

Selected Health Outcomes and Behavioral Characteristics of Kansas Veterans and Civilians by Age, 2012, 2013 and 2014 Behavioral Risk Factor Surveillance System

Background

There are an estimated 21.8 million veterans in the United States [1]. Many veterans face risks and stresses that most civilians do not experience. The Kansas Department of Health and Environment (KDHE) identifies the need to assess the status of veterans' health in Kansas. The Kansas Behavioral Risk Factor Surveillance System (BRFSS) included the Centers for Disease Control and Prevention (CDC) optional veterans' health module in 2011 and 2012 to assess combat history and mental health status among veterans in addition to annual core question on veteran status. KS BRFSS has collected behavioral health risk data and veterans status among Kansas adults aged 18 years and older since 2003.

Objective

The objective of this analysis is to examine status of selected health outcomes and behavioral characteristics of Kansas veterans and civilians by age.

Methods

The 2012, 2013, and 2014 Kansas BRFSS data were used for this report. Kansas BRFSS is an ongoing, annual, population-based, random, digit-dial survey of non-institutionalized adults aged 18 years and older living in a private residence with landline or cell phone service in Kansas. The question to determine veteran status was, "Have you ever served on active duty in the United States Armed Forces, either in the regular military or in a National Guard or military reserve unit? Active duty does not include training for the Reserves or National Guard, but DOES include activation, for example, for the Persian Gulf War." Additional veteran-specific questions asked if the veteran ever served in a combat or war zone; was diagnosed with depression, anxiety or post-traumatic stress disorder; had traumatic brain injury; and received psychological or psychiatric treatment in the past year.

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Respondents who declined to answer, or who answered "don't know/not sure" were excluded from the analyses. Veterans were categorized by age: 18-64 years and 65 years and older. These categories were used because health is largely influenced by health care and access, and older veterans like other older Kansans have access to Medicare.

Additionally, older veterans faced much different circumstances in combat compared with younger veterans as military technology and tactics have changed. The data showed that younger veterans (aged 18-64 years) are more diverse than older veterans (65 years and older). Younger veterans are less likely to be non-Hispanic white and more likely to be female as compared with older veterans. Data from the 2013 and 2014 Kansas BRFSS were analyzed to assess selected health outcomes and behavioral characteristics by veteran status. Data from 2012 Kansas BRFSS were analyzed to assess additional veteran-specific questions. Prevalence estimates and 95% confidence intervals (CI) were calculated. Data were weighted using the new ranking method [2]. SAS 9.3 software was used for analysis.

Results

Health Outcomes and behavioral characteristics of Kansas Veterans aged 18-64 years

A higher percentage of adults with 14 or more days of poor physical health within a month, living with a disability, no fruit consumed per day, current smoker, overweight/obese, arthritis, high cholesterol, coronary heart disease, heart attack, hypertension, stroke, diabetes were seen among Kansas Veterans aged 18-64 years as compared with civilians aged 18-64 years (Table 1). The significant differences are not seen between veterans and civilians aged 18 - 64 years in the prevalence of self-reported fair/poor health, 14 or more days of poor mental health within a month, ever diagnosed with depression, serious psychological disorder, leisure time physical activity, no vegetables consumed per day, binge drinker, skin cancer and COPD. The prevalence of not meeting the recommended level of aerobic and strengthening activity guidelines, always using a seatbelt, current asthma, having health care coverage, could not see a doctor because of cost in past 12 months, ever having a pneumonia shot and having a flu shot in past 12 months were lower among veterans aged 18-64 years.

Health Outcomes and behavioral characteristics of Kansas Veterans aged 65 years and older

Many of the health disparities observed between veterans and civilians aged 18 - 64 years were not apparent among senior veterans and civilians aged 65 years and older. Senior veterans had higher prevalence of no fruit consumed per day, overweight/obese, binge drinker, skin cancer, coronary heart disease, heart attack, stroke and diabetes as compared with senior civilians. Lower prevalence was seen in older veterans for prevalence of current asthma (Table 2).

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Table 1. Selected Health Outcomes and Behavioral Characteristics among Adults Aged 18 - 64 Years, by Veteran Status, Kansas 2014 BRFSS

Selected Health Outcomes and Behavioral Characteristics	Veterans aged 18-64 years		Civilians aged 18-64 years	
	Weighted %	95% Confidence Interval	Weighted %	95% Confidence Interval
Overall Health				
Fair/poor health	16.8%	13.9%-	13.1%	12.2%-
14 or more days mental health not good	12.5%	9.8%-	10.0%	9.2%-
14 or more days physical health not good	13.3%	10.6%-	8.4%	7.7%-9.0%
Living with a disability	29.4%	25.7%-	17.4%	16.5%-
Mental Health				
Ever diagnosed with depression	20.8%	17.5%-	19.7%	18.7%-
Serious Psychological Distress*	4.9%	2.7%-7.1%	3.7%	3.1%-4.2%
Health Behaviors				
No leisure time physical activity	21.8%	18.4%-	21.4%	20.4%-
Did Not Meet Both Aerobic and	77.4%	74.6%-	81.8%	80.9%-
No fruit consumed per day*	47.9%	44.7%-	43.5%	42.5%-
No vegetables consumed per day*	23.6%	20.7%-	23.2%	22.3%-
Current smoker	26.2%	22.4%-	19.6%	18.6%-
Overweight/Obese	79.3%	76.0%-	64.1%	62.8%-
Binge drinker	18.2%	14.9%-	19.0%	17.9%-
Always uses seat belt	82.1%	78.8%-	77.6%	76.4%-
Health Conditions (Ever diagnosed)				
Arthritis	28.4%	24.8%-	17.8%	16.9%-
Current Asthma	5.5%	3.7%-7.2%	9.2%	8.4%-9.9%
Skin Cancer	4.5%	3.0%-6.1%	3.2%	2.8%-3.6%
High Cholesterol*	38.1%	34.8%-	32.2%	31.2%-
Chronic obstructive pulmonary disorder	7.1%	5.0%-9.1%	4.8%	4.3%-5.3%
Coronary Heart Disease	5.7%	4.0%-7.4%	2.0%	1.7%-2.3%
Heart Attack	5.7%	4.0%-7.5%	2.1%	1.8%-2.5%
Hypertension*	33.8%	30.9%-	23.0%	22.3%-
Stroke	3.7%	2.3%-5.2%	1.9%	1.5%-2.2%
Diabetes	11.0%	8.6%-	7.1%	6.5%-7.7%
Health Care				
Has health care coverage	90.6%	88.2%-	81.7%	80.6%-
Could not see doctor because of	9.5%	7.1%-	15.0%	14.0%-
Ever had a pneumonia shot	35.0%	30.8%-	20.3%	19.3%-
Had a flu shot in past 12 months	46.8%	42.7%-	33.0%	31.8%-

Source: 2014 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

*Source: 2013 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

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Table 2. Selected Health Outcomes and Behavioral Characteristics among Adults Aged 65 Years and Older, by Veteran Status, Kansas 2014 BRFSS

Selected Health Outcomes and Behavioral Characteristics	Veterans aged 65 years and older		Civilians aged 65 years and older	
	Weighted %	95% Confidence Interval	Weighted %	95% Confidence Interval
Overall Health				
Fair/poor health	23.6%	20.6%-26.6%	23.7%	22.0%-25.4%
14 or more days mental health not good within a month	4.3%	2.9%-5.6%	5.4%	4.5%-6.3%
14 or more days physical health not good within a month	14.7%	12.2%-17.3%	15.6%	14.1%-17.0%
Living with a disability	40.7%	37.3%-44.1%	36.3%	34.4%-38.1%
Mental Health				
Ever diagnosed with depression	12.9%	10.7%-15.1%	14.3%	12.9%-15.6%
Serious Psychological Distress*	1.7%	0.6%-2.7%	1.6%	1.0%-2.2%
Health Behaviors				
No leisure time physical activity	30.6%	27.4%-33.8%	34.1%	32.2%-35.9%
Did Not Meet Both Aerobic and Strengthening	83.2%	81.1%-85.3%	85.8%	84.7%-86.8%
No fruit consumed per day*	38.7%	36.0%-41.5%	30.8%	29.4%-32.2%
No vegetables consumed per day*	24.2%	21.7%-26.6%	20.5%	19.2%-21.8%
Current smoker	11.1%	8.9%-13.3%	9.5%	8.3%-10.7%
Overweight/Obese	74.6%	71.5%-77.6%	66.4%	64.6%-68.3%
Binge drinker	5.6%	4.1%-7.2%	2.4%	1.8%-3.0%
Always uses seat belt	81.8%	79.1%-84.5%	85.2%	83.8%-86.6%
Health Conditions (Ever diagnosed)				
Arthritis	49.3%	45.8%-52.7%	54.5%	52.7%-56.4%
Current Asthma	5.7%	4.1%-7.4%	9.0%	7.9%-10.1%
Skin Cancer	23.4%	20.5%-26.3%	16.2%	14.8%-17.6%
High Cholesterol*	55.1%	52.3%-57.9%	54.8%	53.3%-56.3%
Chronic obstructive pulmonary disorder	14.5%	12.1%-17.0%	13.0%	11.7%-14.3%
Coronary Heart Disease	18.3%	15.5%-21.0%	10.3%	9.1%-11.5%
Heart Attack	18.6%	15.9%-21.3%	9.0%	7.9%-10.2%
Hypertension*	63.1%	60.5%-65.7%	62.6%	61.2%-64.0%
Stroke	9.1%	7.1%-11.1%	7.7%	6.6%-8.8%
Diabetes	26.0%	22.9%-29.0%	20.7%	19.0%-22.3%
Health Care				
Has health care coverage	97.8%	96.7%-98.9%	98.2%	97.6%-98.8%
Could not see doctor because of	2.9%	1.7%-4.2%	4.6%	3.7%-5.5%
Ever had a pneumonia shot	71.4%	68.2%-74.6%	71.9%	70.1%-73.7%
Had a flu shot in past 12 months	60.7%	57.3%-64.1%	60.9%	59.0%-62.8%

Source: 2014 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

*Source: 2013 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

Kansas veteran-specific characteristics by age groups

There was no statistical difference between ever serving in a combat or war zone among veterans aged 18 - 64 years (42.4%) and senior veterans (35.2%). More veterans aged 18 - 64 years were diagnosed with depression, anxiety or post-traumatic stress disorder (PTSD) (18.8%) as compared with senior veterans (7.0%). Traumatic brain injuries (TBI) can have severe and permanent effects on the health of soldiers. Veterans did not show any differences of ever being diagnosed with TBI across age groups. Speaking with a trained professional can help veterans coming back from service deal with possible issues and readjustment. The percentage of veterans who have received psychological or psychiatric treatment in the past year was about three times higher among veterans aged 18 - 64 years (10.6%) as compared with veterans aged 65 years and older (3.6%) (Table 3).

Table 3. Veteran-Specific Characteristics, by Age Group, Kansas 2012 BRFSS

Veteran-Specific Questions	Veterans aged 18-64 years		Veterans aged 65 years and older	
	Weighted %	95% Confidence Interval	Weighted %	95% Confidence Interval
Ever served in a combat or war zone	42.4%	35.7%-49.1%	35.2%	29.7%-40.7%
Ever diagnosed with depression, anxiety, or post-traumatic stress disorder	18.8%	13.7%-23.8%	7.0%	3.2%-10.7%
Ever diagnosed with a traumatic brain injury	3.5%	1.3%-5.7%	2.8%	0.9%-4.8%
Received psychological or psychiatric treatment in past year	10.6%	6.7%-14.4%	3.6%	1.7%-5.6%

Source: 2012 Kansas Behavioral Risk Factor Surveillance System, Bureau of Health Promotion, KDHE.

Conclusion

The health status of veterans was different than civilians. Veterans aged 18-64 years had a higher prevalence of having health care coverage but also had a higher prevalence of many health issues than civilians aged 18- 64 years. The health differences between senior veterans (65 years and older) and senior civilians were much less pronounced. More veterans aged 18 - 64 years were diagnosed with depression, anxiety or post-traumatic stress disorder (PTSD) as compared with senior veterans. The percentage of veterans who have received psychological or psychiatric treatment in the past year was about three times higher among younger veterans as compared with veterans aged 65 years and older. Findings indicate the need for implementation of public health strategies to address issues related to veterans’ health.

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All-Terrain Vehicle Deaths and Hospitalizations, Kansas 2009-2013

Introduction

In response to increasing popularity of all-terrain vehicles (ATV), the Consumer Product Safety Commission (CPSC) began monitoring ATV deaths and injuries in the 1980s. A 1987 lawsuit filed by the CPSC against five major distributors of ATVs led to certain restrictions on distributors, effective for 10 years, including restrictions on distribution of three-wheel ATVs and the sale of adult-size ATVs for use by children under age 16. These restrictions became mandatory with the publication of the Consumer Product Safety Improvement Act of 2008, including the American National Standard for Four Wheel All-Terrain Vehicles Equipment Configuration, and Performance Requirements. The 2013 Annual Report of ATV-Related Deaths and Injuries, published by the CPSC, reports that, nationally, there has been a statistically significant decreasing linear trend in ATV-related injury estimates from 2007 to 2013 [1].

An article in the November 2009 edition of the *Kansas Health Statistics Report* looked for trends in deaths and in hospitalizations resulting from ATV crashes by analyzing data from death records maintained by the Kansas Department of Health and Environment's Office of Vital Statistics (OVS), and from hospital discharge files provided to the Bureau of Epidemiology and Public Health Informatics by the Kansas Hospital Association (KHA) for 2005-2008. The article noted that a reported national increase in the number of fatalities and emergency room admissions due to ATV injuries was not duplicated in Kansas data. "Kansas Hospital Discharge data show that Kansas hospitalizations due to ATV crashes for all ages changed little from 2005 to 2007", and "Kansas mortality due to ATV crashes from 2005 to 2008 fluctuated from year to year, but showed no clear trend" [2]. The current paper continues the analyses for years 2009-2013.

Methods

Sources of data for the current analyses were the same as those used previously: death certificate information from OVS and hospital discharge data from KHA. Records for analysis of deaths related to ATVs from 2009 to 2013 were chosen from OVS death files where the underlying cause of death was ICD-10 code V86, "Occupant of special all-terrain or other motor vehicle designed primarily for off-road use, injured in transport accident". Excluded were those records where the literal description of the cause of death included

the words “golf cart”, “custom motor vehicle”, “lawn mower”, “three wheel scooter”, “go-cart”, “modified vehicle”, “dune buggy”, or “motorcycle”.

Hospital discharge records for analysis were those with any ICD9-CM diagnosis code of E821.0 or E821.1, “Nontraffic accident involving other off-road motor vehicle”, specifically excluding motor-driven snow vehicle or motorcycle. Differences between rates were considered to be statistically significant if the 95 percent confidence intervals did not overlap.

Results

As in 2005-2008, the number of Kansas resident deaths per year resulting from ATV

Table 1. Resident ATV Deaths by Selected Characteristics Kansas, 2009 - 2013

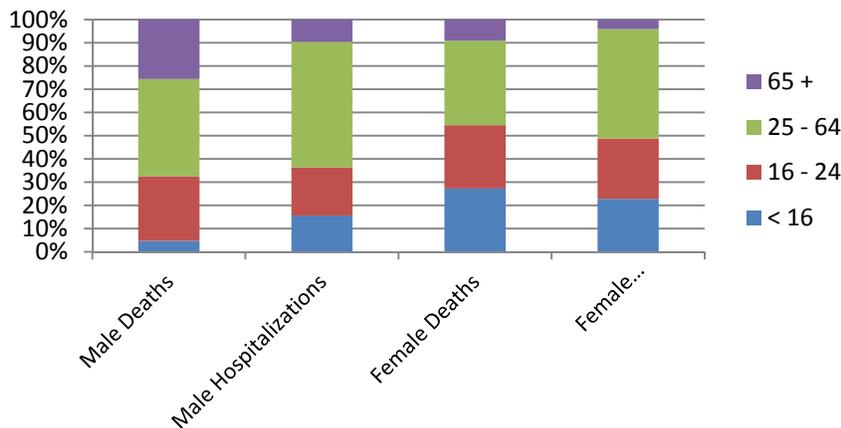
Sex	Number	Percent
Male	43	79.6
Female	11	20.4
Age		
< 16	5	9.3
16 - 24	15	27.8
25 - 64	22	40.7
65 +	12	22.2
Number of Days from Injury to Death		
0	36	75.0
1	6	12.5
2	2	4.2
5	2	4.2
13	1	2.1
41	1	2.1
Unspecified	6	N/A
Total	54	100.0

accidents remained relatively unchanged from 2009 through 2013, averaging approximately 10 per year (total 54). Most of the fatalities were to drivers of the ATV (82.2%), and most of the decedents were male (79.6%) (Table 1). Most of the deaths occurred Friday through Sunday (88.4%), and most occurred April through October (79.0%). Only five individuals under age 16 died as the result of an ATV crash from 2009 to 2013, compared to 12 deaths in that age group from 2005 to 2008. Of those five, three were females.

Of the 54 deaths due to ATV accidents in 2009 to 2013, the literal description on the death certificate included the words “roll

over”, “overturned”, “flipped”, etc. for 29.6 percent of the records. Most deaths occurred within one day of the accident date (87.5%).

Figure 1. Percent Distribution for ATV Deaths and Hospitalizations by Sex by Age Group, Kansas Residents 2009-2013



The rate of hospital discharges per 100,000 population for ATV accidents was significantly lower in 2013 than in 2009, with most of the decline occurring in the under-16 age group. For 2009-2013 deaths and hospitalizations, a greater percentage of females were under age 16 than were males; and over

half (54.5%) of female ATV-related deaths and 48.8 percent of female ATV-related hospitalizations were for individuals under the age of 25 (Figure 1).

Table 2. Resident ATV Hospitalizations by Selected Characteristics Kansas, 2009 - 2013

Sex	Number	Percent
Male	480	79.6
Female	123	20.4
Age		
< 16	103	17.1
16 - 24	132	21.9
25 - 64	317	52.6
65 +	51	8.5
Disposition		
Home/Self Care	479	79.4
Another Short Term Hospital	11	1.8
Skilled Nursing Facility	4	0.7
Home Health Care	41	6.8
Expired	12	2.0
To an Inpatient Rehabilitation Facility	43	7.1
Other	13	2.2
Total	603	

The average length of stay for individuals who were hospitalized but did not die of their injuries was 4.2 days. Approximately four out of five (79.4%) hospitalized individuals were discharged to home for self-care (Table 2).

Discussion

Despite efforts to reduce deaths and injuries from ATV accidents, the number of ATV-related deaths of Kansas residents per year remained relatively unchanged from 2009 through 2013. However, it is possible that even though numbers of deaths per year have been steady, the rate of deaths per ATV in use could be decreasing. A report by the Government Accountability Office (GAO) in 2010 found that while death and injury estimates rose for the

nation during the previous decade, the rate of injury per vehicles in use had actually decreased due to the increase in ATV use, which had nearly tripled [3].

The rate of hospitalizations per 100,000 population dropped from 2009 to 2013, and it is a positive development that numbers of hospitalizations among children under age 16 decreased. Safety education programs aimed at young riders and their parents, as well as efforts by manufacturers and distributors to prevent sales of adult-sized ATV for use by children, may be showing some results.

Rollovers continue to be a significant portion of ATV-related accidents resulting in death. ATVs are “getting bigger and faster, ranging up to 700 cc and greater in engine size, weighing 600 or more pounds, with speeds exceeding 70 miles per hour” [4]. Riders must be aware of the risks of operating these machines and follow safety precautions [5]:

- Always wear a DOT-compliant helmet, goggles, long sleeves, long pants, over-the-ankle boots, and gloves.
- Never ride on paved roads. . . ATVs are designed to be operated off-highway.
- Never ride under the influence of alcohol or drugs.
- Never carry a passenger on a single-rider ATV, and no more than one passenger on an ATV specifically designed for two people.
- Ride an ATV that’s right for your age.
- Supervise riders younger than 16; ATVs are not toys.
- Ride only on designated trails and at a safe speed.
- Take a hands-on ATV safety course.

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Kansas Influenza Surveillance, 2014-2015

Introduction

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

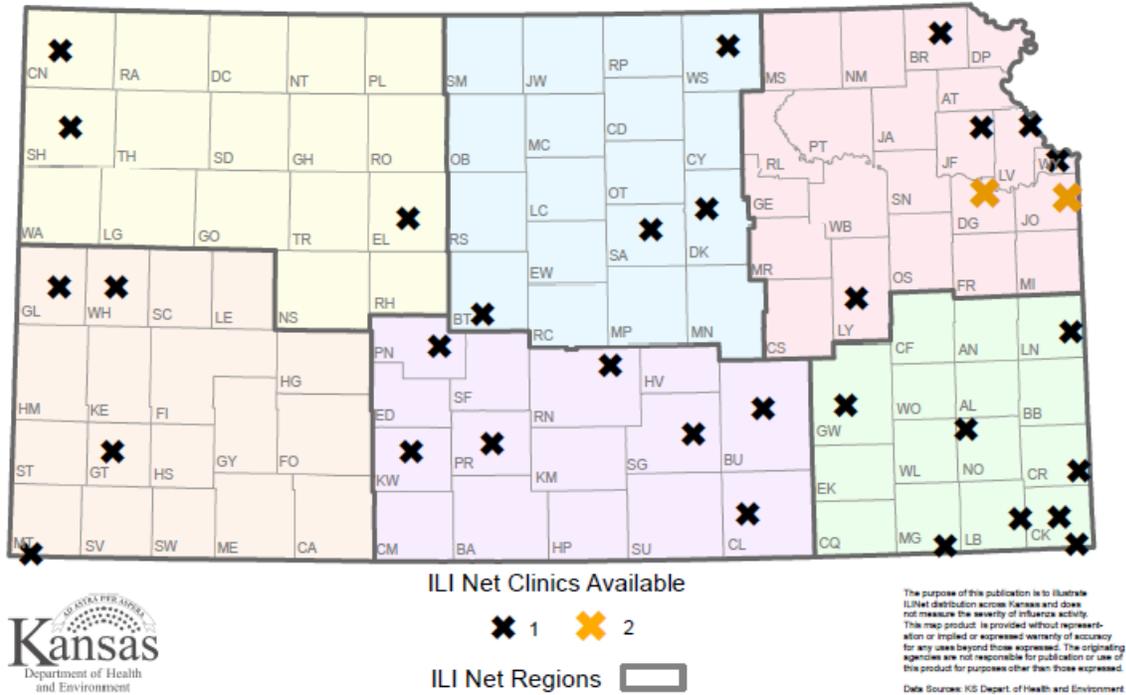
Methods

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

The Bureau of Epidemiology and Public Health Informatics (BEPHI) at the Kansas Department of Health and Environment (KDHE) recruited health care providers throughout Kansas to participate in ILINet. Each week, ILINet site personnel determined the total number of patients seen with ILI during the previous week by age group — preschool (0-4 years), school age through college (5-24 years), adults (25-49 years and 50-64 years), and older adults (>64 years). In addition, the total number of patients seen during the previous week for any illness was recorded. This data were submitted to the CDC via the internet or fax; sites are asked to report the previous week's data by 11:00 AM each Tuesday.

When the surveillance period began during the week ending October 4, 2014, 37 health care providers were enrolled in ILINet. Three sites dropped out during the week ending January 10, 2014 after failing to submit any data. As a result, the 2014-2015 surveillance data were collected from 35 sites throughout the state: 20 family practice clinics, nine hospital emergency departments, four university student health centers, and two pediatric clinics (Figure 1).

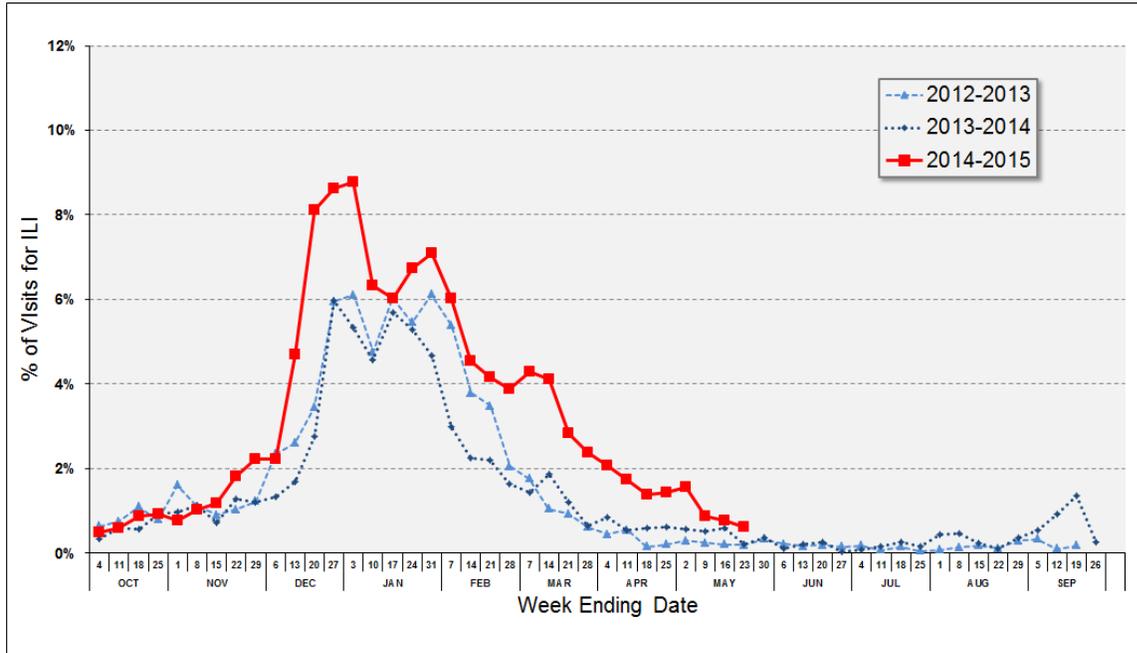
Figure 1. Sites enrolled in the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Kansas, September 28, 2014 – May 23, 2015 (n=35)



Results

During the influenza surveillance period, starting September 28, 2014 (week 40) and ending May 23, 2015 (week 20), sites observed a total of 218,686 patients—7,306 (3.3%) sought care for ILI. The rate of ILI rose steadily from November 2014 through December 2014. The ILI rate peaked at 8.8% during the week ending January 3, 2015. The rate of ILI dropped below 2% during the week ending April 11, 2015 and remained low through the end of the surveillance period (Figure 2).

Figure 2. Percentage of visits for influenza-like illness (ILI) reported by ILINet sites, Kansas, October 2014 – May 2015 and previous two surveillance periods*



*ILINet sites may vary in number and type (student health, family practice, etc.) each season. Data from the previous two surveillance years are plotted according to week number corresponding to the 2014-2015 week ending date; for example, week 40 ended October 5, 2014, week 40 of 2013 ended October 6, 2012, and week 40 of 2012 ended October 7, 2011.

Laboratory Surveillance

The Kansas Health and Environmental Laboratories (KHEL) provided confirmatory testing for ILINet site patients with ILI, as well as for hospitalized patients throughout the state. Real-Time Polymerase Chain Reaction (RT-PCR) tests were used to analyze nasal and nasopharyngeal swabs for the presence of influenza virus. Laboratory data were sent weekly to CDC by KHEL. In addition, KHEL forwarded a subset of its specimens to CDC for subtyping, antigenic characterization, and antiviral resistance testing.

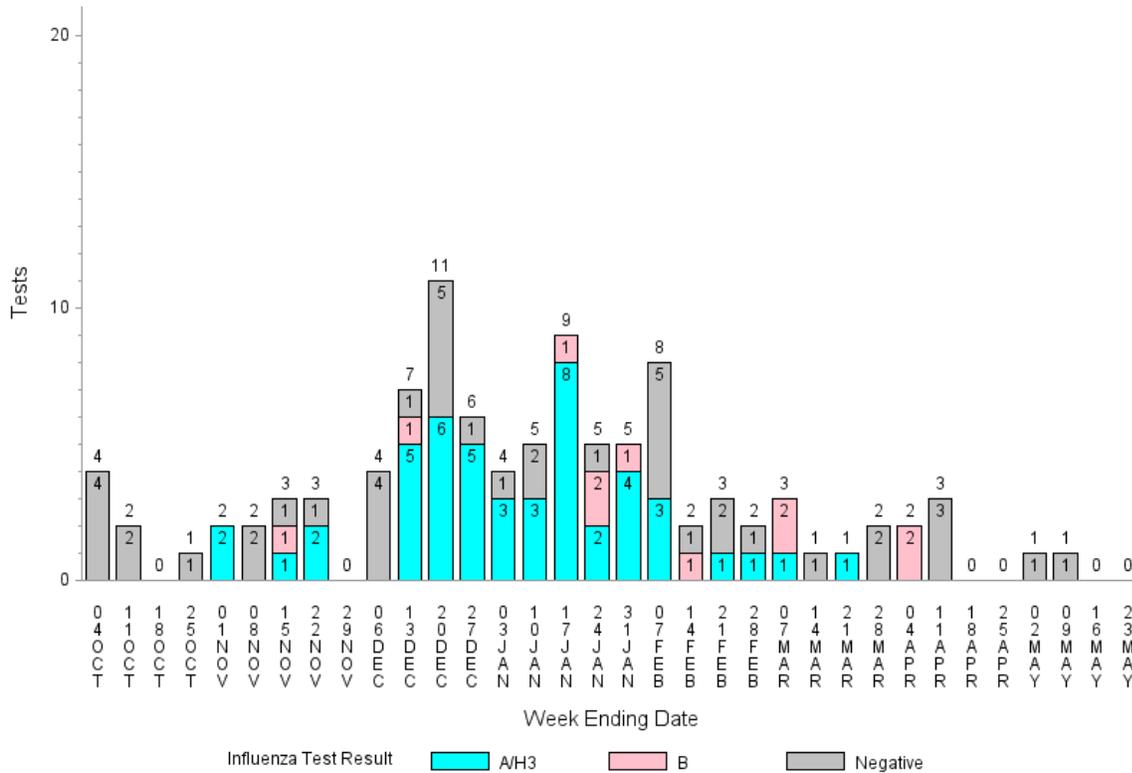
From September 30, 2014, when the first respiratory specimen for influenza testing was received, until May 23, 2015, when the 2014-2015 surveillance period ended, KHEL tested 102 specimens for influenza. ILINet sites submitted 46 (91%) specimens; the remainder

was submitted by hospitals or tested for outbreak investigations. Influenza was detected in 59 (58%) of the specimens. Both influenza type A and B viruses were detected. One influenza A subtype, A/H3, and influenza B were seen. The influenza A/H3 subtype was most frequently detected, representing of 81% of all positive specimens (Table 1, Figure 3).

Table 1: Laboratory-confirmed influenza viruses tested at Kansas Health and Environmental Laboratories by subtype, Kansas, September 30, 2014 – May 23, 2015

Influenza subtype	Number	Percent of Total
A/H3	48	81%
B	11	19%

Figure 3: Influenza specimens tested at Kansas Health and Environmental Laboratories by week ending date, September 30, 2014 – May 23, 2015 (n=102)



KHEL sent 30 positive influenza specimens to CDC for antigenic characterization. Antigenic characterization testing performed on influenza isolates submitted by all states to the CDC showed that 100% of the A/H1 isolates, 19% of the A/H3, 98% of both B lineages matched their corresponding components in the 2014-2015 seasonal influenza vaccine.

Respiratory Viral Panel Testing

A subset of specimens which test negative for influenza by RT-PCR at the Kansas Health and Environmental Laboratories (KHEL) were tested using the Luminex PCR instrument. The Luminex assay probed for the following 12 viral targets per specimen: influenza A, influenza A subtype H1, influenza A subtype H3, influenza B, respiratory syncytial virus subtype A, respiratory syncytial virus subtype B, parainfluenza 1, parainfluenza 2, parainfluenza 3, human metapneumovirus, rhinovirus, and adenovirus. The goal of Luminex testing was to better understand which respiratory viruses were circulating in Kansas during influenza season.

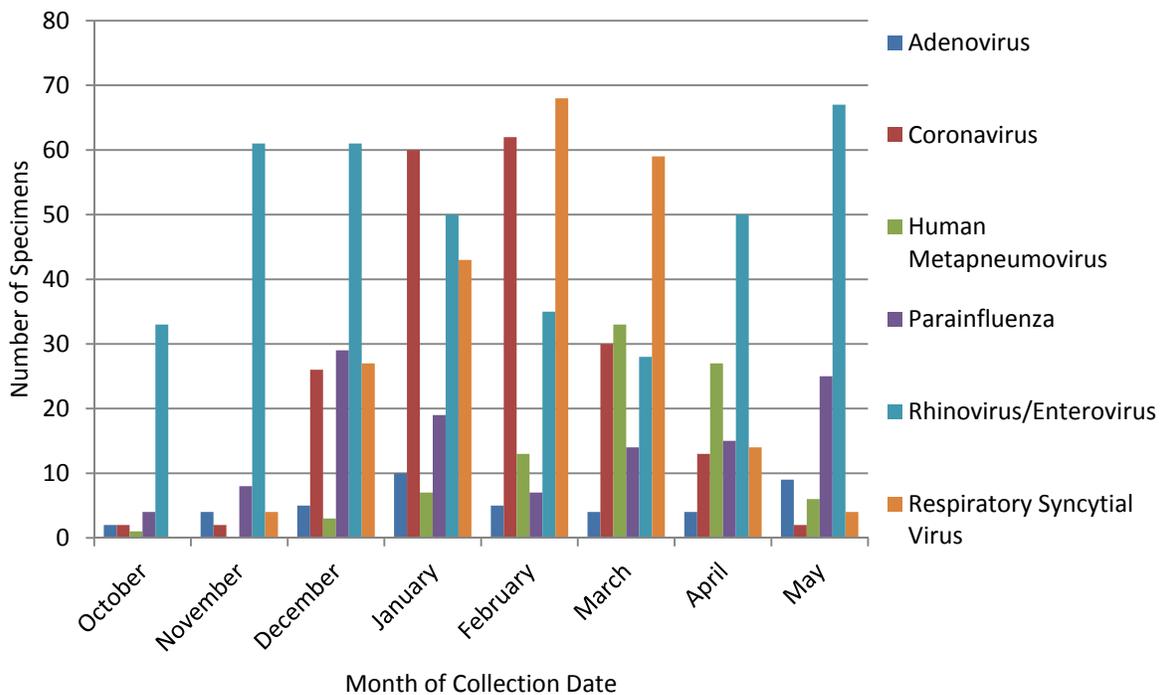
For the 2014-15 season, Via Christi Laboratories in Sedgwick County shared its RVP data with KDHE. Via Christi Laboratories' RVP can detect Parainfluenza 4 and four different coronaviruses in addition to the 12 targets in the RVP panel used by KHEL; RVP results were sent to KDHE monthly and represented the majority of respiratory virus surveillance

in the south central region of Kansas. The resources available at KHEL focused on the remaining five regions of the state.

A total of 48 specimens were tested on the KHEL Luminex assay, 30 of which were negative for all viral targets. Rhinovirus/enterovirus was the most common virus found (n=9). The other viruses identified using Luminex included adenovirus (n=2), human metapneumovirus (n=2) and parainfluenza 3 (n=1). The KHEL RVP specimens showed no time-specific disease trends over this surveillance period.

Via Christi saw many respiratory virus trends during the flu season (Figure 5). The most common virus found was rhinovirus/enterovirus, which declined throughout the season. They also reported high numbers of respiratory syncytial virus and coronaviruses during peak flu season. Other viruses detected were adenovirus, human metapneumovirus, and parainfluenza.

Figure 5: Positive Respiratory Viral Panel Results, Via Christi Laboratories, October 2014 – May 2015

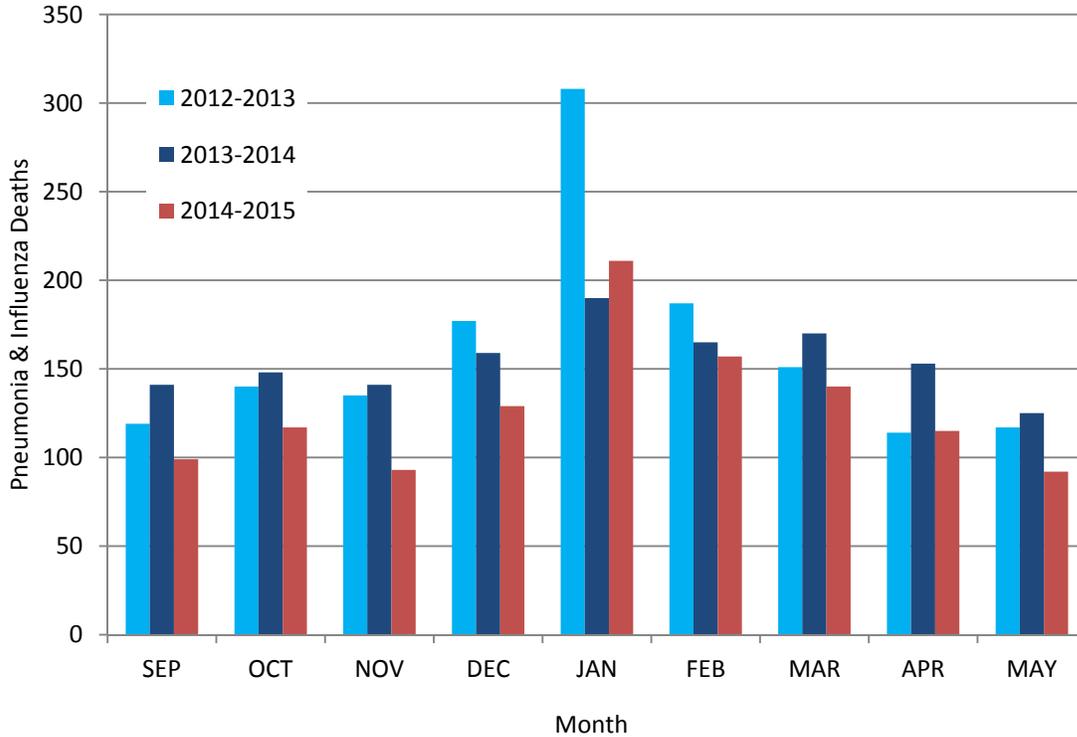


Pneumonia and Influenza Mortality

BEPHI monitored influenza-related mortality. Death certificate data were collected to determine the number of deaths caused by pneumonia or influenza (P&I). Mortality was 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, P&I mortality data includes deaths that occurred from September through May. During the 2014-2015 period, the largest number of P&I deaths (n=211) were recorded in the month of January (Figure 6).

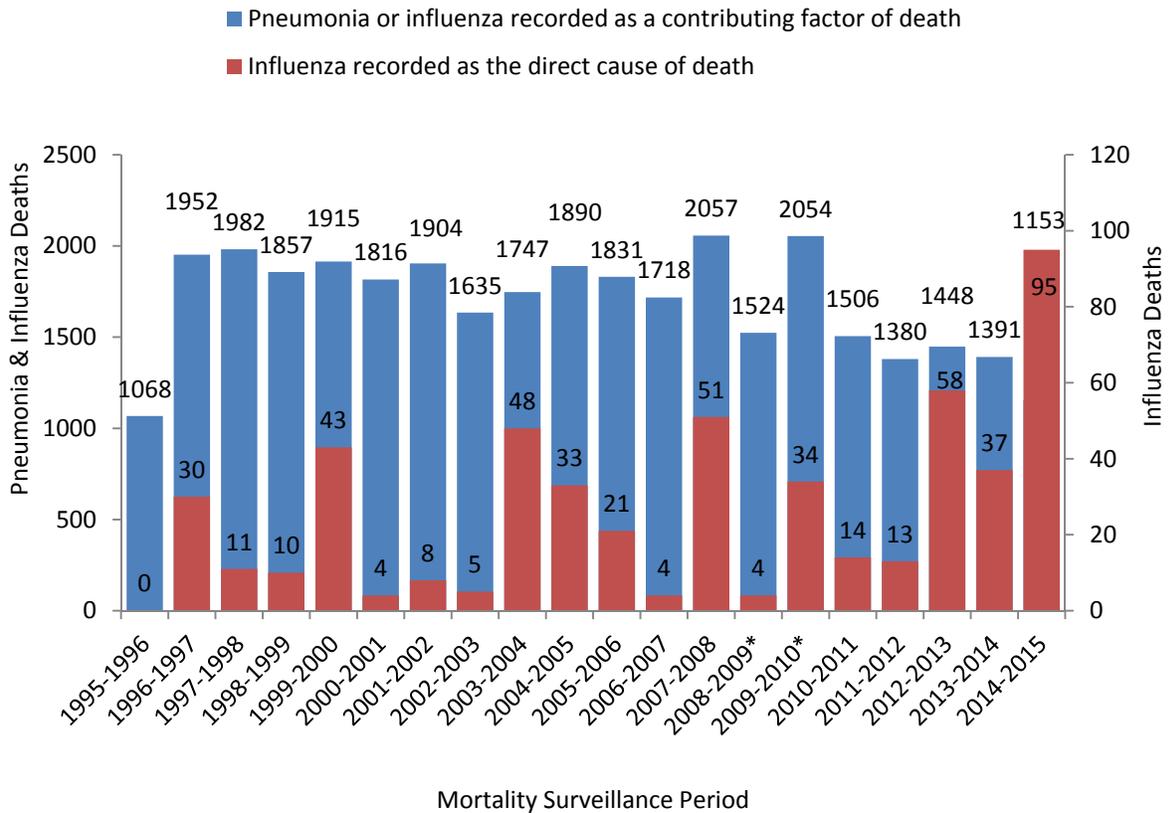
Figure 6: Deaths attributed to pneumonia or influenza by month, Kansas, September 2012-May 2015*



* 2014-2015 data is provisional and subject to change.

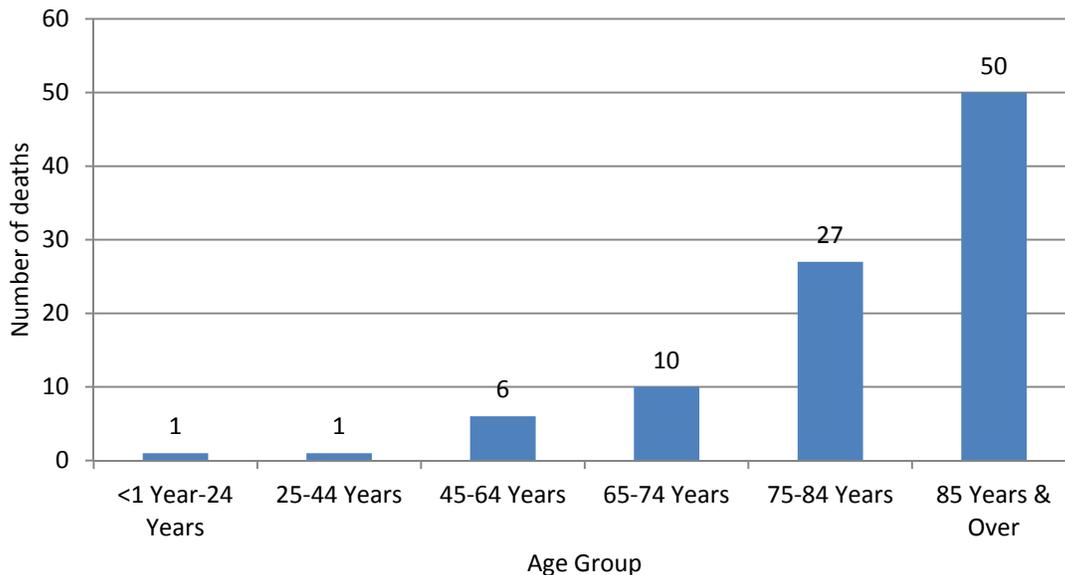
A total of 1,153 pneumonia and influenza deaths occurred during the 2014-2015 surveillance period. The observed mortality was below the 20-year median of 1,781 (Figure 7). During the 2014-2015 surveillance period, 95 deaths (8%) were directly attributed to influenza—this number was well above the 20-year median (18 deaths) observed since the 1995-1996 surveillance period, and above the 20-year mean (26 deaths). The majority of these deaths occurred in individuals aged 85 years or older with 50 deaths (53%) (Figure 8).

Figure 7: Pneumonia and influenza mortality by surveillance period, Kansas, 1995-2015 *



*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 2014-2015 data are provisional and subject to change.

Figure 8: Influenza recorded as direct cause of death by age group, Kansas, September 2014 – May 2015



Influenza-Associated Pediatric Mortality

Since 2004, CDC has requested information on influenza-associated pediatric deaths; the condition was added to the list of reportable diseases in Kansas in 2006. For surveillance purposes, pediatric deaths were considered influenza-related if there was no period of complete recovery between the clinically compatible illness and death, and if the diagnosis was confirmed to be influenza by an appropriate laboratory or rapid diagnostic test.

During the 2014-2015 surveillance period, two confirmed influenza-associated pediatric deaths were reported in Kansas.

Discussion

Typically, ILI in Kansas has peaked in December, January, or February. The ILI rate peaked in Kansas at 8.8% during the week ending January 2, 2015. The peak rate was higher than what was observed during the previous two surveillance periods; ILI peaked at 6.0% during 2013-14, and 6.1% during 2011-12. Two influenza viruses were detected in Kansas: A/H3, and B. The predominant strain in Kansas and the U.S. was A/H3.

Influenza vaccination during the 2014-15 season offered reduced protections against the predominant circulating A/H3 virus, compared with previous seasons when most circulating and vaccine strain viruses were well-matched. This may have contributed to the higher peak of ILI seen in Kansas during 2014-15.

During the 2014-15 influenza season, 95 deaths were directly attributed to influenza. This was the highest number of influenza deaths in the last 20 years in Kansas. This reflected the national trend—the CDC determined that P&I mortality during 2014-15 was comparable to previous severe flu seasons. Of the Kansas deaths, 53% were among those 85 years and older.

Daniel Neises, MPH

Bureau of Epidemiology and Public Health Informatics

Announcement

The Annual Summary of Vital Statistics, 2014, is now available for use in program evaluations and community health assessments. The report contains more than 120 tables, figures and maps reporting statistics on birth, death, fetal death, abortion, marriage and marriage dissolution.

The state's infant mortality rate has decreased from 6.4 deaths per 1,000 live births in 2013 to 6.3 deaths per 1,000 live births in 2014. The rate for Black non-Hispanic mothers was 10.3 deaths per 1,000 live births, a 32.7 percent decrease from the 2013 rate of 15.3.

Teen pregnancy numbers decreased by 6.5 percent, from 3,335 in 2013 to 3,118 in 2014. The pregnancy rate for mothers under 20 years of age was 16 per 1,000 females. This is the lowest pregnancy rate for this age-group in the past 20 years, down from a peak of 34.5 in 1995.

A new table and figure have been included to report on pneumonia and influenza (P&I) deaths. P&I resulted in an age-adjusted mortality rate of 18.0 deaths per 1,000 population,

down from 20.0 in 2013.

The number of births to Kansas residents was 39,193, an increase of 1.0 percent from 2012. The state's birth rate increased to 13.5 per 1,000 population from 13.4 in 2012.

The Annual Summary is available online at <http://www.kdheks.gov/hci/annsumm.html>. Available at that URL is a set of 25 spreadsheets that contain county level statistics for many of the indicators.

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, 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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