively drinking, as well as reducing overall annual alcohol consumption [4].

### Objective

It is the objective of the current paper to examine binge drinking prevalence, frequency and intensity in Kansas by various demographic characteristics in Kansas.

### Method

The 2011 Kansas Behavioral Risk Factor Surveillance System (BRFSS) data were used for this report.

Kansas BRFSS is an ongoing, annual, population-based random-digit-dial survey of non-institutionalized adults ages 18 years and older living in a private residence with landline or cell phone service in Kansas. Data from the Centers for Disease Control and Prevention (CDC) Alcohol Consumption Core Module of the survey, which included responses to questions regarding frequency of binge drinking episodes and largest number of drinks consumed by binge drinkers, were analyzed for this report. A total of 20,172 respondents completed the survey. Binge drinking prevalence was estimated by

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calculating the percentage of respondents who reported drinking in the past 30 days and had one binge drinking episode, defined as five alcoholic beverages for men or four alcoholic beverages for women, on an occasion. To capture this information, respondents were asked the following question, “One drink is equivalent to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor. During the past 30 days, on the days when you drank, about how many drinks did you drink on the average?” Respondents were then asked, “Considering all types of alcoholic beverages, how many times during the past 30 days did you have X [X = 5 for men, X = 4 for women] or more drinks on an occasion?” Responses to this question were used to compute the number of binge drinking episodes among binge drinkers only (i.e. frequency), by selected demographic characteristics. Lastly, respondents were asked “During the past 30 days, what is the largest number of drinks you had on any occasion?” Responses to this question were used to compute the maximum number of drinks consumed on an occasion during the past 30 days among binge drinkers only, by selected demographic characteristics.

All prevalence and mean estimates and 95 percent confidence intervals (CI) are presented as weighted estimates, calculated using SAS software version 9.3, to account for the complex survey design of the Kansas BRFSS. Two-tailed t-tests were used to determine statistically significant mean differences between subgroups at the alpha <0.05 level.

## Results

Binge drinking prevalence estimates, as well as number of binge drinking episodes (frequency) and maximum number of drinks consumed in any one episode (intensity), along with their 95 percent confidence intervals, are presented in Table 1.

In 2011, the overall prevalence of binge drinking among Kansas adults 18 years and older was 17.0 percent. Binge drinking prevalence was twice as high among men (23.1%) as compared to women (11.2%). Male binge drinkers also reported a significantly greater number of binge drinking episodes during the preceding 30 days, on average, than female binge drinkers (4.6 versus 3.2 episodes, respectively;  $p < .001$ ) and a significantly higher average maximum number of drinks consumed on any one occasion (8.9 versus 5.8 drinks, respectively;  $p < .001$ ).

Binge drinking prevalence was highest among adults aged 18-24 years (28.3%) and adults aged 25-34 years (19.5%) and decreased with increasing age. Overall, the average number of binge drinking episodes was similar across age subgroups. However, among binge drinkers, the highest average maximum number of drinks consumed on any one occasion decreased with increasing age, from 9.2 drinks on average among adults aged 18-24 years to 5.5 drinks on average among adults aged 65 years and older.

The prevalence of binge drinking was highest among Hispanics (21.2%) as compared to other race/ethnicity subgroups. Overall, the average number of binge drinking episodes and average maximum number of drinks consumed on any one occasion were similar across racial/ethnic subgroups, except for non-Hispanic African Americans, who reported a significantly greater number of binge drinking episodes in the preceding 30 days, on average, than Hispanics (5.8 versus 3.6 episodes, respectively;  $p=0.02$ ).

Table 1. Binge Drinking Prevalence, Frequency, and Intensity by Selected Socio-demographic Characteristics

	Prevalence		Frequency*		Intensity**	
	%	95% CI	Mean	95% CI	Mean	95% CI
<b>Sex</b>						
Men	23.1	21.8-24.3	4.7	4.3-5.1	8.9	8.5-9.3
Women	11.2	10.4-12.1	3.2	2.9-3.6	5.8	5.6-6.1
<b>Age Groups</b>						
18-24 years	28.3	25.0-31.6	4.2	3.5-4.8	9.2	8.4-10.0
25-34 years	28.0	25.7-30.4	4.1	3.6-4.7	8.3	7.7-8.8
35-44 years	19.5	17.6-21.4	3.8	3.2-4.5	7.7	7.1-8.3
45-54 years	16.4	15.0-17.8	4.2	3.5-4.8	6.8	6.5-7.2
55-64 years	9.2	8.1-10.2	5.3	4.3-6.2	6.4	6.0-6.8
65 + years	3.1	2.5-3.6	4.7	3.3-6.0	5.5	5.0-6.0
<b>Race/ Ethnicity Groups</b>						
White Non-Hispanic	16.8	16.0-17.6	4.2	3.9-4.5	7.8	7.5-8.1
Black Non-Hispanic	12.8	8.8-16.7	5.8	4.2-7.4	8.0	5.9-10.1
Multiracial/Other Race Non-Hispanic	18.2	13.7-22.7	3.9	2.6-5.1	8.2	7.2-9.2
Hispanic	21.2	17.6-24.7	3.6	2.7-4.4	8.1	7.3-9.0
<b>Marital Status</b>						
Married or member of an unmarried couple	15.2	14.3-16.0	3.7	3.3-4.0	7.1	6.9-7.4
Divorced or separated	16.5	14.5-18.4	5.0	4.1-5.9	8.1	7.5-8.8
Widowed	4.1	3.0-5.1	3.8	2.2-5.4	5.7	4.9-6.6
Never married	27.0	24.6-29.5	4.8	4.2-5.3	9.1	8.4-9.7
<b>Education Groups</b>						
Less Than High school	14.7	11.8-17.5	5.6	4.2-7.0	9.9	8.5-11.3
High school or GED	16.4	15.0-17.9	5.0	4.3-5.6	8.5	7.9-9.0
Some College	18.5	17.1-19.9	4.0	3.6-4.4	7.6	7.2-8.1
College Graduate	16.7	15.5-17.9	3.1	2.8-3.5	6.8	6.5-7.1
<b>Annual Household Income Groups</b>						
Less than \$15,000	14.6	11.8-17.5	4.4	3.3-5.5	8.7	7.3-10.1
\$15,000-\$24,999	15.3	13.3-17.3	4.9	4.0-5.7	9.0	8.1-9.8
\$25,000-\$34,999	15.5	13.2-17.8	4.8	3.7-5.8	8.0	7.4-8.7
\$35,000-\$49,999	17.5	15.5-19.6	5.0	4.1-5.9	8.6	7.8-9.4
\$50,000 or more	19.5	18.3-20.7	3.5	3.2-3.9	7.1	6.8-7.5
<b>Population Density Groups</b>						
Frontier	12.0	9.3-14.7	5.0	3.0-7.1	9.1	6.3-11.9
Rural	14.4	12.4-16.4	4.6	3.6-5.5	8.6	7.4-9.9
Density-Settled Rural	16.4	14.6-18.2	4.3	3.5-5.0	8.8	8.2-9.4
Semi-Urban	16.5	14.6-18.4	3.9	3.3-4.5	8.5	7.7-9.4
Urban	18.3	17.1-19.4	4.1	3.8-4.5	7.2	6.9-7.5
<b>Insurance Status</b>						
Uninsured	19.9	17.6-22.1	5.2	4.3-6.0	9.8	8.9-10.6
Insured	16.5	15.7-17.3	4.0	3.7-4.3	7.4	7.1-7.7

\*Note: Frequency is defined as number of binge drinking episodes in past 30 days.

\*\*Note: Intensity is defined as largest number of drinks in any one occasion on past 30 days.

Kansas adults 18 years and older who did not graduate from high school reported the lowest prevalence of binge drinking (14.7%) among education subgroups. However, those who did not graduate from high school who reported binge drinking in the last 30 days had a significantly greater number of binge drinking episodes, on average, as compared those who attended some college or were college graduates (5.6 versus 4.0 and 3.1 episodes, respectively;  $p=0.03$  and  $p<0.01$ , respectively). In addition, those who did not graduate from high school who reported binge drinking in the last 30 days had a significantly higher average maximum number of drinks consumed on any one occasion as compared to those who attended some college or were college graduates (9.9 versus 7.6 and 6.8 drinks, respectively;  $p <0.01$  and  $p<0.01$ , respectively).

Binge drinking prevalence increased with increasing annual household income and was the highest among Kansas adults whose annual household income was \$50,000 or more (19.5%). However, binge drinkers whose annual household income was \$50,000 or more reported significantly fewer binge drinking episodes in the preceding 30 days than binge drinkers with an annual household income of \$15,000-\$24,999 (3.5 versus 4.8 episodes, respectively; ;  $p <0.01$ ). In addition, binge drinkers whose annual household income was \$50,000 or more reported a lower average maximum number of drinks consumed on any one occasion in the preceding 30 days than binge drinkers with an annual household income of \$15,000-\$24,999 (7.1 versus 9.0 drinks, respectively;  $p <0.01$ ).

Binge drinking prevalence was highest among those who were never married (27.0%) as compared to other marital status subgroups. However, binge drinkers who were divorced or separated reported a significantly greater number of binge drinking episodes in the preceding 30 days, on average, than those who were married or a member of an unmarried couple (5.0 versus 3.7 episodes, respectively;  $p=0.01$ ). Binge drinkers who were never married also reported consuming a significantly higher average maximum number of drinks consumed on any one occasion than those who were married or a member of an unmarried couple (9.1 versus 7.1 drinks, respectively;  $p <.01$ ).

Binge drinking prevalence was higher among those who were uninsured (19.9%) compared to those who were insured (15.7%). Kansas binge drinkers who were uninsured reported a significantly greater number of binge drinking episodes in the preceding 30 days, on average, than Kansas binge drinkers who were insured (5.2 versus 4.0 episodes, respectively;  $p=0.01$ ) and a significantly higher average maximum number of drinks consumed on any one occasion (9.8 versus 7.4 drinks, respectively;  $p <0.01$ ).

Binge drinking prevalence was highest among those living in urban counties (18.3%). Overall, the average number of binge drinking episodes and the average maximum number of drinks consumed was similar across population density groups except those living in rural areas, who reported a significantly higher number of binge drinking episodes in the preceding 30 days, on average, than those living in urban areas (8.6 versus 7.2 episodes, respectively;  $p=0.04$ ).

## Discussion

This report indicates that binge drinking is common among adults living in Kansas, especially among: men, persons aged 18-24 years, Hispanics, persons who had some

college or college education, and those whose annual household income was greater than \$50,000. The number of binge drinking episodes among binge drinkers who drank in the past 30 days was relatively higher, on average, among: non-Hispanic African Americans, persons who did not attend high school and those who annual household income was \$35,000-\$49,999. The maximum number of drinks among binge drinkers who drank in the past 30 days was relatively higher, on average, among: persons 18-24 years and those whose annual household income was \$15,000-\$24,999.

Results from this study demonstrate the need for assessing both frequency and intensity of binge drinking among binge drinkers, in addition to the prevalence of binge drinking among the adult Kansas population to comprehensively assess this health risk factor and to appropriately plan and evaluate targeted public health prevention efforts.

Jeanie Santaularia, MPH  
Ericka Welsh, PhD  
Bureau of Health Promotion

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## Changes in Cesarean Delivery and Induction Rates by Gestational Age, Kansas, 1996-2011

### Background

According to the National Centers for Health Statistics (NCHS) Data Brief Number 124 of June 2013, “the U.S. cesarean delivery rate for singleton births increased nearly 60% from 1996-1997 to 2009, from 19.7% to 31.3%”, but stabilized at 31.3% for 2009-2011. The data brief also examines the percentage of births by cesarean section at gestational age of 38 weeks versus at 39 weeks, from 1996 to 2011, and reports that “the cesarean delivery rate decreased for births at 38 weeks from 2009 to 2011, but increased for births at 39 weeks”. [1] It reports that the changes in percentages in Kansas at these gestational ages from 2009 to 2011 were not statistically significant.

### Methods

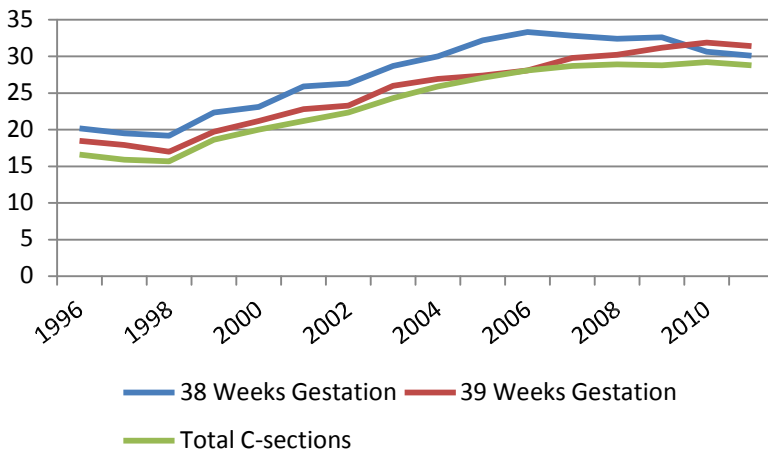
The current paper examines data from Kansas birth history files from 1996 to 2011 to identify trends in delivery by cesarean section and by induction. In Kansas, birth certificates prior to 2005, containing information on whether cesarean sections were elective, were used to spot increases in elective procedures; and data for births at 38 weeks gestation were compared with those for births at 39 weeks gestation to see if there was any

reduction in cesarean deliveries or inductions at gestational age less than 39 weeks which might coincide with national and state efforts to limit early elective, non-medically indicated deliveries.

**Results**

In Kansas, there was a statistically significant increase in the percentage of singleton births by cesarean delivery every year from 1998 (15.7 percent) to 2008 (28.9 percent), after which the percentage remained relatively unchanged through 2011. A contributing factor in the increase in cesarean deliveries appears to have been the increase in elective cesareans. In Kansas, from 1996 to 2004 (the last year for which birth certificate data

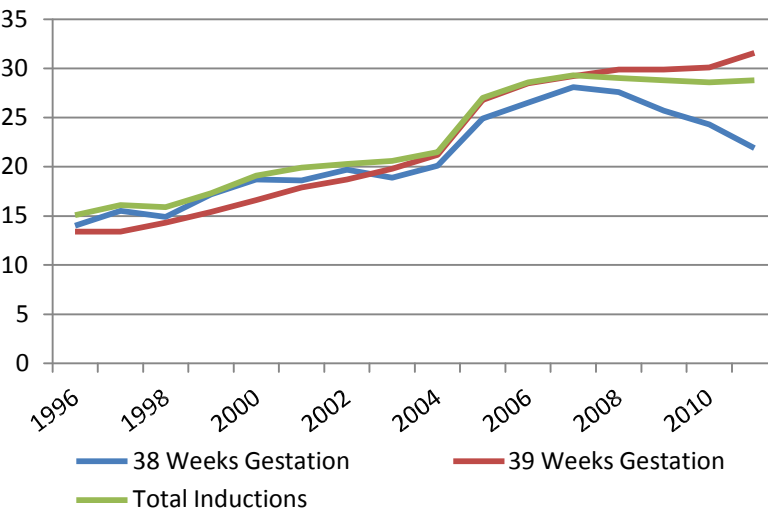
Figure 1. Percent of Singleton Births Delivered by Cesarean Section at 38 and 39 Weeks Gestation and Total Kansas, 1996 - 2011



contain information on elective cesarean deliveries), the percentage of non-repeat cesarean deliveries of singletons which were elective increased from 13.4% to 23.5%. The percentage of elective cesarean deliveries at less than 39 weeks gestation rose from 30.1% in 1996 to 39.3% in 2004.

weeks of gestation from 2006 (33.3 percent) to 2011 (30.1 percent). In 2010, the percent of births by cesarean section at 38 weeks gestation (30.6 percent) fell below the percent at 39 weeks for the first time in the study period (figure 1).

Figure 2. Percent of Singleton Births Induced at 38 and at 39 Weeks Gestation and Total Kansas, 1996 - 2011



In Kansas, there was a significant decrease in cesarean deliveries at 38 weeks of gestation from 2006 (33.3 percent) to 2011 (30.1 percent). In 2010, the percent of births by cesarean section at 38 weeks gestation (30.6 percent) fell below the percent at 39 weeks for the first time in the study period (figure 1).

Similarly, the percent of births induced at 38 weeks gestation in Kansas began a decline in 2007, dropping from 28.1 percent to 21.9 percent in 2011, while the percentage of births induced at 39 weeks gestation continued to increase over the entire period from 1996 to 2011 (figure 2)

**Discussion**

Although the traditional definition of a “full-term

birth” has been “at 37 weeks gestation”, studies over the past 20 years have shown that the brain, lungs, heart, and immune system continue to develop in utero until 39 weeks, when full fetal development is considered complete. Forcing delivery before natural labor begins, by cesarean section or by induction of labor, increases the risk of complications to the newborn and to the mother, although it may be necessary to deliver an infant before 39 weeks gestation because of medical conditions of the mother (gestational or chronic hypertension, preeclampsia/eclampsia, diabetes, etc.).

Among those calling for action to limit early elective deliveries are the American College of Obstetricians and Gynecologists, the March of Dimes, the Centers for Medicare and Medicaid Services, and state and national quality organizations. Methods being implemented include “hard stop” policies, or prohibition by hospitals; “soft stop” policies, where physicians agree to refrain from performing the early procedure without medical reason; and education programs aimed at prospective parents to reduce demand for early delivery.

## Conclusions

Nationally, and in Kansas, the past several years have seen the stabilization of the rate of delivery by cesarean section, after years of increase. The NCHS report showing no significant change in rates by gestational age in Kansas was based on only years 2009 through 2011, and therefore did not capture the true picture, that there was a reversal in the upward trend in deliveries by cesarean section at 38 weeks gestation, beginning in 2006 in Kansas, and that there was the beginning of a significant drop in the percentage of births induced in 2007. These are possible indications that efforts to stop elective, non-medically indicated deliveries before 39 weeks gestation may be having some effect. Meanwhile, such efforts will continue, and should result in an increase in healthier newborns.

Joy Crevoiserat, B.A.  
Bureau of Epidemiology and Public Health Informatics

## Reference

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## Healthcare Quality Indicators Improve

### Introduction

Public health agencies have a number of methods for measuring and reporting on health status. Kansas Health Matters is a cross-sectional approach to reporting health indicators at geographic levels. Another approach is the Agency for Healthcare Research and Quality (AHRQ) Quality Indicators (QI).

These measures use hospital discharge data to estimate quality of care for ambulatory-care-sensitive conditions. One subset of indicators is called prevention indicators and covers conditions in which good outpatient care can potentially prevent the need for

hospitalization or for which early intervention can prevent complications or more severe disease. These measures are population based and adjusted for covariates [1].

**Methods**

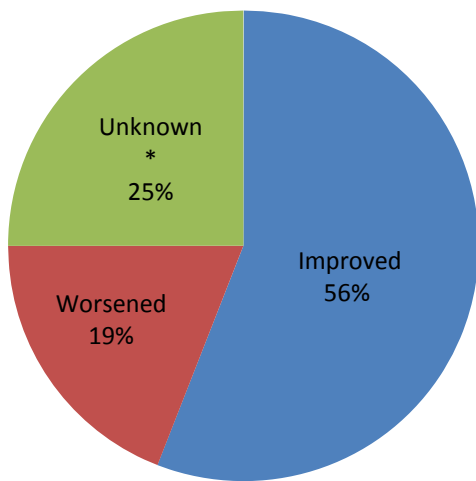
A sampling of hospital discharge data are the source for indicators in national reports, Prevention (Preventable Hospitalizations) Quality (PQI), Inpatient Quality, Patient Safety, and Pediatric Quality. In Kansas, indicators are prepared using the discharge dataset provided by the Kansas Hospital Association to the Kansas Department of Health and Environment (KDHE). KDHE uses AHRQ Software version 4.1 to prepare indicators and calculate risk-adjusted rates [2].

Table 1. Preventable Hospitalization Quality Indicators (PQIs)

Diabetes, Short Term Complications	Urinary Tract Infection
Perforated Appendix	Angina Without Procedure
Diabetes, Long Term Complications	Uncontrolled Diabetes, Without Complications
Chronic Obstructive Pulmonary Disease	Adult Asthma
Hypertension	Lower Extremity Amputation/Diabetes Patients
Congestive Heart Failure	Acute PQI (Indicators 10, 11, 12)
Dehydration	Chronic PQI (Indicators 1, 3, 5, 7, 8, 13, 14, 15, 16)
Bacterial Pneumonia	Overall PQI (Acute PQI & Chronic PQI)

Most rates are expressed as discharges per 100,000 population age 18 and over. Some rates are expressed as events per 1,000 case specific discharges. KDHE prepared 84 State-level QI measures for 2011. A decreasing rate is considered improvement.

Figure 1. Kansas AHRQ Indicators Change, 2000-2011, N=84



\* Insufficient data for determination

KDHE maintains updated findings in a Kansas Information for Communities FastStats spreadsheet available at <http://kic.kdhe.state.ks.us/kic/OHA/reports/excel/AHRQ%20Indicators.xls> and as an attachment to the PDF version of this Kansas Health Statistics Report issue.

Thirteen PQIs and three summary PQI measures (Table 1) provide the most insight into the community health care system. Regional PQI measures were possible based on three-year rolling time periods. Comparisons of state-level indicators evaluated the percent change in rates between 2000 and 2011. The comparison for regional indicators involved 2006-2008 and 2009-2011.



## Results

Over half of all state-level quality indicators (56%) improved in 2011 compared to 2000 (Figure 1). Almost one out of five (19%) indicators worsened. Change in one out of four indicators could not be assessed because of insufficient data to calculate rates.

Kansas PQI rates improved in 13 of 16 categories from 2000 to 2011. The overall PQI, a summary measure, improved by 29.2 percent from 1,839.0 discharges per 100,000 population 18 and older to 1,302.7 discharges per 100,000 population 18 and older.

The largest PQI rate improvement was 86.0 percent in the category of hospital admissions for angina without a cardiac procedure and for appendicitis discharges involving a perforated appendix.

In the 15 health preparedness regions, the West Pyramid Public Health Region was the only one in which a majority of the prevention quality indicators improved (54%) between 2006-2008 and 2009-2011.

## Discussion

The Agency for Healthcare Research and Quality notes, “Even though these indicators are based on hospital inpatient data, they provide insight into the community health care system or services outside the hospital setting.”

The decrease in a majority of the AHRQ indicators is a good sign. Reductions in prevention indicators show movement within the Kansas health care system to address health issues to prevent new hospitalizations and reduce readmissions. Reimbursement incentives for health care providers may result in additional reductions in PQI rates. PQIs can be considered a screening tool to identify possible health care quality problem areas. Such areas might need further investigation by health care organizations.

These results have at least three limitations. The analysis involves hospitalizations with a length of stay greater than 24 hours. The limited number of cases for some preventable conditions makes risk-adjusted analysis of disparities by race and Hispanic origin unreliable. Indicators do not address other factors outside the direct control of the health care system that can result in hospitalization, such as poor environmental conditions or lack of patient adherence to treatment recommendations.

Greg Crawford, BA  
Joy Crevoiserat, BA  
Bureau of Epidemiology and Public Health Informatics

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## 2012 Annual Summary Released

The 2012 Kansas Annual Summary of Vital Statistics is the latest edition of a report released by the Kansas Department of Health and Environment. The report serves as a baseline document used to assess the health of Kansans and changes over time (Table 1).

Table 1. Selected Vital Events and Percent Change Kansas, 2012, 2011, and 1993

Vital Event	2012	2011	Percent change, 2011-2012	1993	Percent change, 1993-2012
Live Births	40,304	39,628	1.7	37,285	8.1
Out-of-Wedlock Births	14,805	14,749	0.4	9,599	54.2
Stillbirths	195	188	3.7	222	-12.2
Hebdomadal	142	121	17.4	171	-17.0
Deaths Perinatal Period III	337	309	9.1	393	-14.2
Deaths Neonatal Deaths	173	157	10.2	201	-13.9
Infant Deaths	254	247	2.8	325	-21.8
Maternal Deaths	4	4	0.0	3	33.3
Deaths	25,084	25,114	-0.1	23,508	6.7
Marriages	18,154	17,897	1.4	21,527	-15.7
Marriage Dissolutions	9,782	10,445	-6.3	12,088	-19.1
Abortions	3,802	3,946	-3.6	6,394	-40.5

Residence data are presented for births, deaths, abortions

Occurrence data are presented for marriages and marriage dissolutions

The report highlights a number of items of interest for 2012:

- Kansas increased in population from 2,871,238 residents in 2011 to 2,885,905 residents in 2012, according to U.S. Census Bureau estimates.
- In the past 20 years, population increases of 46.8 percent in residents 45-54 years of age and 73.8 percent in residents 55-64 years of age reflected the aging of the baby boomers.
- In 2012, there were 40,304 live births to Kansas residents, 676 more than in 2011.
- The 2012 Kansas birth rate (14.0 per 1,000 population) increased 1.4 percent from 13.8 births per 1,000 population in 2011, but this is still the third lowest birth rate since Kansas created a Vital Records system in 1912. The only years with lower birth rates were 2011 and 1973, when the birth rate was 13.9 per 1,000 population.
- Seven (7.2%) percent of infants born to Kansas mothers in 2012 had low birth weights (under 2,500 grams). Low birth weights were more common for Black non-Hispanic infants (13.2%) than for White non-Hispanic (6.5 %) or for Hispanic (6.9%) infants.
- The percent of Kansas mothers receiving inadequate prenatal care in 2012 (11.7%) decreased 9.3 percent from 2011.
- There were 254 infant deaths to Kansas residents in 2012, an increase of 2.8 percent from 247 infant deaths in 2011. Had there been 12 fewer infant deaths in Kansas in 2012, the state would have met the Healthy People 2020 target for infant death rates.

- The disparity in the infant, neonatal, and post neonatal death rates between White non-Hispanics and Black non-Hispanics continues to be a public health concern. The Black non-Hispanic infant death rate in 2012 (14.2 deaths per 1,000 live births) was 2.8 times higher than the rate for White non-Hispanics (5.0 deaths per 1,000 per live births).
- Out-of-wedlock births decreased slightly from 37.2 percent in 2011 to 36.7 percent in 2012. This is only the second, and first consecutive, decrease in the percentage of out-of-wedlock births since 1951.
- The Kansas 2012 teen pregnancy rate (19.7 pregnancies per 1,000 female teens) decreased 5.7 percent from a rate of 20.9 in 2011.
- Slightly over half of the abortions performed in Kansas in 2012 were for non-Kansans. The abortion ratio for Kansas residents in 2012 was 94.3 abortions per 1,000 live births, a decrease of 5.3 percent from a ratio of 99.6 in 2011.
- Cancer remained the leading cause of death in Kansas in 2012, but rates for cancer and heart disease have remained very close since 2009.
- Unintentional injuries were the leading cause of death in 2012 for each of the age groups under 45 years of age. For each of the age groups between 45 and 84, the leading cause of death was cancer; and for ages 85 and above, the leading cause of death was heart disease.

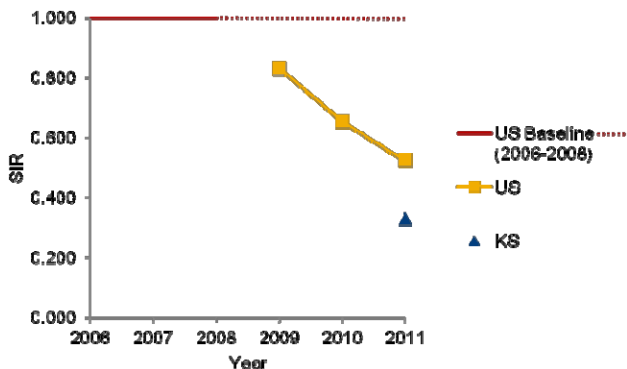
The tables and charts contained in this report represent only a glimpse of the insight that can be gained from the data reported on live births, deaths, stillbirths, marriages, marriage dissolutions (divorce and annulment), and abortions recorded annually. It can be found at <http://www.kdheks.gov/bephi/>.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

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## Kansas Hospitals Doing Well in the Fight Against Healthcare-Associated Infections

On September 26th, the Kansas Department of Health and Environment (KDHE)

Figure 1. CLABSI Standardized Infection Ratio in adult ICUs, US trend and Kansas, 2011.



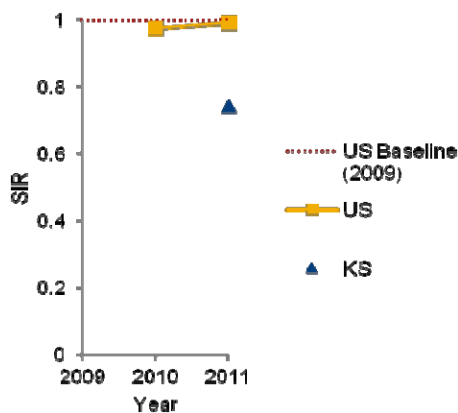
released the first statewide report on healthcare-associated infections (HAIs) in Kansas hospitals. This report shows encouraging data reflecting a concerted effort to reduce the occurrence of this public health problem.

Largely preventable, HAIs are infections that patients acquire during the delivery of clinical care that were not present upon

admission. The report, “Summary of Specific Healthcare-Associated Infections (HAIs) in Kansas, 2011,” which is available online at [www.kdheks.gov/epi/hai.htm](http://www.kdheks.gov/epi/hai.htm), shows reductions in two important HAIs in intensive care unit settings: central line associated bloodstream infections (CLABSI) and catheter-associated urinary tract infections (CAUTI).

Specifically, data suggest that Kansas facilities had 67 percent fewer blood stream infections from central-line devices (Figure 1) and 26 percent fewer urinary tract infections from urinary catheter devices (Figure 2) as compared to 2006-2008 national reference data. Currently, more than 70 facilities in Kansas (representing more than 95 percent of staffed ICU beds) report data on one or more HAIs to KDHE’s HAIs Program.

Figure 2. CAUTI Standardized Infection Ratio in adult ICUs, US trend and Kansas, 2011.



A companion document, specifically designed for patients, was also made available at [www.kdheks.gov/epi/hai.htm](http://www.kdheks.gov/epi/hai.htm). This resource is intended to empower and engage patients and identifies practical steps patients can take to reduce their risk of acquiring CLABSI and CAUTI when hospitalized.

The KDHE HAI Program focuses on supporting HAI surveillance and reporting efforts and promotes adherence to nationally based guidelines and recommendations to reduce the occurrence of HAIs. With assistance from a multidisciplinary Advisory Group, comprised of stakeholders with expertise in

infection prevention, KDHE has chosen specific HAI metrics and has developed a state-wide plan to quantify and subsequently reduce the occurrence of HAIs.

Information about other types of HAIs will be included in future reports.

Robert Geist, MPH  
 Joey Scaletta, MPH  
 Bureau of Epidemiology and Public Health Informatics

## Prematurity Data Brief Published

Each year in the United States, about 500,000 babies are born too soon. Premature or preterm births are those that occur when gestation is less than 37 weeks.

One of the items on Governor Sam Brownback’s “Roadmap for Healthy Kansas Families” is to excel in education [1]. Children born about three months prematurely are 3 - 4 times more likely to struggle in school than children born full term. Compared with children born full term, students born prematurely are more likely to repeat a grade of school (33% versus 18%); receive special education (20% versus 5%); and require extra help with reading, spelling, math, handwriting, and speech/language and require occupational or physical therapy (16% versus 6%) [2].

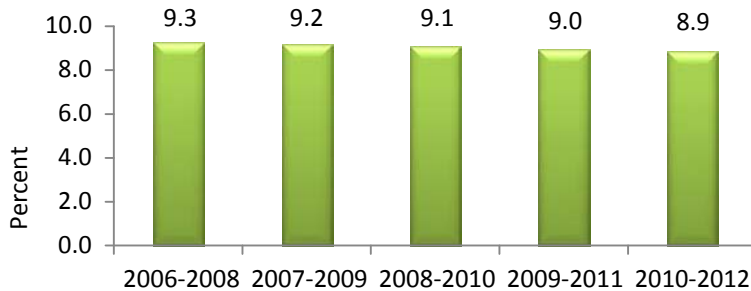
## Kansas Highlights

In 2012, there were 40,304 live births. Twenty-two births did not have gestation reported. Births with gestation less than 37 weeks totaled 3,629. This amounts to 9.0 percent of all babies born or about one out of every 11 births.

In Kansas in 2012, there were 254 infant deaths. This is almost five (4.9) deaths per week. Prematurity is one of the leading factors causing infant mortality.

The population group with the highest percent of preterm births was Black non-Hispanic at 13.0 percent in 2012. The White-non-Hispanic and Hispanic population groups were the lowest at 8.6 percent.

Figure 1. Percent of Resident Births Delivered Preterm, by Rolling Three-year Average, Kansas, 2006-2012



Based on three-year rolling average percentages, the state is trending downward for prematurity (Figure 1).

The 2012 Kansas percent (9.0%) compares favorably to the Healthy People 2020 target of 11.4% [3]. Direct comparison between state

and federal rates is problematic due to different methods for calculation. Prematurity determination is based on obstetric estimate of gestation. While Kansas uses the unaltered estimate, federal rates are based on an imputation method that compares the obstetric estimate to the difference between the date of last menses and the date of birth.

The data brief can be accessed at [http://www.kdheks.gov/phi/data\\_briefs/Prematurity in Kansas 2012.pdf](http://www.kdheks.gov/phi/data_briefs/Prematurity_in_Kansas_2012.pdf)

Carol Moyer, MPH RN, David Oakley, MA  
Bureau of Epidemiology and Public Health Informatics

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## Sudden Unexpected Infant Death Data Brief Issued

In the United States today, around 24,500 infants do not live to celebrate their first birthday [1]. About 3,500 of these infants die of Sudden Unexpected Infant Death (SUID) [1, 2]. Sudden Infant Death Syndrome (SIDS), a major component of SUID, decreased by about 50 percent in the 1990s with the greatest decline occurring after the “Back to Sleep” campaign was initiated in 1994. Since then, the decline in the SIDS rate has been less

dramatic. This slowed decline in SIDS is likely explained by increasing rates of infant deaths classified as “accidental suffocation” and “unknown cause” [3].

**Kansas Highlights**

In 2012, there were 254 Kansas resident infant deaths. Sixteen percent (40) of these deaths were classified as SUID, with a rate of 1.0 per 1,000 live births.

Among the 40 SUID deaths, 60 percent were due to SIDS (24 deaths), 32.5 percent were due to unknown causes (13 deaths) and 7.5 percent were due to accidental suffocation or strangulation in bed (3 deaths).

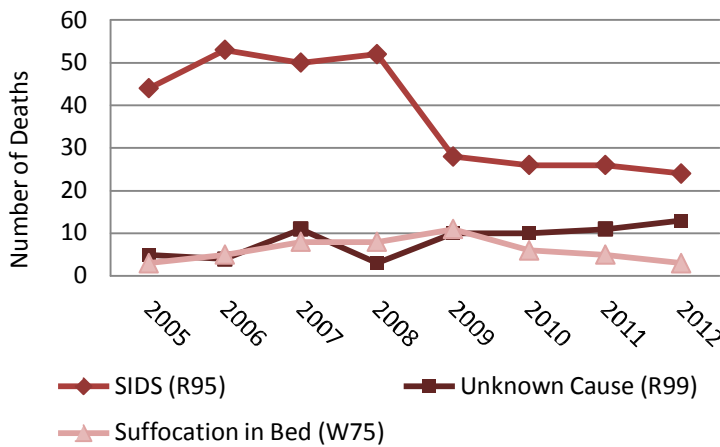
During 2008-2012, Multi race non-Hispanics had the highest SUID rate among the

population groups at 4.2 per 1,000 live births, and White non-Hispanics had the lowest SUID rate at 1.0 per 1,000 live births.

While SUID rates overall fluctuated in the years 2005-2012, analysis showed a statically significant decreasing trend.

The Kansas SUID trend (2005-2012) by component showed a sharp decrease in number of SIDS deaths from 2008 to 2009 followed by a more gradual decrease through 2012, while

Figure 1. SUID Components, Kansas Residents, by Year, 2005-2012



unknown cause showed a slight increase in recent years. The trend in suffocation in bed has remained flat over time with some fluctuation (Figure 1).

The data brief can be found at [http://www.kdheks.gov/phi/data\\_briefs/SUID\\_06.pdf](http://www.kdheks.gov/phi/data_briefs/SUID_06.pdf)

Carol Moyer, MPH, Cathryn Savage, PhD  
Bureau of Epidemiology and Public Health Informatics

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2. Centers for Disease Control and Prevention [internet]. Atlanta (GA): [cited 2013 Aug 20]. Available from: <http://www.cdc.gov/sids/>
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**2012 Adequacy of Prenatal Care Report Published**

Facilitating healthy pregnancies and positive birth outcomes pays dividends to Kansas society in the form of reduced maternal and infant mortality and children capable of learning and growing into productive members of society. It is in this role that the Kansas Department of Health and Environment (KDHE), through the Bureau of Epidemiology and

Public Health Informatics (BEPHI), provides this report in order that progress in the provision of adequate prenatal care can be monitored [1]. Prenatal care is a flexible package of services for pregnant women up to the delivery of an infant. Inadequate prenatal care has been associated with preterm delivery, low birth weight, and small-for-gestation infants [2, 3]. Inadequate prenatal care has also been linked to higher overall net cost per pregnancy for mother and newborn care combined.

Using birth certificate information, the Kansas Department of Health and Environment (KDHE) calculates Adequacy of Prenatal Care Utilization (APNCU) using methods developed by Dr. Milton Kotelchuck. In 2012, prenatal care described as inadequate decreased by 9.3 percent compared to 2011, while adequate care stayed the same. Currently, Kansas' level of adequate care (81.9%) is better than the Healthy People 2020 target of 77.6 percent. In 2012, adequacy of prenatal care utilization was calculated on 39,559 out of 40,304 or 98.1 percent of Kansas resident live births. The number of births that contained the variables necessary to calculate the prenatal care utilization index increased by 4.7 from 2011 (95%).

### **Other findings**

About 83 percent of Mothers of infants with low birth weight received adequate or better care, while 12.2 percent experienced inadequate care.

The proportion of mothers reporting inadequate care was highest among Native Americans (21.5%), Hispanics (20.3%), and Black non-Hispanics (18.3%). These rates are more than twice that of White non-Hispanic women, who experienced inadequate care at a rate of 8.9 percent.

The highest proportion of mothers who received adequate or adequate plus prenatal care had private insurance (90.8%) or Champus/TRICARE (82.5%). The highest proportion of mothers with inadequate prenatal care was self-pay at 25.2 percent. The proportion of mothers with inadequate prenatal care that were self-pay decreased 17.6 percent from 2011 (30.6%) to 2012 (25.2%).

Among first births, the percent of mothers with adequate or adequate plus prenatal care (84.3%) was 3.8 percent greater than among second or higher live births (80.5%).

Among mothers whose prenatal care utilization was classified as inadequate (4,626), the vast majority (94.6%) were due to late initiation of care. Only a minority of women (5.4%) who initiated their care within the first four months of pregnancy received inadequate care.

The full report can be found at: <http://www.kdheks.gov/phi/index.htm>.

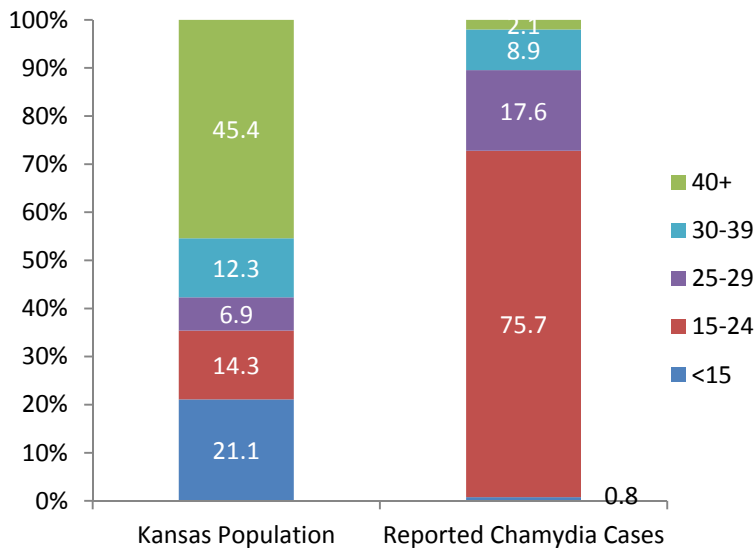
Bureau of Epidemiology and Public Health Informatics

## Chlamydia Screening Rates among Medicaid Females, Kansas, 2012

### Background

Chlamydia trachomatis is the most commonly reported notifiable disease in the United States and is among the most prevalent of all sexually transmitted diseases (STDs).[1] In 2011, over 1.4 million cases (457.6 cases per 100,000) of chlamydia were reported in the United States. During the same year, over 10,600 chlamydia cases were reported to the Kansas Department of Health and Environment (KDHE). The rate of reported chlamydia cases has continued to increase in the US and Kansas over the past decade. In the US and Kansas, rates were highest among young adults (Kansas: 1682.4 per 100,000 in persons aged 15-19 years, 2152.1 per 100,000 in persons aged 20-24 years) and among females (Kansas: 576.6 per 100,000).[2] For Kansas, adolescents and young adults (15 – 24 years of age) represent 14 percent of the population but 76 percent of the reported chlamydia cases.

Figure 1 Kansas population (2011) and number of reported chlamydia cases (2012) by age group.



Chlamydia is known as the “silent” infection because it is asymptomatic in 75 to 80 percent of infected individuals. If left untreated, *C. trachomatis* infections can lead to urethritis, cervicitis, pelvic inflammatory disease (PID), infertility, ectopic pregnancy, and chronic pelvic. Untreated chlamydia can lead to PID in up to 40 percent of women.[3] Approximately 20 percent of women with PID become infertile, 18 percent have chronic pelvic pain, and 9 percent have ectopic pregnancy.[4] In pregnant women, chlamydia infections can result in

adverse pregnancy outcomes: miscarriage, premature rupture of membranes, preterm labor, low birth weight, and infant mortality.

The U.S. Preventative Services Task Force (USPSTF) recommends screening for all sexually active non-pregnant young women age 24 years and younger and older non-pregnant women who are at increased risk.[5] This recommendation to screen young women has been recommended since 2001 and reissued in 2007. The Centers for Disease Control and Prevention (CDC) echoes this and recommends all females 25 years and younger receive an annual chlamydia screening test. Since 2000, annual screening for *C. trachomatis* of sexually active females between 15 and 25 years of age has been included in the Health Plan Employer Data and Information Set (HEDIS).



## Methods

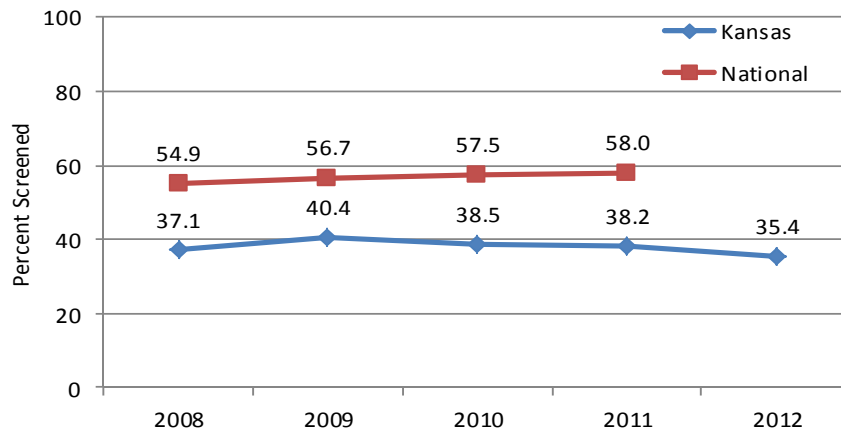
Kansas Medicaid claims data was analyzed for patients aged 16 to 24 years. The study population included females aged 16 to 24 years who were continuously enrolled in Medicaid for 12 months. Patients were identified as sexually active if they had claims or encounter data (CPT, HCPCS, ICD-9CM, UB Revenue or LOINC) associated with the following: contraceptive service, a Pap test or pelvic examination, a pregnancy-related service, or a sexually transmitted disease-related service. The method for determining sexual activity was based on the Healthcare Effectiveness Data and Information Set (HEDIS) performance measures.

Data was analyzed using SAS 9.3

## Results

Each year, over 80% of females 16 to 24 years of age enrolled in Medicaid were defined as sexually active. Of those sexually active females, 40 percent or less receive an annual chlamydia screening each year. The Kansas Medicaid screening rate is approximately twenty percentage points below the national Medicaid screening rate (Figure 2). In 2012, of the approximately 14,000 females 16 to 24 years of age who were enrolled in Medicaid continuously for 12 months defined as sexually active, only 35 percent received an annual chlamydia screen.

Figure 2 National and Kansas Screening Rates for Sexually Active Females 16 -24 years of age enrolled in Medicaid.



Chlamydia screening rates varied significantly by race and age. The odds of Black females to be screened were twice that of the White females (Table 1). Sexually active adolescent females (16 – 20 years) were also less likely to be screened than sexually active adult females (21 – 24 years).

In 2012, only 35% of the eligible females received an annual chlamydia screening test. This resulted in potentially not identifying 625 new cases of *C. trachomatis* infections compared to screening 100 percent of eligible females (Table2). Low screening rates also lead to an increase of cases of Pelvic Inflammatory Disease (PID) and infertility caused by *C. trachomatis*

Table 1 Number and Screening Rates Among Females Enrolled in Kanas Medicaid by Race and Age, 2012.

	Sexually Active Females (N)	Sexually Active Females Screened for Chlamydia (N)	% of Sexually Active Females Screened for Chlamydia	OR for Screening of Sexally Active Females (95% CI)
<b>Race</b>				
White	10,364	3,419	33.0	Reference
Black	2,457	1,213	49.4	2.0 (1.8, 2.2)
Other	995	331	33.3	1.0 (0.8, 1.2)
<b>Age (Years)</b>				
16-20	10,373	3,459	33.3	Reference
21-24	3,443	1,504	43.7	1.5 (1.4, 1.7)

Table 2 Comparisons of Different Chlamydia Screening Rates for 16-24 Years Old Females Enrolled in Kanas Medicaid, 2012.

		Screening Rate			
		100%	90%	60%	35%
<b>Epidemiologic</b>					
	Expected new cases identified	957	868	574	332
	Expected new cases unidentified	0	89	383	625
<b>Screening [Urine nucleic acid amplification test (NAAT)]</b>					
<b>Screening results</b>					
	True positive cases	862	689	517	299
	False negative cases	96	87	57	33
<b>Effect of Therapy</b>					
	<i>C. trachomatis</i> infection treated	689	625	414	239
	<i>C. trachomatis</i> infection cured	662	600	397	229
	<i>C. trachomatis</i> infection not cured	28	25	17	10
	Total cases of <i>C. trachomatis</i> after screening and treatment±	123	201	457	668
<b>Pelvic Inflammatory Disease (PID)</b>					
	Expected cases resulting from <i>C. trachomatitis</i> infection	49	81	183	267
	Difference of cases from not screening at 100%	N/A	32	134	218
<b>Infertility</b>					
	Expected cases resulting from <i>C. trachomatitis</i> infection	10	16	37	53
	Difference of cases from not screening at 100%	N/A	6	27	43

\* Assumptions made in table: Chlamydia prevalence 6%; NAAT sensitivity 90% and specificity 99%; 80% of women diagnosed with chlamydia would be contacted and complete treatment; 96% of women treated with azithromycin will be cured of infection; 40% of cases (after screening and treatment) will develop PID; and 20% of PID cases will result in infertility.

± Total cases of *C. trachomatis* after screening and treatment includes: new unidentified cases, false negatives, and cases not cured.

## Discussion

All sexually active females less than 25 years of age are not administered an annual chlamydia screening as recommended by U.S. Preventive Services Task Force (USPSTF) and Centers for Disease Control and Prevention (CDC). The measures for annual chlamydia screens have been in effect since 2000 but only 40 percent of the eligible Medicaid population received an annual chlamydia screen. The Kansas screening rate is almost 20 percentage points lower than the national Medicaid for the same population.[6] The Kansas screening rate also under performs when compared to the goals developed by Healthy People 2020 (16-20 years old at 74.4% and 21-24 years old at 80%).

Both Whites and adolescents aged 16 to 20 years of age represent a significant proportion of the population eligible for annual chlamydia screenings but are the lowest screened groups comparatively. Targeting these two groups for annual screenings would aid in a significant impact in screening rates.

Screening at a rate comparable to the national average (60%) would result in a significant reduction of disease morbidity including PID and infertility. The low screening rate potentially results in not identifying over 600 new cases of chlamydia each year. Untreated cases of *C. trachomatis* infection can lead to pelvic inflammatory disease (PID) in 10 to 40 percent of women. Cases of PID require medical attention. Women with PID are not only seen in outpatient settings but sometimes require a visit to the emergency department or even hospital admission for several days.

# Kansas Health Statistics Report

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

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Bureau of Epidemiology and Public Health Informatics  
Kansas Dept. of Health & Environment  
1000 SW Jackson, Suite 130  
Topeka, KS 66612-1354