2009-2010 Influenza Epidemiology and Surveillance Weekly Status Report for Kansas

Week Ending February 13, 2010

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Executive Summary

D. Charles Hunt, MPH, State Epidemiologist and Director
Bureau of Surveillance and Epidemiology
Kansas Department of Health and Environment

Overview

Enhanced influenza surveillance continues to remain a critical component of our response to the 2009 H1N1 influenza A virus pandemic. Although we are in the time of year that is traditionally the peak of seasonal influenza, overall activity throughout the state remains low. The number of specimens submitted to the Kansas Health and Environmental Laboratories for influenza testing remains low; however the proportion of specimens testing positive for influenza A 2009 H1N1 increased to 13.2% for the week ending February 13th. The total number of hospital admissions due to pneumonia or influenza increased 22% from the previous week. The proportion of hospitalizations for patients less than five years of age remains elevated (27.4%) for the fourth consecutive week. The increase in hospitalizations for this age group may be due to other causes of pneumonia. However, we will continue to monitor all influenza surveillance data to assess any changes or trends.

Outpatient Visits for Influenza-like Illness (ILINet)

Forty-three (61%) of the 70 ILINet sites in Kansas reported data for the week ending February 13th. The statewide percentage of patients seeking care for ILI at these clinics was 1.7%. For the past eleven weeks, the statewide percentage has been less than 2%. Reported ILI activity was highest in the northwest and southwest regions of the state (5.4% and 2.4%, respectively). Many sites did not submit ILI data by the reporting deadline; the regional and statewide percentages may rise or fall after these sites submit data.

Hospital Admissions for Pneumonia or Influenza (EMSystems)

For the week ending February 13th, 78 (59%) of 132 hospitals reported 380 patients admitted for pneumonia or influenza. One-hundred and four (27.4%) of these admissions were among children less than 5 years of age. This is the fourth consecutive week in which greater than 20% of hospitalizations were among children less than 5 years of age. This increase may be due to hospitalizations for other seasonal causes of pneumonia, such as Respiratory Syncytial Virus (RSV), which primarily affects young children. The statewide rate of hospital admissions per 100 bed-days increased from 0.61 to 0.78. All the regions, except the Northeast, reported an increase in the rate of hospital admissions per 100 bed-days.

Mortality Due to Pneumonia or Influenza

Thirty-two (6%) of the 530 deaths reported to KDHE during the week ending February 13th were due to pneumonia or influenza. This is a decrease from the week ending February 6th where forty-six of the 496 (9.3%) of all deaths in Kansas were attributed to pneumonia or influenza.

Self-reported Influenza-like Illness

New data from the Behavioral Risk Factor Surveillance System (BRFSS) is available on a biweekly basis. No new data was analyzed for this week's surveillance report.

Executive Summary (continued)

School Absenteeism
For the school week ending February 12th, 78 of 105 (74%) counties reported school absenteeism data. The statewide percentages for elementary and middle schools remained the same at 8% and 9% respectively. High schools reporting 10% or greater absenteeism increased from 11% to 15%. Many counties did not submit their data by the reporting deadline; statewide and regional percentages may rise or fall after these non-reporting counties submit data. Additionally, these numbers represent total absenteeism from all causes, not only absenteeism due to influenza.

Laboratory-based Surveillance
During the week ending February 13th, 53 specimens were tested at KDHE Laboratories (KHEL). Of these, seven (13.2%) were positive for influenza A (2009 H1N1). No other influenza A or B viruses were detected.

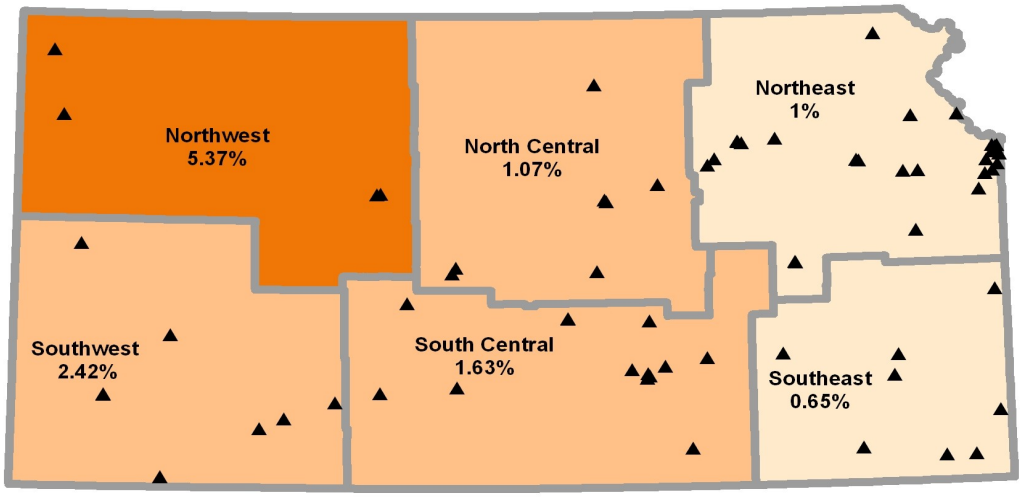
Since October 4th, a total of 2,375 specimens have been submitted to KHEL for testing. Of these, 909 (38%) have tested positive for influenza A (2009 H1N1).

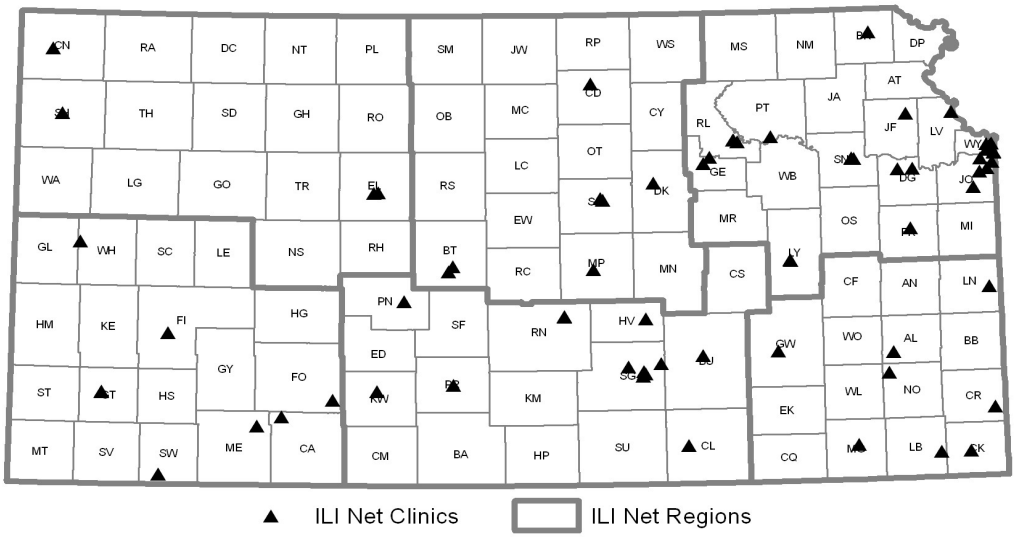
Population Vaccinated Against 2009 H1N1 Influenza A Virus
As of February 13th, 558,941 doses of 2009 H1N1 vaccine were reported to have been administered to Kansans, which comprises 20% of the state's population. The charts show the cumulative number of individuals vaccinated at the end of each week by region as well as the cumulative percentage of each region's population that has been immunized. The proportion of persons vaccinated ranged from 15% in the southeast region to 24% in the northwest region.

It is important to note that numbers of people vaccinated are reported by the county in which they received the vaccination; therefore, cumulative numbers and rates may be skewed slightly, as individuals are divided into regions based on the site of vaccination. These charts do not account for individuals who were vaccinated in a region other than the region in which they reside. Vaccine administration data may change each week because of data submitted after the reporting deadline or because of corrections made to previously submitted data.

Outpatient Influenza-like Illness (Surveillance Conducted via ILINet) Week ending February 13, 2010

Percentage of Visits for Influenza-like Illness (ILI) Reported by ILINet Sites, by Region February 7, 2010 - February 13, 2010





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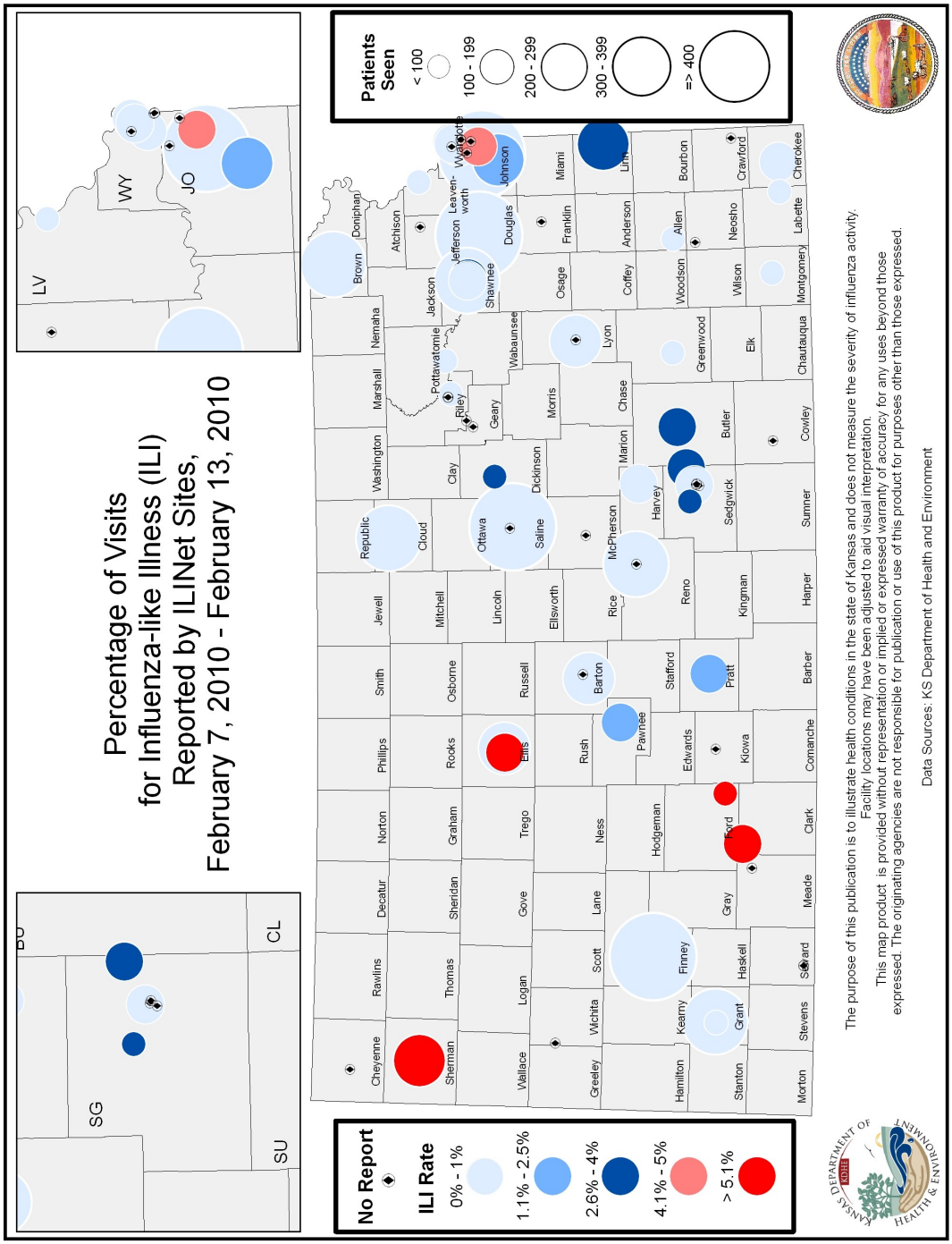
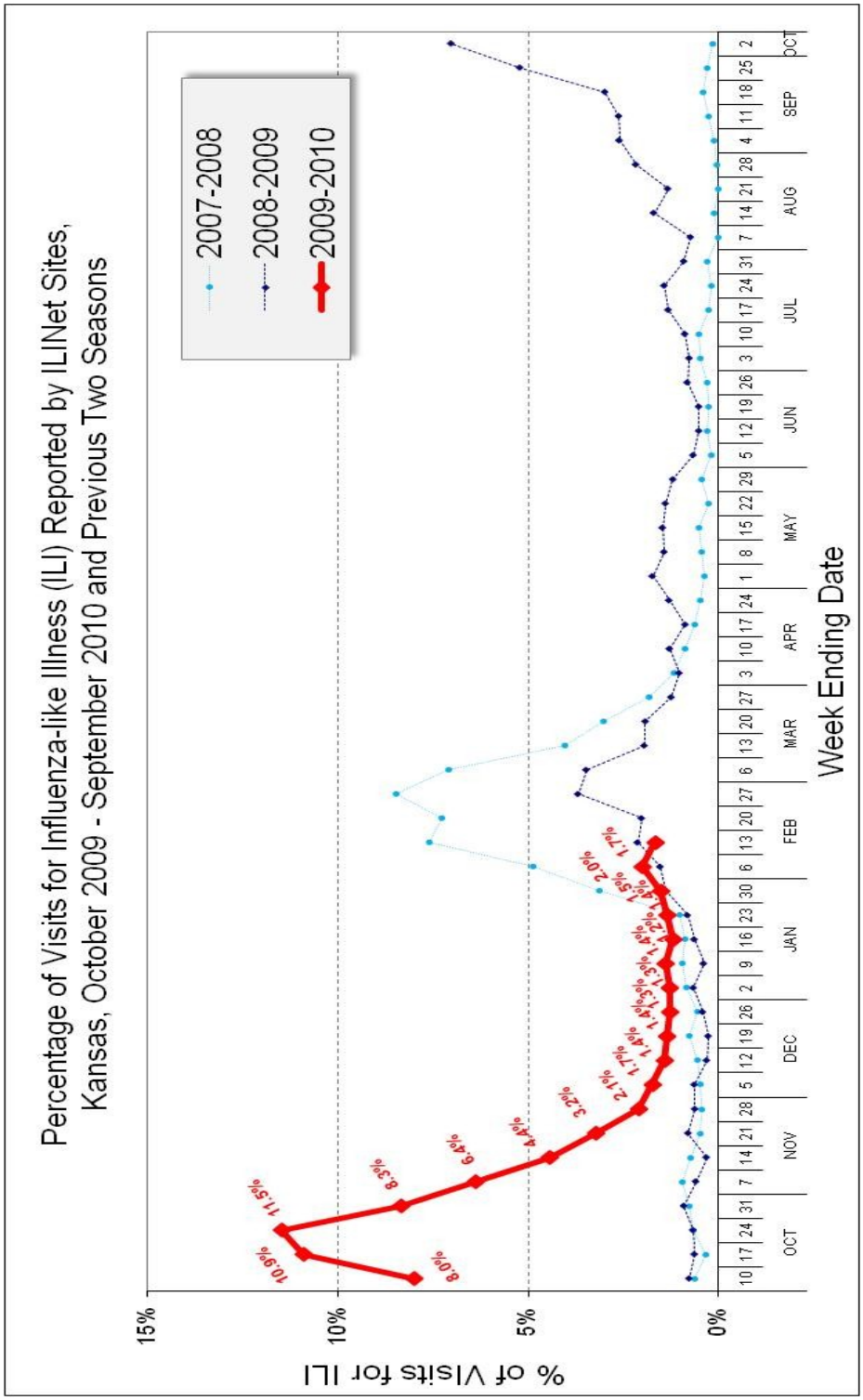
Data Sources: KS Department of Health and Environment

Outpatient Influenza-like Illness
(Surveillance Conducted via ILINet)
Week ending February 13, 2010

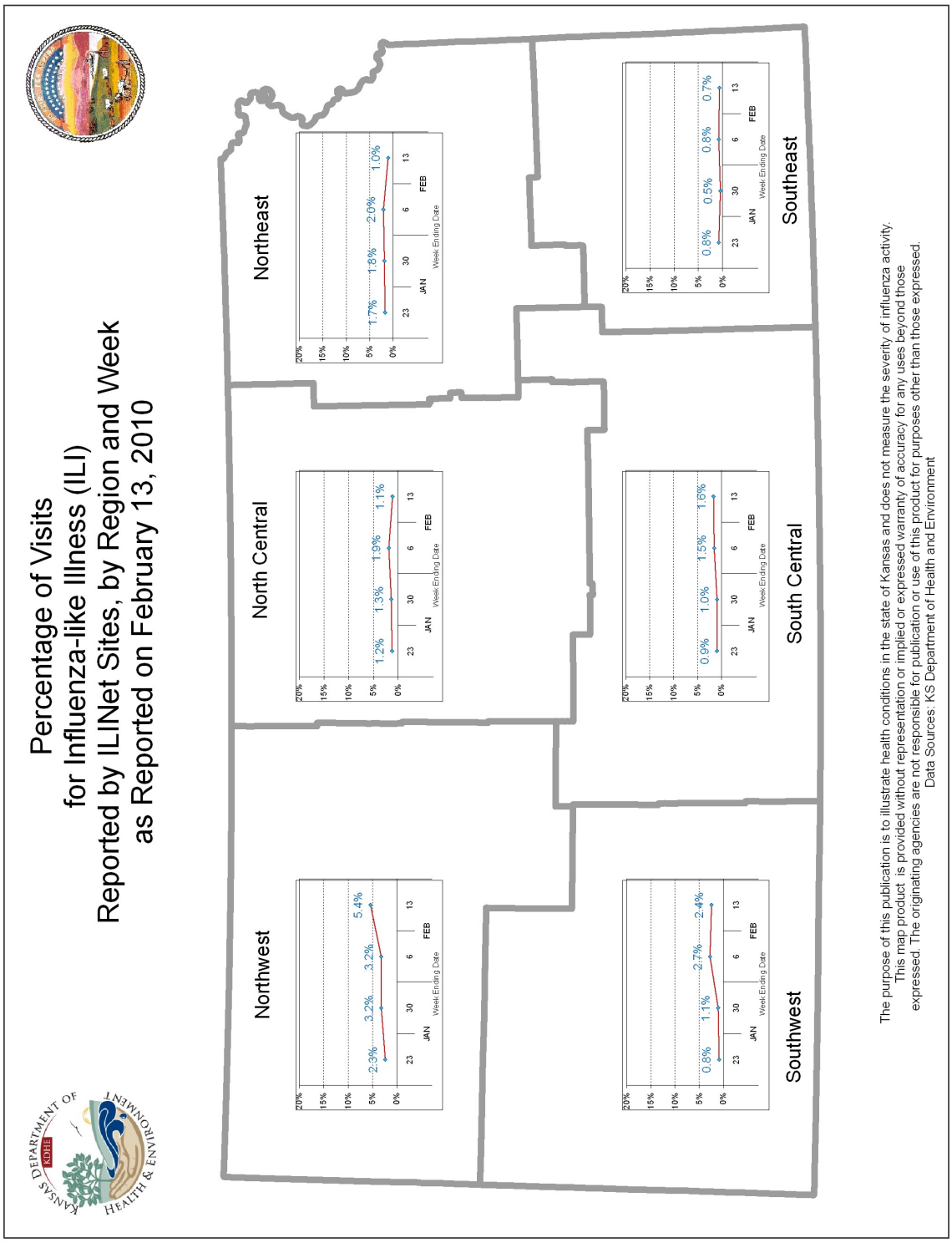


Outpatient Influenza-like Illness
(Surveillance Conducted via ILINet)
Week ending February 13, 2010

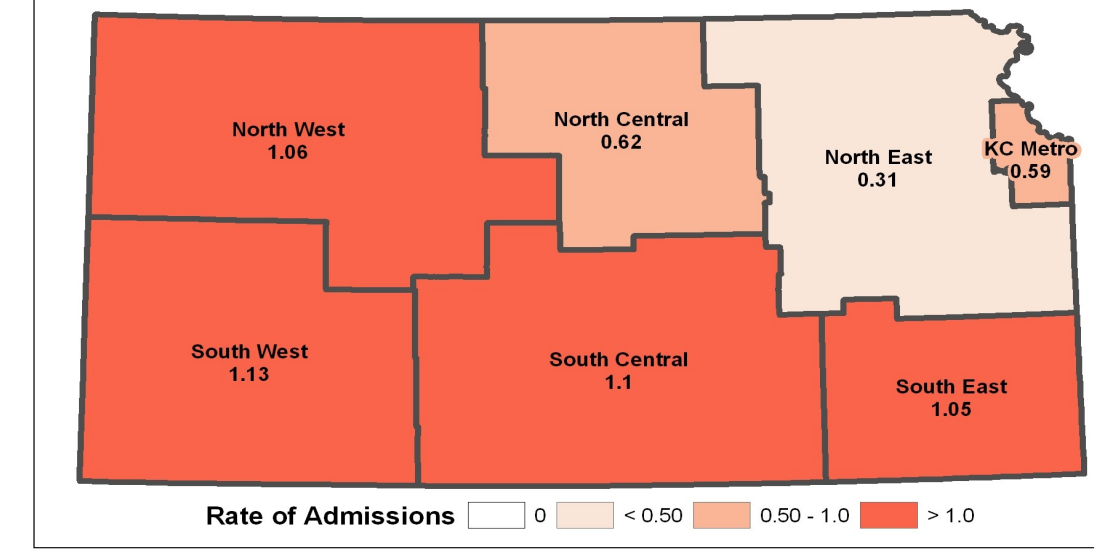


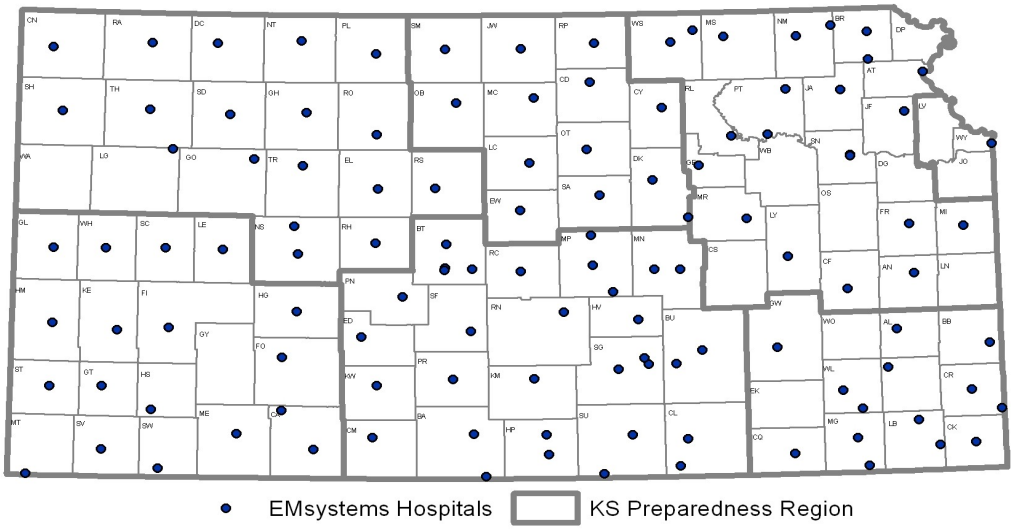
The X-axis represents the week ending dates for the 2009-2010 surveillance year. Data from the previous two surveillance years are plotted according to week number corresponding to the 2009-2010 week ending date. Week 40 of 2009 ended October 10, 2009. Week 40 of 2008 ended October 4, 2008, and week 40 of 2007 ended October 6, 2007, and so on. Week 53 was unique to the 2008-2009 season; data for that week has been excluded from the chart. ILINet sites vary in location, number, and type (student health, family practice, etc.) each season as new sites are enrolled and former sites are deactivated.

Outpatient Influenza-like Illness
(Surveillance Conducted via ILINet)
Week ending February 13, 2010



Hospital Admissions
(Surveillance Conducted via EMSystems)
Week ending February 13, 2010





*Rate is per staffed bed days. Please see the Technical Notes Section for explanation on data calculation.

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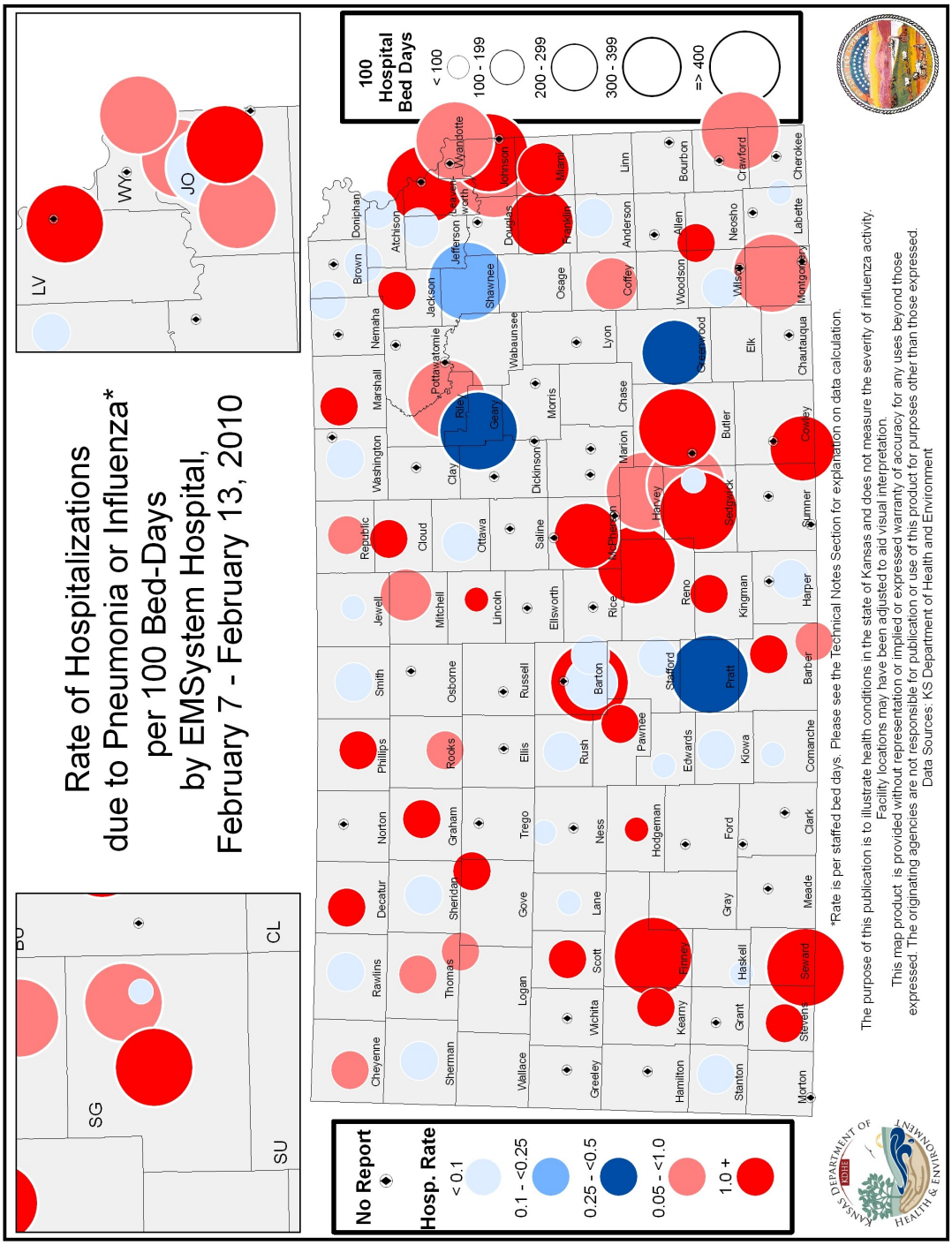
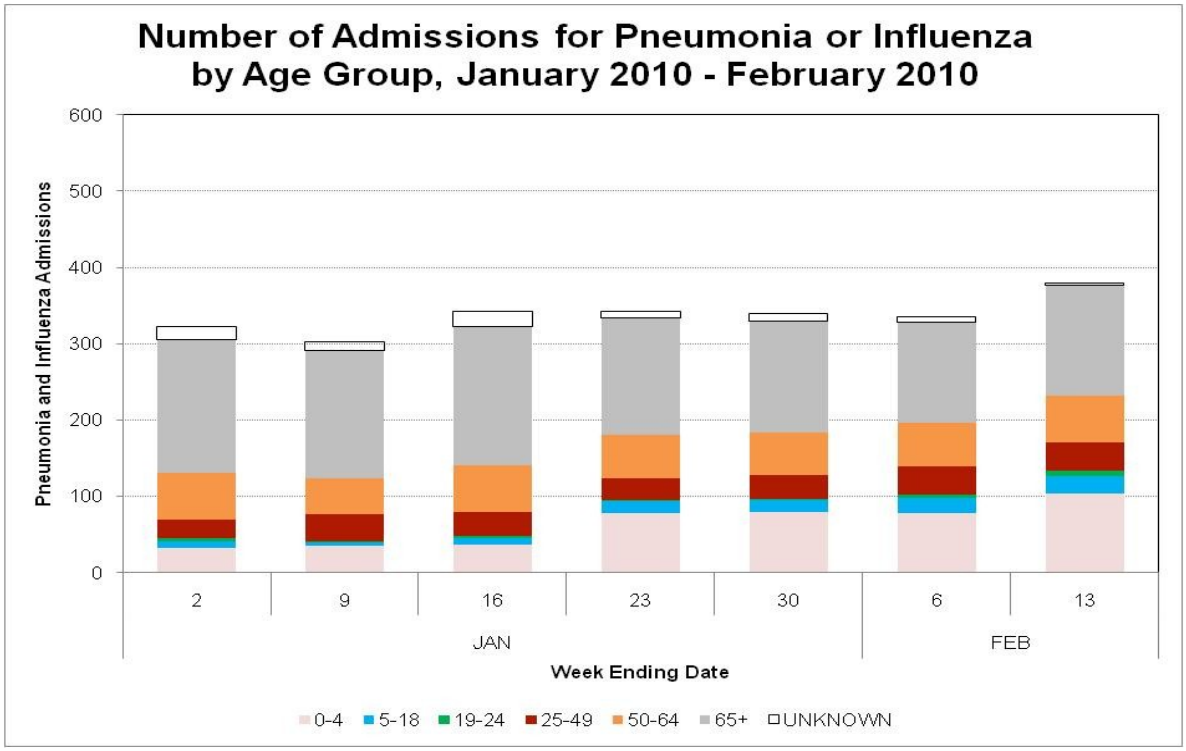
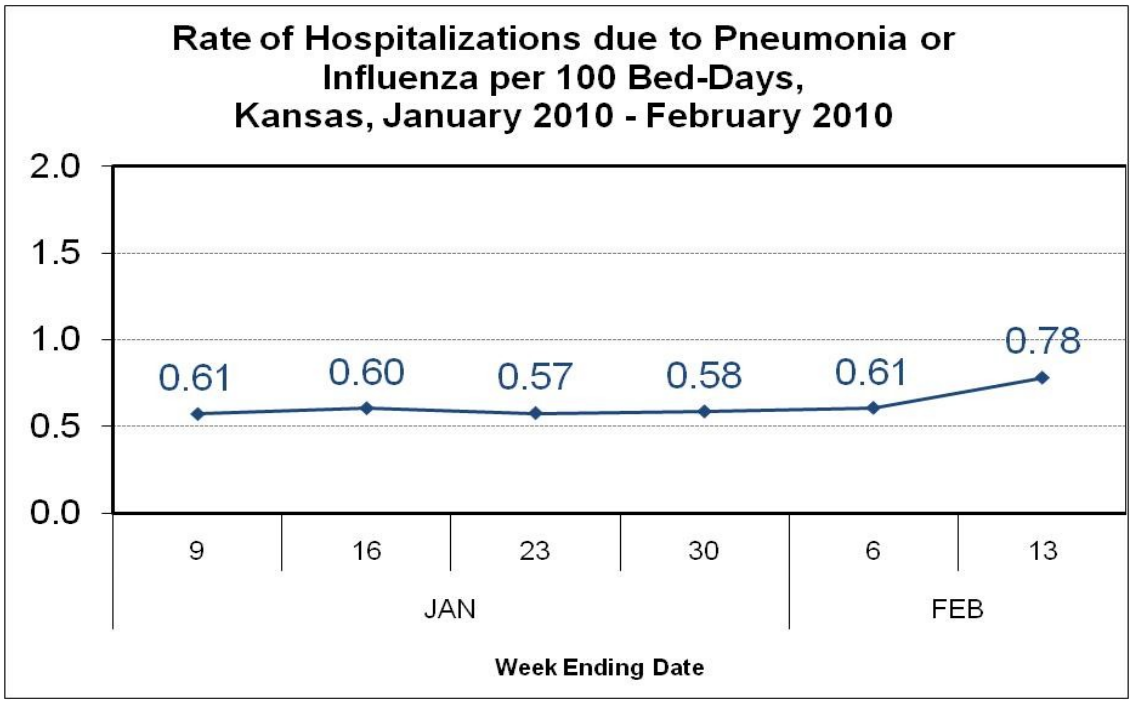
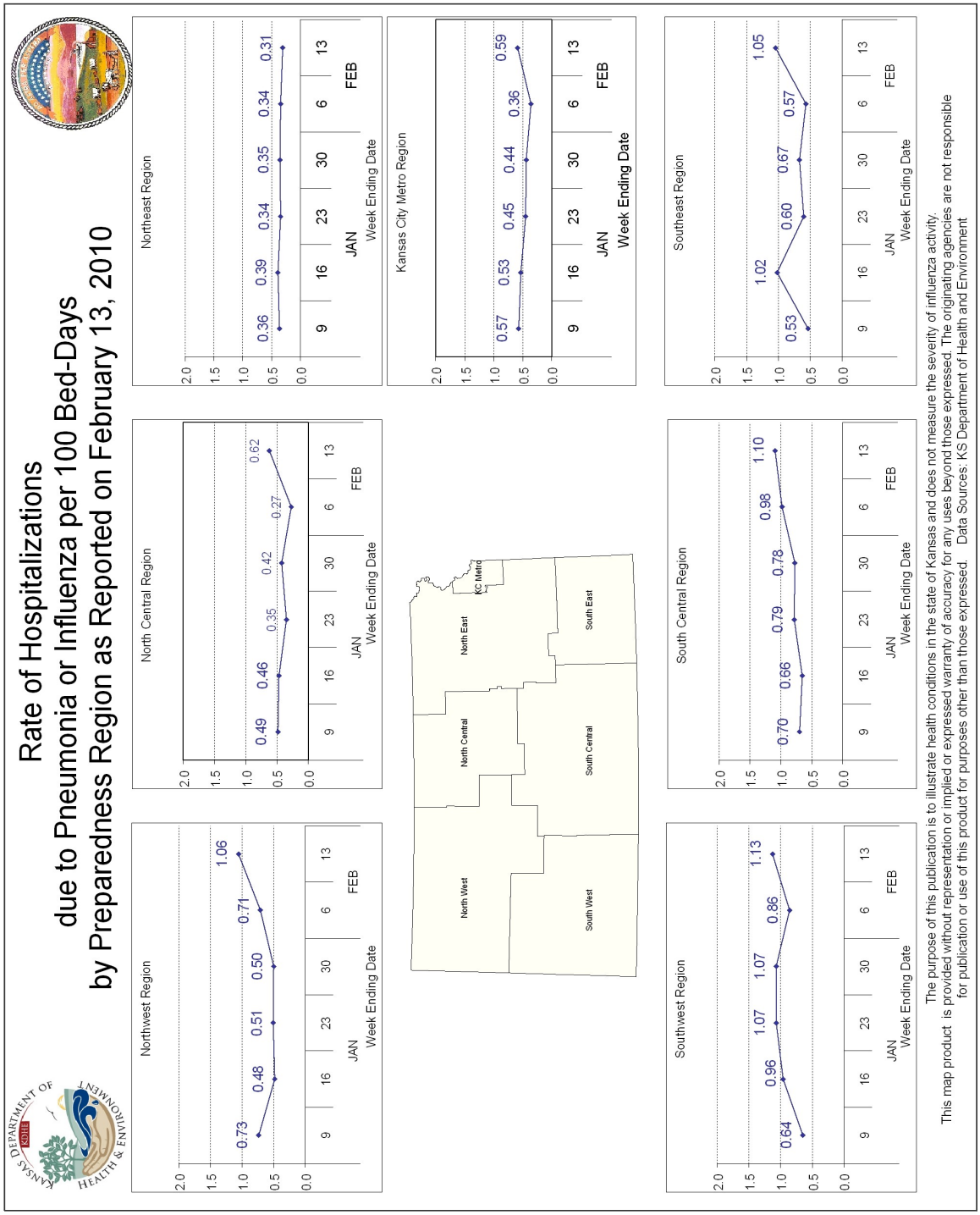


Hospital Admissions
(Surveillance Conducted via EMSystems)
Week ending February 13, 2010

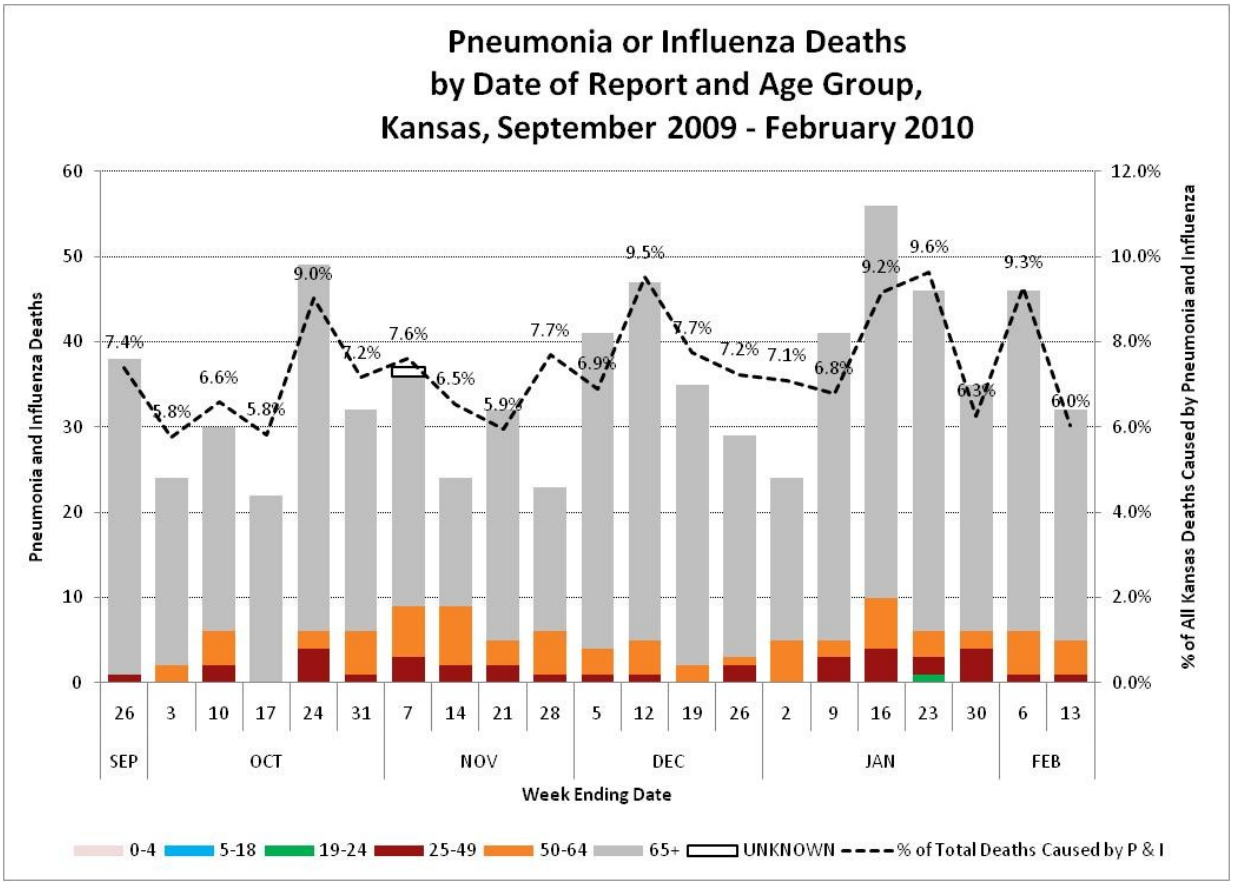




Hospital Admissions
(Surveillance Conducted via EMSystems)
Week ending February 13, 2010

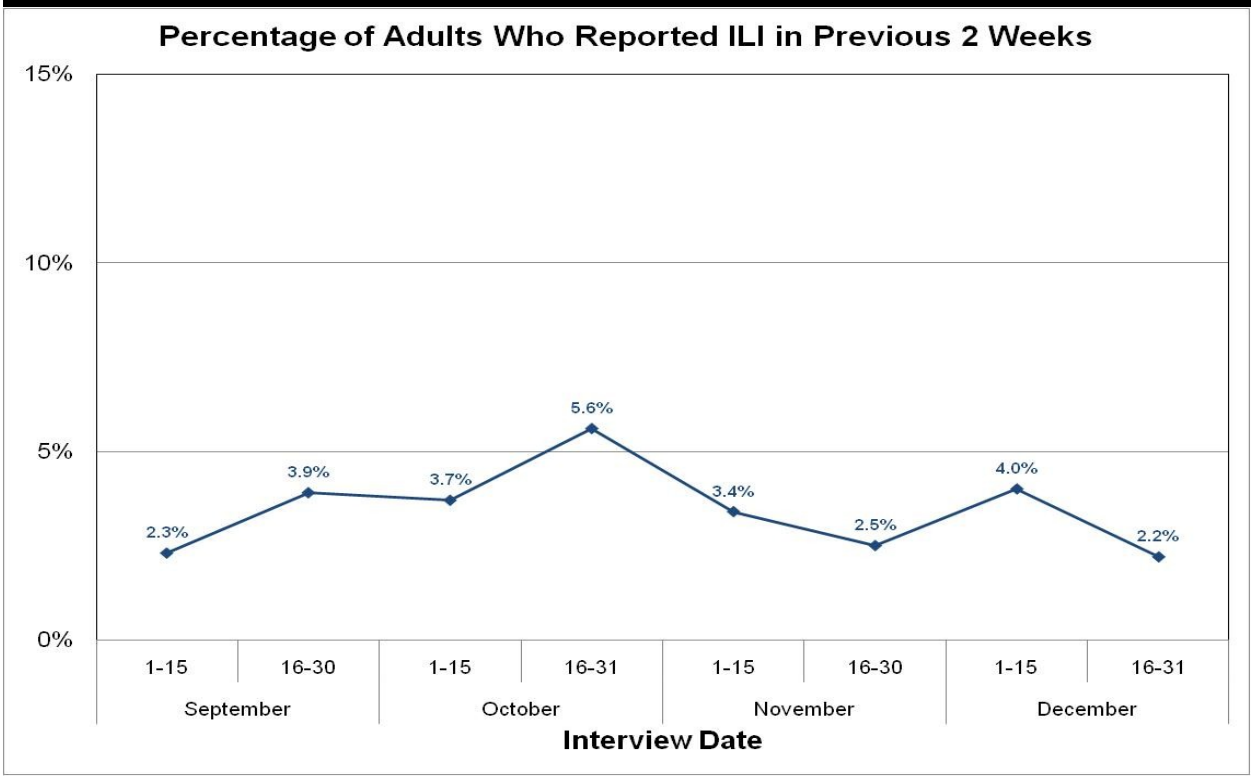


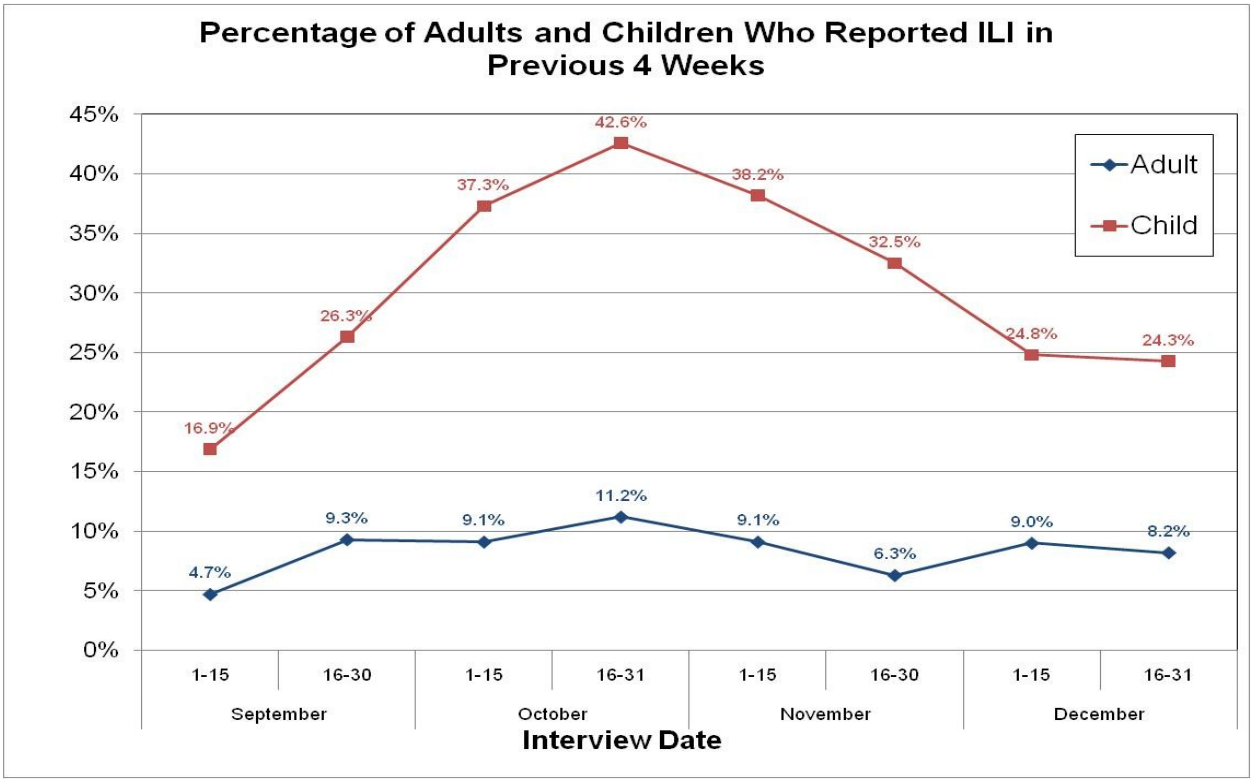
Mortality Due to Pneumonia or Influenza
(Surveillance Conducted via KDHE Vital Statistics)



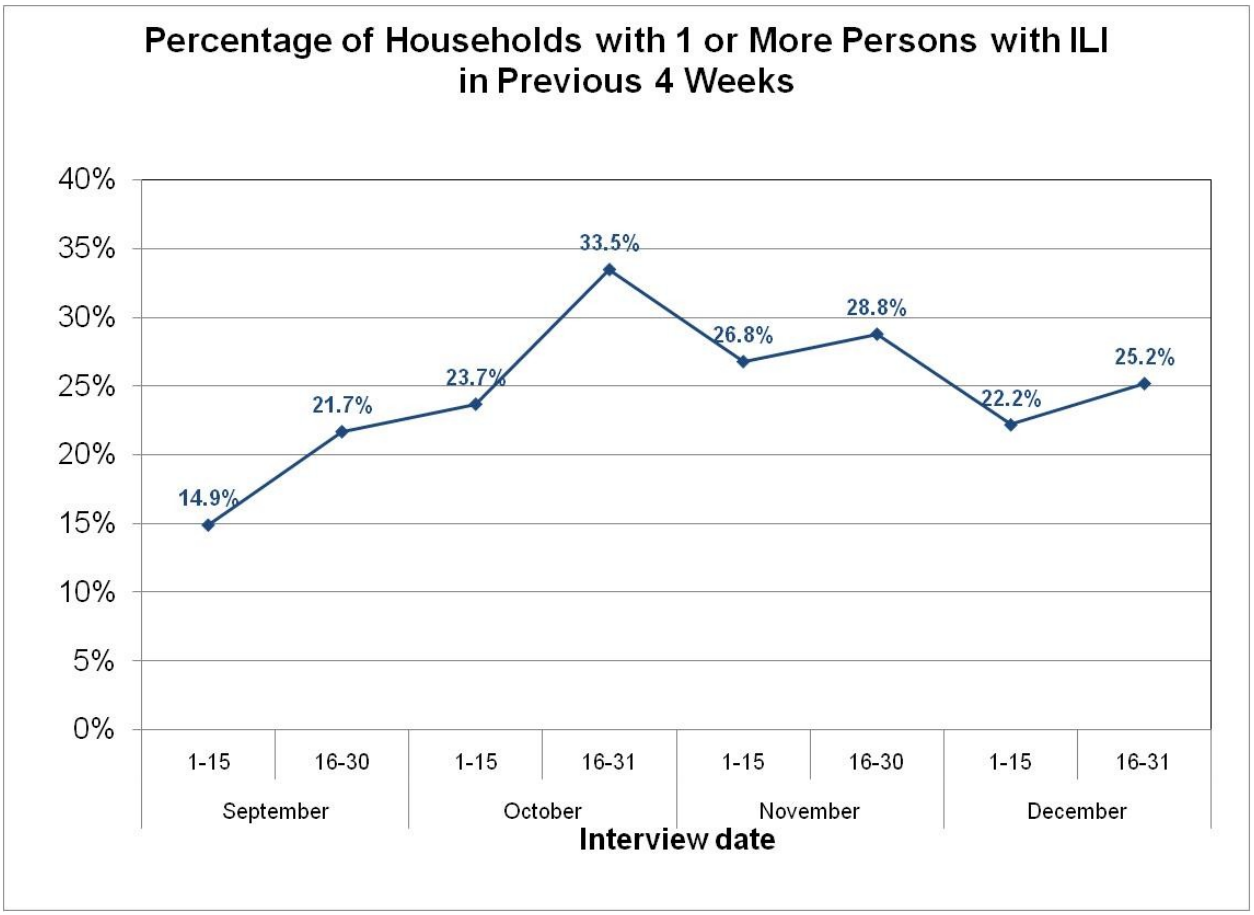
Cumulative Number of Pneumonia or Influenza Deaths Reported by Age Group, September 26, 2009—February 13, 2010							
0-4	**5-18**	**19-24**	**25-49**	**50-64**	**65+**	**Unknown**	**Total**
0	0	1	35	71	635	1	743

Self-Reported Influenza-like Illness (Surveillance Conducted via KDHE BRFSS)





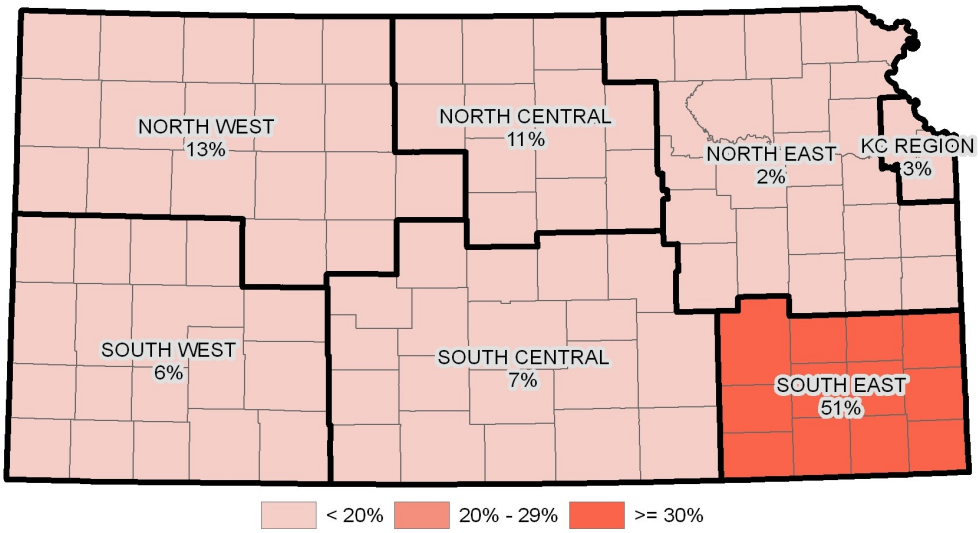
Self-Reported Influenza-like Illness (Surveillance Conducted via BRFSS)



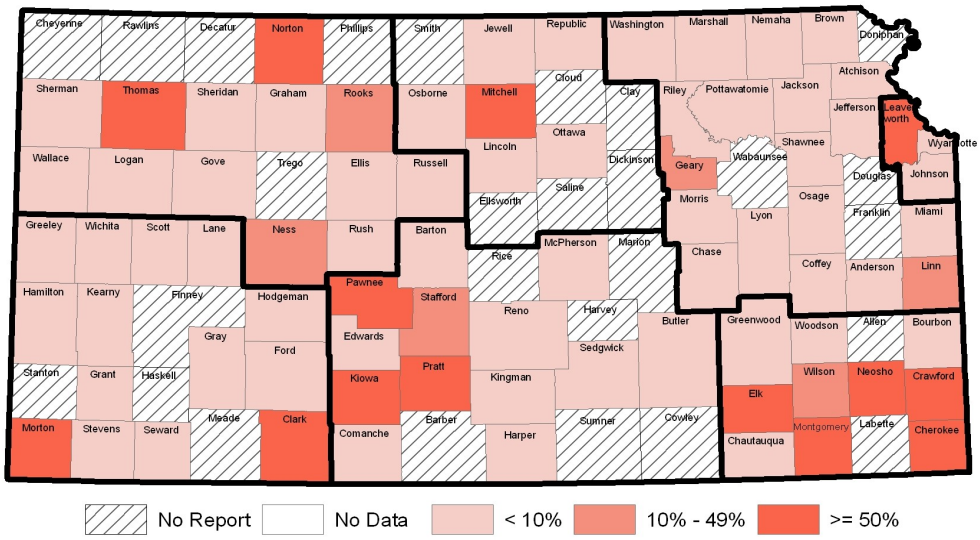
School Absenteeism
(Surveillance Conducted via Health Departments)
Week ending February 12, 2010

Percentage of Schools Reporting
10% or Greater Absenteeism
February 8 - February 12, 2010

Preparedness Region Summary for Elementary Schools



County Summary for Elementary Schools



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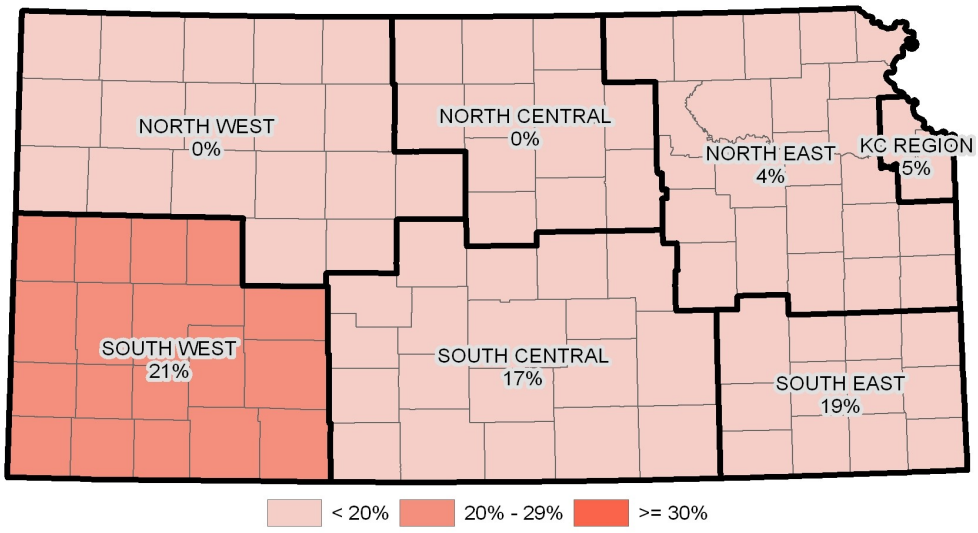
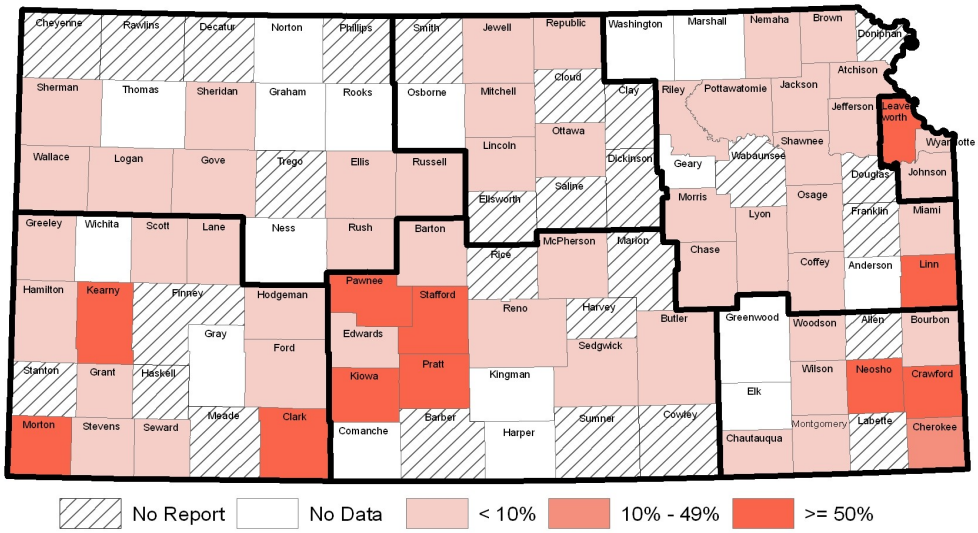
School Absenteeism
(Surveillance Conducted via Health Departments)
Week ending February 12, 2010

Percentage of Schools Reporting
10% or Greater Absenteeism
February 8 - February 12, 2010

Preparedness Region Summary for Middle Schools



County Summary for Middle Schools



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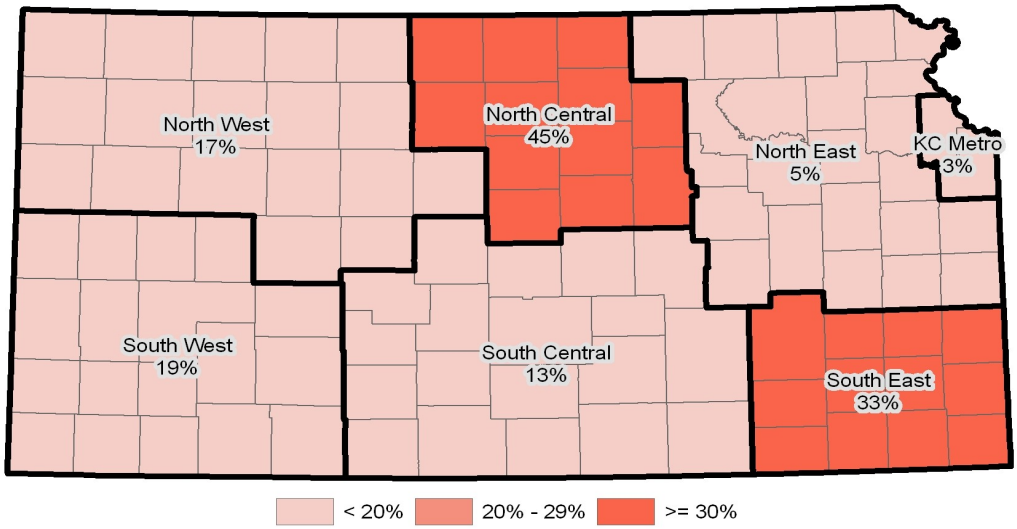
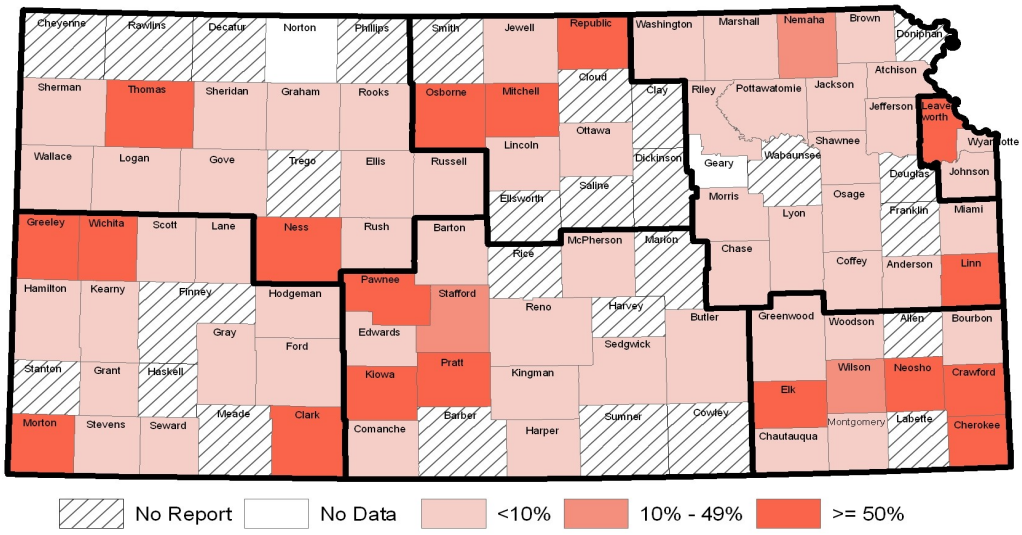
School Absenteeism
(Surveillance Conducted via Health Departments)
Week ending February 12, 2010

Percentage of Schools Reporting
10% or Greater Absenteeism
February 8 - February 12, 2010

Preparedness Region Summary for High Schools



County Summary for High Schools



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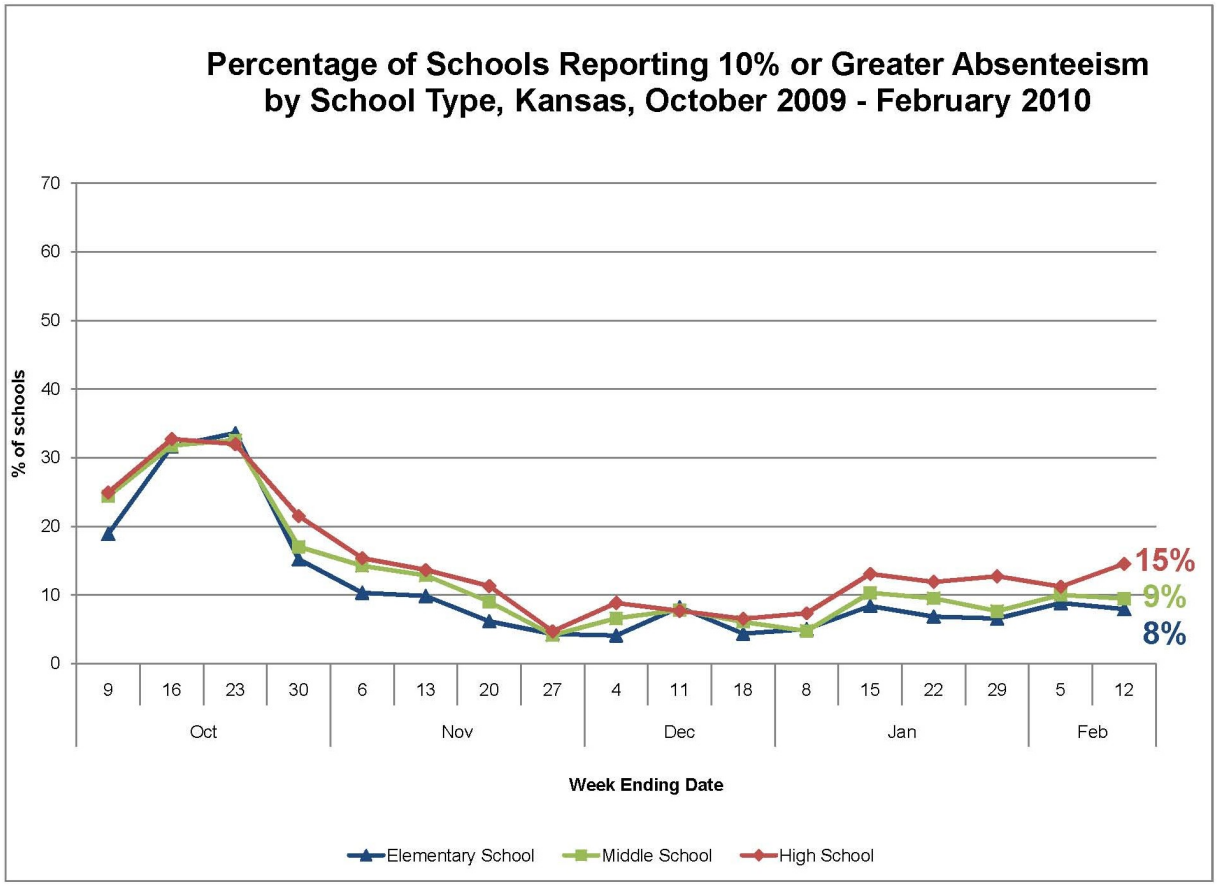
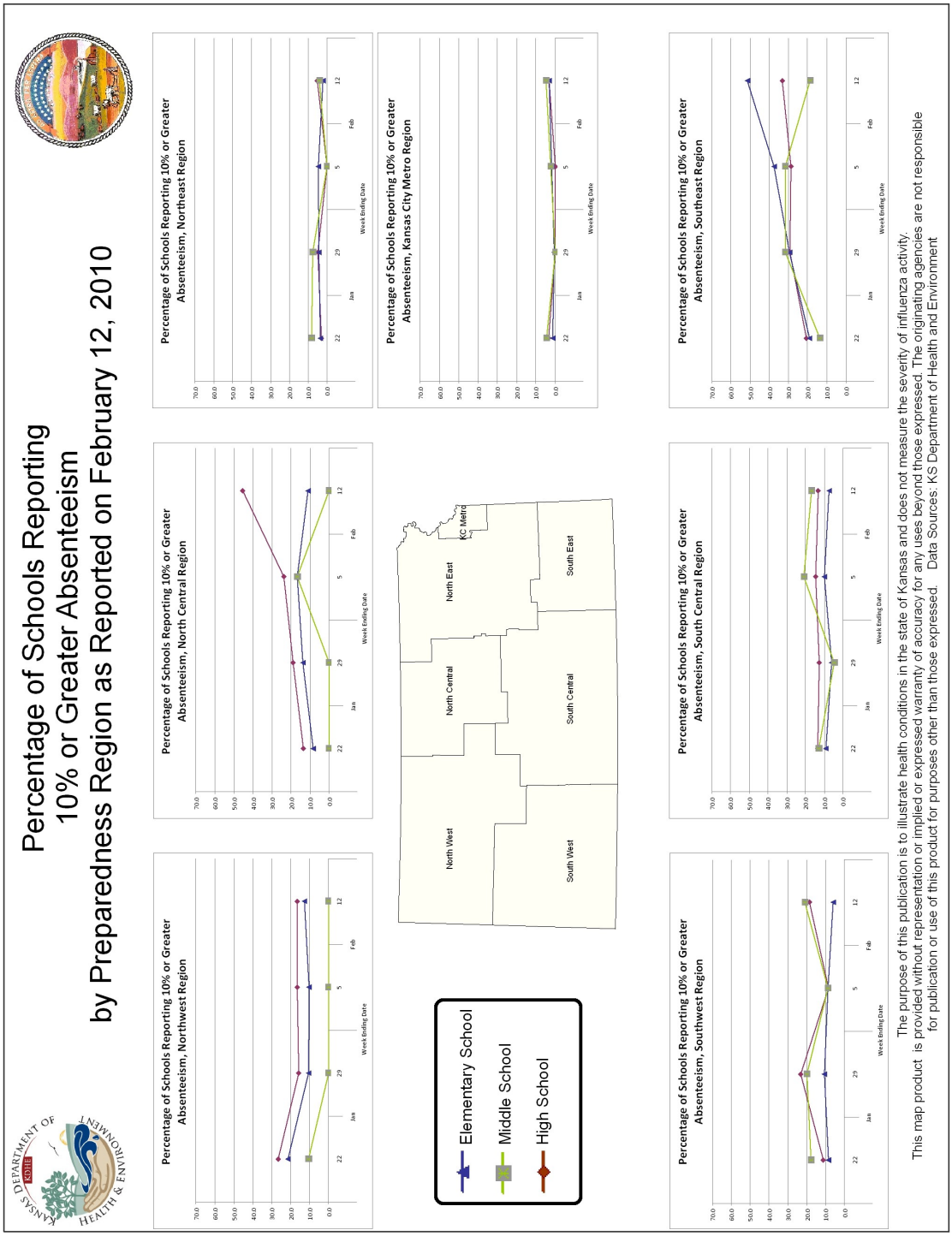
School Absenteeism
(Surveillance Conducted via Health Departments)
Week ending February 12, 2010*



No data reported for the week ending December 25, 2009 and January 1, 2010 due to Winter Break.

School Absenteeism
(Surveillance Conducted via Health Departments)
Week ending February 12, 2010*



Percentage of Schools Reporting 10% or Greater Absenteeism by Category and County, Week ending February 12, 2010

County	Elementary School	Middle School	High School
ALLEN			
ANDERSON	0%		0%
ATCHISON	0%	0%	0%
BARBER			
BARTON	0%	0%	0%
BOURBON	0%	0%	0%
BROWN	0%	0%	0%
BUTLER	4%	0%	0%
CHASE	0%	0%	0%
CHAUTAUQUA	0%	0%	0%
CHEROKEE	83%	33%	67%
CHEYENNE			
CLARK	100%	50%	50%
CLAY			
CLOUD			
COFFEY	0%	0%	0%
COMANCHE	0%		0%
COWLEY			
CRAWFORD	100%	100%	67%
DECATUR			
DICKINSON			
DONIPHAN			
DOUGLAS			
EDWARDS	0%	0%	0%
ELK	100%		50%
ELLIS	0%	0%	0%
ELLSWORTH			
FINNEY			
FORD	0%	0%	0%
FRANKLIN			
GEARY	25%		
GOVE	0%	0%	0%
GRAHAM	0%		0%
GRANT	0%	0%	0%
GRAY	0%		0%

County	Elementary School	Middle School	High School
GREELEY	0%	0%	100%
GREENWOOD	0%		0%
HAMILTON	0%	0%	0%
HARPER	0%		0%
HARVEY			
HASKELL			
HODGEMAN	0%	0%	0%
JACKSON	0%	0%	0%
JEFFERSON	0%	0%	0%
JEWELL	0%	0%	0%
JOHNSON	1%	0%	0%
KEARNY	0%	50%	0%
KINGMAN	0%		0%
KIOWA	50%	100%	100%
LABETTE			
LANE	0%	0%	0%
LEAVENWORTH	67%	100%	50%
LINCOLN	0%	0%	0%
LINN	40%	100%	50%
LOGAN	0%	0%	0%
LYON	0%	0%	0%
MARION			
MARSHALL	0%		0%
MCPHERSON	0%	0%	0%
MEADE			
MIAMI	0%	0%	0%
MITCHELL	50%	0%	50%
MONTGOMERY	50%	0%	0%
MORRIS	0%	0%	0%
MORTON	50%	100%	67%
NEMAHA	0%	0%	33%
NEOSHO	75%	50%	50%
NESS	25%		50%
NORTON	50%		
OSAGE	0%	0%	0%

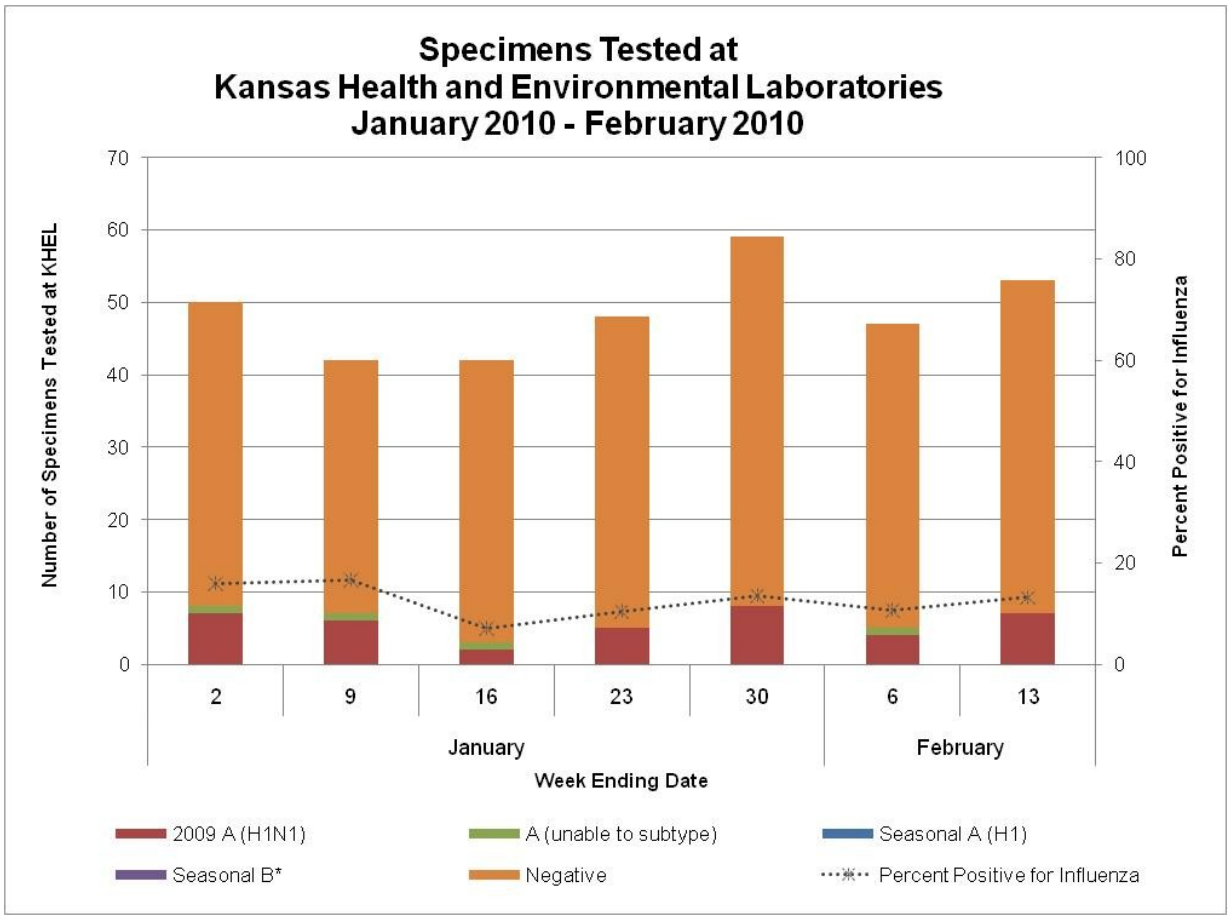
No report or no data available

Percentage of Schools Reporting 10% or Greater Absenteeism by Category and County, Week ending February 12, 2010

County	Elementary School	Middle School	High School
OSBORNE	0%		100%
OTTAWA	0%	0%	0%
PAWNEE	75%	100%	100%
PHILLIPS			
POTTAWATOMIE	0%	0%	0%
PRATT	75%	100%	100%
RAWLINS			
RENO	0%	0%	0%
REPUBLIC	0%	0%	50%
RICE			
RILEY	0%	0%	0%
ROOKS	25%		0%
RUSH	0%	0%	0%
RUSSELL	0%	0%	0%
SALINE			
SCOTT	0%	0%	0%
SEDGWICK	0%	0%	0%
SEWARD	0%	0%	0%
SHAWNEE	0%	0%	0%
SHERIDAN	0%	0%	0%
SHERMAN	0%	0%	0%
SMITH			
STAFFORD	33%	67%	33%
STANTON			
STEVENS	0%	0%	0%
SUMNER			
THOMAS	100%		100%
TREGO			
WABAUNSEE			
WALLACE	0%	0%	0%
WASHINGTON	0%		0%
WICHITA	0%		100%
WILSON	20%	0%	33%
WOODSON	0%	0%	0%
WYANDOTTE	0%	0%	0%

. No report or no data available

Laboratory Testing
(Surveillance Conducted via Kansas Health and Environmental Laboratories)



Kansas Department of Health and Environmental Laboratories
October 4, 2009 — February 13, 2010

No. of specimens submitted for testing at KHEL	2,375
No. of specimens testing positive for influenza A (2009 H1N1)	909 (38%)

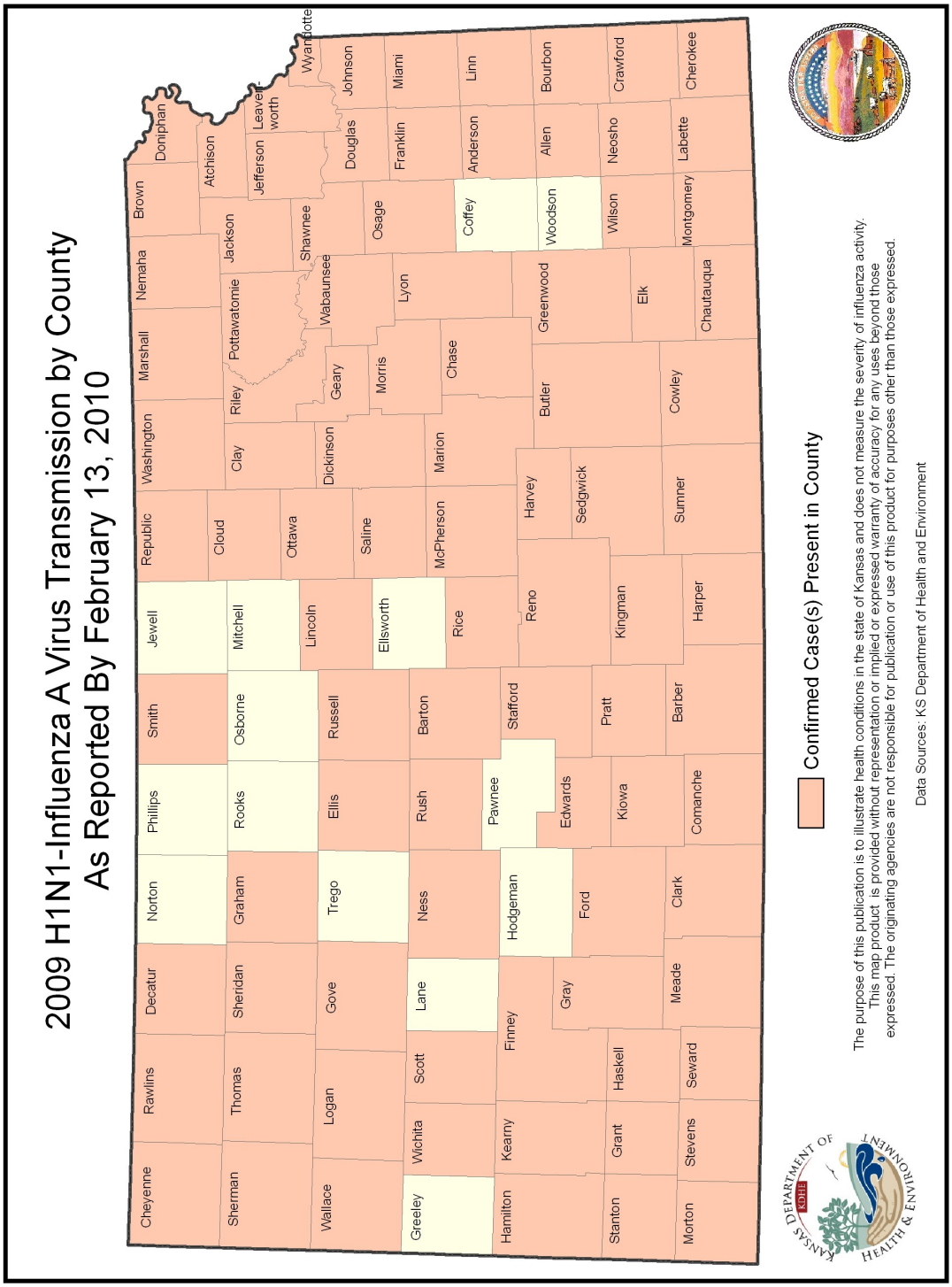
Laboratory Testing
(Surveillance Conducted via Kansas Health and Environmental Laboratories)

Influenza Specimens Tested at KHEL by Hospitalization Status

October 4, 2009 – February 13, 2010

FREQUENCY of Hospitalized

Descriptive Epidemiology of KHEL-Confirmed H1N1 Cases

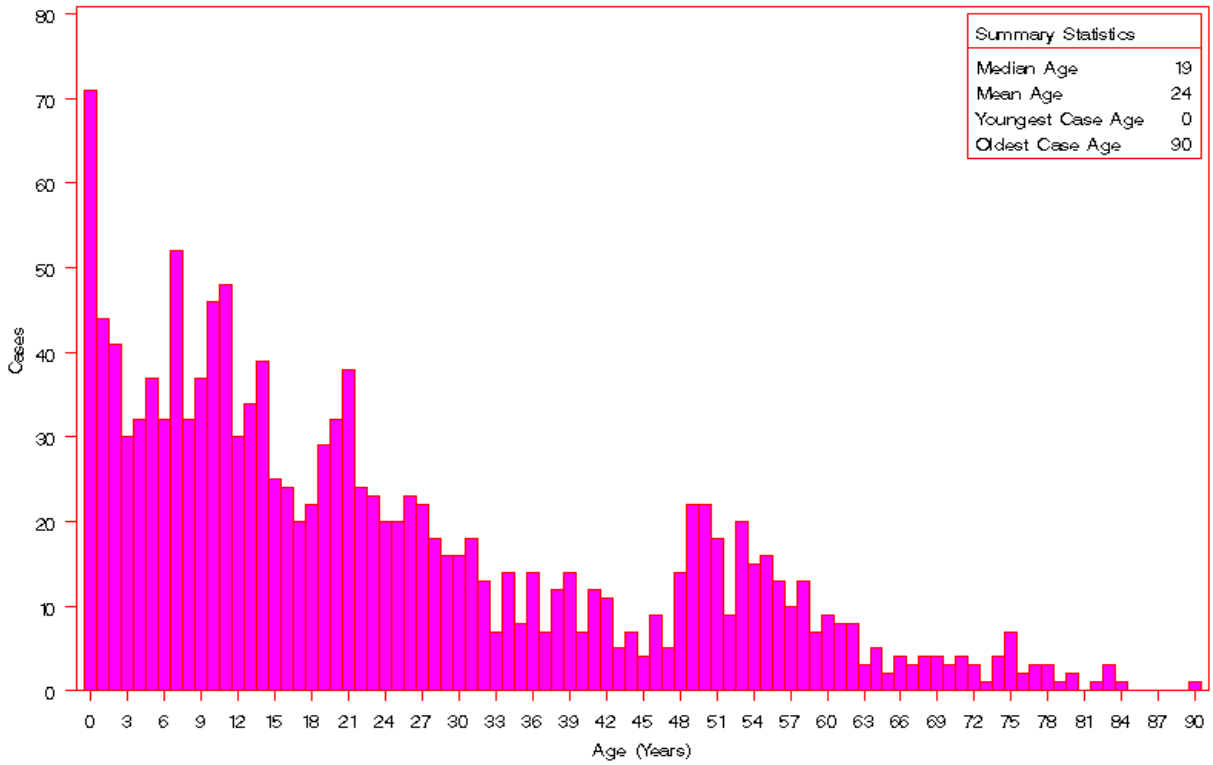


Descriptive Epidemiology of KHEL-Confirmed H1N1 Cases

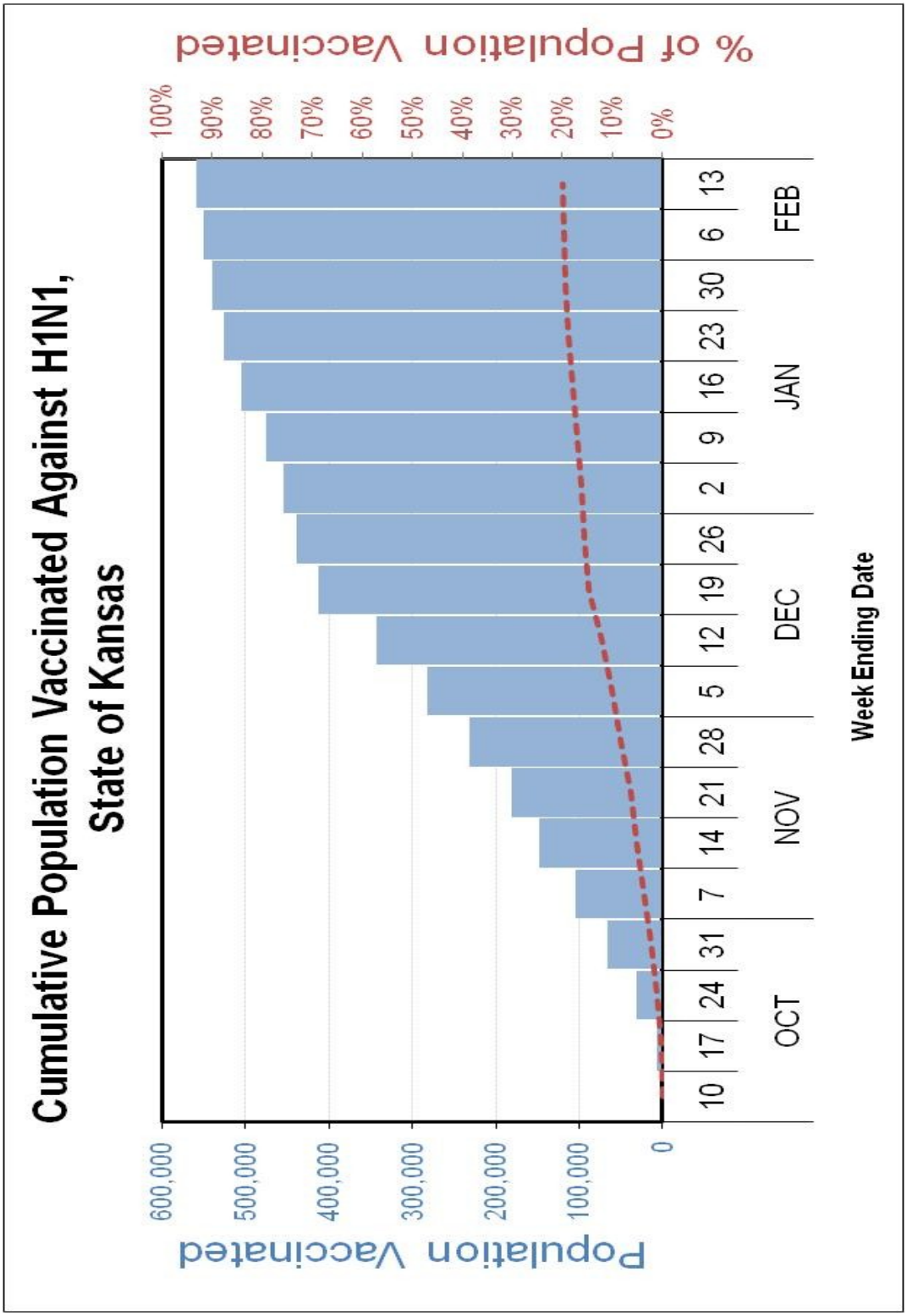
Patient Characteristics for Laboratory-Confirmed H1N1 Cases (N = 1413)

Median Age (Years)	19	
Age Range (Years)	<1 to 90	
Age Groups	**Percent (%) of cases**	**Rate per 100,000 population**
<5 Years	16	108
5 to 24 Years	46	81
25 to 49 Years	23	34
50 to 64 Years	12	35
65+ Years	4	15
Male	46	46
Female	54	54
Hispanic or Latino	18	97
Races		
White	73	41
Black	8	58
Asian/Pacific Islander	3	55
American Indian/Alaska Native	<1	18
Mixed Race	2	(unknown)

Age Distribution of Laboratory Confirmed Cases as of February 13, 2010

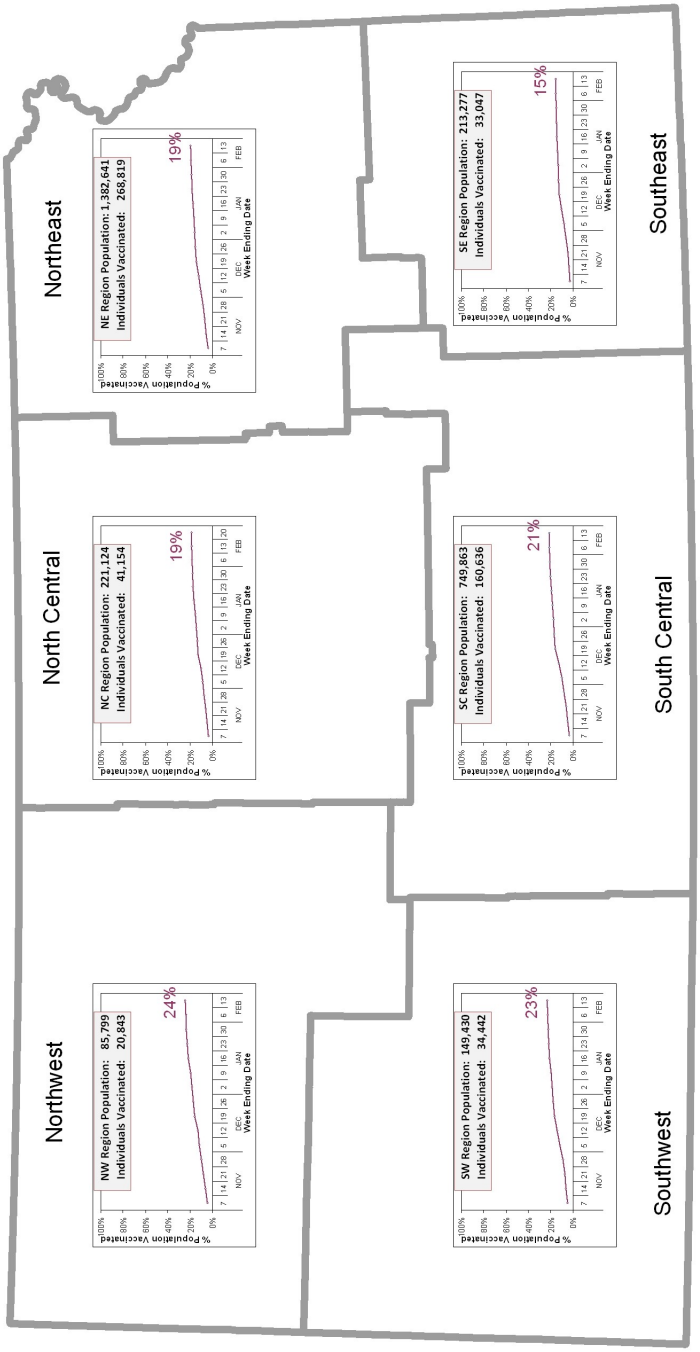


Population Vaccinated Against 2009 H1N1 Influenza A Virus



Population Vaccinated Against 2009 H1N1 Influenza A Virus

Cumulative Population Vaccinated Against H1N1, by Region and Week as Reported on February 13, 2010



The purpose of this publication is to illustrate health conditions in the state of Kansas and does not measure the severity of influenza activity. This map product is provided without representation or implied or expressed warranty of accuracy for any uses beyond those expressed. The originating agencies are not responsible for publication or use of this product for purposes other than those expressed.

Data Sources: KS Department of Health and Environment

Technical Notes

Outpatient Influenza-like Illness Surveillance (ILINet)
Information on patient visits to health care providers for influenza-like illness is collected through the US Outpatient Influenza-like Illness Surveillance Network (ILINet). For this system, ILI is defined as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat in the absence of a KNOWN cause other than influenza.

ILINet clinics in Kansas report the number of patients seen with influenza-like illness each week. The information reflects data collected for the week ending the previous Saturday. As of January 2, 2010, seventy sites are enrolled in ILINet in Kansas. The maps and charts on pages 7-10 show the percentage of ILI visits reported by region and by site by week ending date. Each percentage was calculated by dividing the number of patients seen with ILI at the clinic by the total number of patients seen and multiplying by 100.

Influenza-like illness data are collected from Sunday through Saturday of each week. Each participating clinic is requested to summarize the data weekly and submit the data by noon on Tuesday of the following week. The information on these charts may change each week because of data that may have been submitted after the reporting deadline.

Hospital Admissions for Pneumonia or Influenza Surveillance (EMSystems)
Hospitals throughout Kansas submit information to the Kansas Hospital Association (KHA) through EMSystems, a secure, online reporting system. One hundred and thirty-one (131) hospitals that have access to EMSystems are included in this surveillance program. KDHE has partnered with KHA to collect aggregate information on patients hospitalized for pneumonia or influenza.

The maps and graphs on pages 11-14 show the rate of hospital admissions for pneumonia or influenza reported by region and by hospital by week ending date. Each rate was calculated by dividing the number of patients admitted to the hospital with pneumonia or influenza by bed days. The denominator bed days was calculated by multiplying the number of staffed beds by seven.

Mortality Due to Pneumonia or Influenza
The Office of Vital Statistics within the Bureau of Public Health Informatics at KDHE receives and preserves vital records for events (births, deaths, marriages, and divorces) which occur in Kansas. The mortality data on page 18 reflects the number and percentage of persons whose primary or underlying cause of death was attributed to pneumonia and / or influenza.

Self-Reported Influenza-like Illness
The Behavioral Risk Factor Surveillance System (BRFSS), which is coordinated and partially funded by the Centers for Disease Control and Prevention, is the largest continuously conducted telephone survey

Technical Notes (continued)

Self-Reported Influenza-like Illness (continued)
in the world. It is conducted in every state, the District of Columbia, and several United States territories. The first BRFSS survey in Kansas was conducted as a point-in-time survey in 1990, and Kansas has conducted the BRFSS survey annually since 1992.

Beginning in September 2009, the BRFSS questionnaire was revised to include questions to assess influenza-like illness among adult respondents and other members of the household. The graphs on pages 19 and 20 provide the percent of adults, children, and households reporting ILI.

School Absenteeism Surveillance
Data are collected by local health departments (LHDs) during each school week. LHDs report the number of schools with 10% or greater absenteeism and the total number of schools that submit data each week. LHDs submit data to KDHE by noon on Tuesday of the following week.

LHDs report county data in three categories: elementary school (i.e. K-5), middle school (i.e., 6-8), and high school (i.e., 9-12). The designated school category is based upon the majority of grades within the school; for instance, a school consisting of grade levels K-6 would be classified as an elementary school.

Percentages of school absenteeism by county shown on pages 21-27 may be unstable and changes over time should be interpreted with caution. “No report” classification indicates the LHD failed to report any data to KDHE. “No data” classification indicates that either the school(s) did not report any data to the LHD or there are no schools in the county for the specific school category.

Laboratory Testing at Kansas Department of Health and Environmental Laboratories (KHEL)
The information on pages 28-30 represents data reported to KDHE for the week ending the previous Saturday. Prior to September 1, 2009 persons with symptoms consistent with ILI were tested at KHEL. Beginning September 1, specimens were only tested if the person was hospitalized, had died and the cause of death was suspected to be influenza, or if the person was seen at an ILINet Clinic Site.

Descriptive Epidemiology for Laboratory-Confirmed H1N1 Cases at KHEL
The information on page 31 represents data reported to KDHE for the week ending the previous Saturday. Only cases that were laboratory confirmed at KHEL are included.

Population Vaccinated Against H1N1 Influenza A Virus
Vaccination sites throughout Kansas submit information on the number of H1N1 vaccine doses administered each week. The charts show the cumulative number of individuals vaccinated at the end of each week in each region of the state, and the cumulative percentage of each region's population that has been immunized. The cumulative numbers and rates may be skewed slightly, as individuals are divided into regions based on the site of vaccination; these charts do not account for individuals who were vaccinated in a region other than the region in which they reside. Vaccine administration data may change each week because of data submitted after the reporting deadline or because of corrections made to previously submitted data.

Data Quality Indicators

Percentage of Sites Represented in the Current Week's Data for the Following Sections:

Outpatient Influenza-like Illness Surveillance — 61% (43 of 70 ILINet sites)

Hospital Admissions for Pneumonia or Influenza Surveillance (EMSystems) - 59% (78 of 132 hospitals)

School Absenteeism Surveillance— 74% (78 of 105 counties)

Appendix - Number and County Location of ILINet Clinic Sites

Allen	1
Barton	2
Brown	1
Butler	1
Cherokee	1
Cheyenne	1
Clark	1
Cloud	1
Cowley	1
Crawford	1
Dickinson	3
Douglas	2
Ellis	2
Finney	1
Ford	1
Franklin	1
Geary	2
Grant	2
Greenwood	1
Harvey	1
Jefferson	1
Johnson	5
Kiowa	1
Labette	1
Leavenworth	1
Linn	1
Lyon	2
McPherson	1
Meade	1
Montgomery	2
Neosho	1
Pottawatomie	1
Pratt	1
Reno	2
Riley	3
Saline	2
Sedgwick	6
Seward	2
Shawnee	
Sherman	1
Wichita	1
Wyandotte	6

Appendix - List of Hospitals Included in Hospital Surveillance Section for Current Report

CENTRAL KANSAS MEDICAL CTR GREAT BEND
CITIZENS MEDICAL CENTER COLBY
CLOUD COUNTY HEALTH CENTER CONCORDIA
COFFEY COUNTY HOSPITAL BURLINGTON
COFFEYVILLE REGIONAL MEDICAL CENTER
COMMUNITY MEMORIAL HC MARYSVILLE
EDWARDS CO. HOSP. AND HC CTR. KINSLEY
ELLINWOOD DISTRICT HOSPITAL
FREDONIA REGIONAL HOSPITAL
GALICHIA HEART HOSPITAL
GEARY COMMUNITY HOSPITAL JUNCTION CITY
GOODLAND REGIONAL MEDICAL CENTER
GRAHAM COUNTY HOSPITAL HILL CITY
GREAT BEND REGIONAL HOSPITAL
GREELEY COUNTY HEALTH SERVICES TRIBUNE
GREENWOOD COUNTY HOSPITAL EUREKA
GRISELL MEM. HOSP. DIST. NO. 1 RANSOM
HARPER COUNTY HOSP DIST NO 6 ANTHONY
HIAWATHA COMMUNITY HOSPITAL
HILLSBORO COMMUNITY HOSPITAL
HODGEMAN CO HEALTH CENTER JETMORE
HOLTON COMMUNITY HOSPITAL
JEFFERSON CO. MEM. HOSPITAL WINCHESTER
JEWELL COUNTY HOSPITAL MANKATO
KANSAS MEDICAL CENTER ANDOVER
KEARNY COUNTY HOSPITAL LAKIN
LANE COUNTY HOSPITAL DIGHTON
LAWRENCE MEMORIAL HOSPITAL
LINCOLN COUNTY HOSPITAL
LOGAN COUNTY HOSPITAL OAKLEY
MEDICINE LODGE MEMORIAL HOSPITAL
MEMORIAL HOSPITAL MCPHERSON
MERCY HOSPITAL INDEPENDENCE
MERCY HOSPITAL MOUNDRIDGE
MERCY REGIONAL HEALTH CENTER MANHATTAN
MIAMI COUNTY MEDICAL CENTER PAOLA
MINNEOLA DISTRICT HOSPITAL
MT. CARMEL REG MEDICAL CTR PITTSBURG
NEOSHO MEMORIAL RMC CHANUTE
NEWMAN REGIONAL HEALTH EMPORIA
NEWTON MEDICAL CENTER
NINNESCAH VALLEY HEALTH SYS. KINGMAN
NORTON COUNTY HOSPITAL
OLATHE MEDICAL CENTER
OSWEGO COMMUNITY HOSPITAL
OTTAWA COUNTY HEALTH CENTER MINNEAPOLIS
PHILLIPS COUNTY HOSPITAL PHILLIPSBURG
PRATT REGIONAL MEDICAL CENTER
PROMISE REGIONAL MEDICAL CENTER HUTCHINS
RANSOM MEMORIAL HOSPITAL OTTAWA
REPUBLIC COUNTY HOSPITAL BELLEVILLE
ROOKS COUNTY HEALTH CENTER PLAINVILLE
RUSH COUNTY MEMORIAL HOSPITAL LACROSSE
SABETHA COMMUNITY HOSPITAL
SALINA REGIONAL HEALTH CENTER
SATANTA DISTRICT HOSPITAL AND LTCU
SCOTT COUNTY HOSPITAL
SEDAN CITY HOSPITAL
SHAWNEE MISSION MEDICAL CENTER
SHERIDAN COUNTY HEALTH COMPLEX HOXIE
SOUTH CENTRAL KANSAS RMC ARKANSAS CITY
SOUTHWEST MEDICAL CENTER LIBERAL
ST. CATHERINE HOSPITAL GARDEN CITY
ST. FRANCIS HEALTH CENTER TOPEKA
ST. LUKE HOSPITAL AND LIVING CTR MARION
ST. MARYS HEALTH CENTER ST. MARYS
STAFFORD DISTRICT HOSPITAL
STANTON HEALTH CARE FACILITY JOHNSON
STORMONT VAIL HEALTHCARE TOPEKA
SUSAN B. ALLEN MEM. HOSPITAL EL DORADO
UNIVERSITY OF KANSAS HOSPITAL
VIA CHRISTI REGIONAL MED CTR WICHITA
WAMEGO CITY HOSPITAL
WASHINGTON COUNTY HOSPITAL
WESLEY MEDICAL CENTER WICHITA