



# EPI UPDATES

July  
2015

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## West Nile Virus Surveillance in Kansas

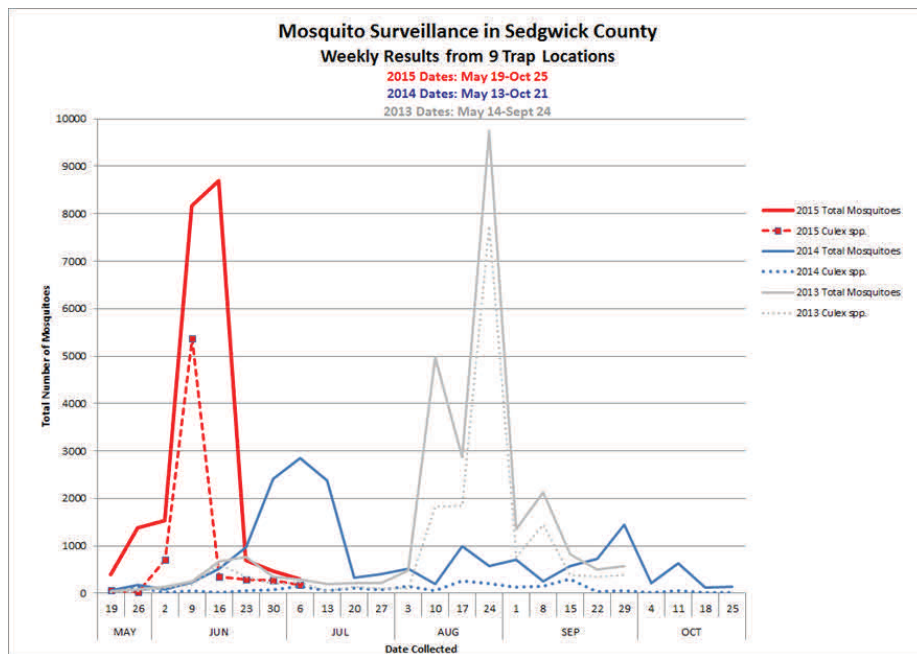
by Amie Worthington

West Nile virus (WNV) is the leading cause of domestically-acquired arboviral disease in the United States. The Kansas Department of Health and Environment (KDHE) began surveillance for WNV in 2001, and the first human case was reported in Kansas in 2003. This surveillance system has three main components: mosquito collection and identification, testing of mosquitoes for WNV, and reporting the results to public health partners.

Kansas has seen an increased number of human cases during the past three seasons with 57 cases in 2012, 92 cases in 2013, and 54 cases in 2014. This is in comparison to an average of 16 cases during 2002-2011. The U.S. has seen similar increases in WNV cases. This increase of cases could be due to a confluence of ecological factors including higher than normal temperatures that may have influenced mosquito and bird abundance.<sup>1</sup>

Since WNV first emerged in Kansas in 2003, Sedgwick County has historically had the most human cases of any county in our state. Therefore, we have concentrated our mosquito surveillance efforts in Sedgwick County. We use this data as a proxy for mosquito activity for the entire state.

KDHE, the Sedgwick County Health Department (SCHD), and the Kansas Biological Survey (KBS) are collaborating for the third year for WNV mosquito surveillance. Mosquito surveillance is conducted at nine locations in the Wichita metropolitan area. Mosquito traps are set and collected weekly during the months of May through September. KBS identifies the mosquitoes, and the *Culex* mosquitoes, the primary vector for WNV, are sent the Kansas Health and Environmental Laboratories to be tested.



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KDHE will monitor human WNV through reports from physicians and laboratories. Mosquito and human surveillance results will be posted on the KDHE website weekly ([http://www.kdheks.gov/epi/arboviral\\_disease.htm](http://www.kdheks.gov/epi/arboviral_disease.htm)). Each state reports data to a national surveillance database called ArboNet (<http://www.cdc.gov/westnile/statsMaps/>). ArboNet maintains data on arboviral infections among presumptive viremic blood donors, veterinary disease cases, mosquitoes, and sentinel animals.

**Remember these preventative measures to protect yourself and your community:**

- Use insect repellent containing DEET or picaridin on skin. Follow label directions.
- Empty standing water from tarps, old tires, buckets and other places where rainwater is trapped. Use larvicide in low-lying areas where water cannot be removed.
- Refresh water for bird baths, pet bowls, and wading pools at least every three days.

<sup>1</sup>Kuehn, Bridget M. "Record Heat May Have Contributed to a Banner Year for West Nile Virus." *Jama* 308.18 (2012): 1846. Print.



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## Disease Reporting and Disease Control Performance Measures

by Daniel Neises, MPH

Public Health Emergency Preparedness Cooperative Agreement  
Capability #13: Public Health Surveillance and Epidemiological Investigation  
Budget Period 3 (July 2014 – June 2015), as of 7/7/15

**Selected Diseases:**

Disease	Case Classification Criteria
Hepatitis A	confirmed
Salmonellosis	confirmed, excluding typhoid fever
<i>E. coli</i> , STEC	confirmed
Shigellosis	confirmed
Tularemia	confirmed and probable
Varicella	confirmed and probable
Botulism	confirmed, excluding infant botulism
Measles	confirmed
Meningococcal disease	confirmed
Pertussis	confirmed, with laboratory results

**Disease Reporting:** Proportion of selected disease reports received by a public health agency within the awardee-required timeframe. Calculated by using [EpiTrax fields](#):

$$\frac{(\text{Lab Test Date or Date Diagnosed} - \text{Presumptive}) - (\text{Date Reported to Public Health})}{\leq \text{KDHE-required disease reporting timeframe}}$$

**Disease Control:** Proportion of reports of selected disease for which initial control measures were initiated within an appropriate timeframe. Calculated by using [EpiTrax fields](#):

$$\frac{(\text{Date LHD Investigation Started}) - (\text{Date Reported to Public Health})}{\leq \text{CDC-required timeframe}}$$

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## Disease Reporting

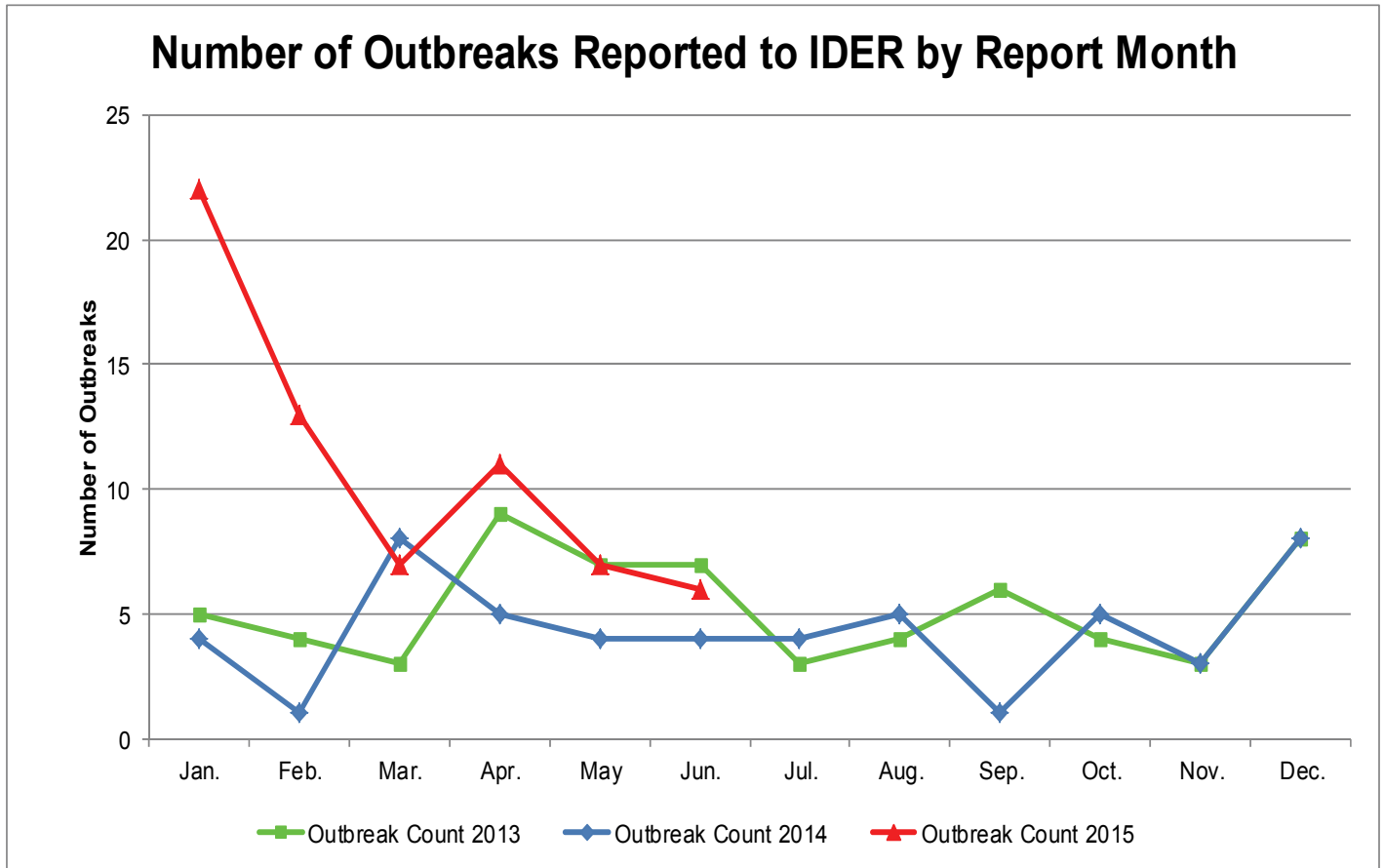
Disease	KDHE Required Timeframe	Statewide Received	Statewide Received On Time	%	% Change From Previous Month
Hepatitis A	7 days	8	8	100	-
Salmonellosis	7 days	436	429	98	-1
<i>E. coli</i> , STEC	7 days	80	80	100	-
Shigellosis	7 days	53	52	98	-
Tularemia	7 days	21	20	95	+1
Varicella	7 days	264	243	92	-
Botulism	4 hours*	-	-	-	-
Measles	4 hours*	10	9	90	-
Meningococcal disease	4 hours*	2	2	100	-
Pertussis	4 hours*	235	212	90	-

\*Because EpiTrax does not capture time reported to public health, KDHE is allowed to "consider cases as immediately reported if the selected case event date and date of first report to a health department occur on the same date."

## Disease Control

Disease	CDC Required Timeframe	Statewide Received	Statewide Investigated On Time	%	% Change From Previous Month
Hepatitis A	7 days	8	8	100	-
Salmonellosis	3 days	436	323	74	-
<i>E. coli</i> , STEC	3 days	80	64	80	+2
Shigellosis	3 days*	53	42	79	+1
Tularemia	2 days	21	16	76	-2
Varicella	1 day*	264	232	88	-
Botulism	1 day	-	-	-	-
Measles	1 day	10	10	100	-
Meningococcal disease	1 day	2	2	100	-
Pertussis	1 day*	235	197	84	+2

\*Collecting data for these diseases is optional. KDHE has defined these timeframes, not CDC.



Date Reported	Facility Type	Transmission	Disease	County
6/3/2015	Restaurant	Food	Norovirus	Douglas
6/3/2015	Adult care facility	Person-to-Person	Pertussis	Harper
6/5/2015	School	Person-to-Person	Varicella (Chickenpox)	Pottawatomie
6/22/2015	Other	Food	Campylobacteriosis	Sherman
6/24/2015	Restaurant	Food	Unknown Etiology	Shawnee
6/25/2015	Camp	Unknown	Norovirus	Sedgwick

## EpiTrax Data Quality Indicators

by Sheri Tubach, MPH, MS

The Bureau of Epidemiology and Public Health Informatics has implemented a set of monthly quality indicators and performance measures to encourage data quality improvement in EpiTrax and timeliness of investigations. The first column is the EpiTrax field. The second column represents the number of cases with data in the field, and the third column, percent completed, represents the frequency of completion of the data field in EpiTrax. The indicators in red text represent a decrease in the percent complete since last month. In order to align with preparedness targets for initiation of disease control measures and to set goals for case investigation completeness, targets for these measures are shown in the table below. We hope that these targets will help local health departments prioritize case investigations. For questions, contact Sheri Tubach at [stubach@kdheks.gov](mailto:stubach@kdheks.gov).

June 2015		State's Total Number of Cases* = 403	
<b>EpiTrax Indicators</b>			
<b>EpiTrax Field</b>	<b>Number of Cases with Field Completed</b>	<b>Percent Completed</b>	
Address City	398	99	
Address County	403	100	
Address Zip	393	98	
Date of Birth	402	100	
Died	338	84	
Ethnicity†	324	80	
Hospitalized	343	85	
Occupation	160	40	
Onset Date	288	71	
Pregnancy††	113	62	
Race †	345	86	
Sex †	403	100	
Date LHD Investigation Started	313	78	
Date LHD Investigation Completed	278	69	
Persons Interviewed	274	68	
Persons Lost to Follow-Up	22	5	
Persons Refused Interview	4	1	
Persons Not Interviewed	103	26	
<b>Performance Measures</b>			
	<b>Number of Cases</b>	<b>Percent of Cases</b>	
Disease control measures began within the target for each disease <sup>^</sup>	265	66	
Case investigations were completed within the target for each disease <sup>^</sup>	145	36	

\* Calculations do not include Hepatitis B - chronic, Hepatitis C – past or present, or Rabies.

\*\* Out-of-state, discarded, deleted, or those deemed to be not a case are not included in this calculation.

† Unknown considered incomplete.

†† Pregnancy completeness calculated on females only.

<sup>^</sup> See the table on the following page for disease control and case investigation targets.

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## Disease Targets

Diseases	Disease Control (Days)*	Completed Case Investigation (Days)**
Anthrax; Botulism; Brucellosis; Cholera; Diphtheria; Hantavirus Pulmonary Syndrome; Hepatitis A; Influenza deaths in children <18 years of age; Measles; Meningitis, bacterial; Meningococemia; Mumps; Plague; Poliomyelitis; Q Fever; Rabies, human; Rubella; Severe acute respiratory syndrome (SARS); Smallpox; Tetanus; Tularemia; Viral hemorrhagic fever; Yellow fever	1	3
Varicella	1	5
Pertussis	1	14
Campylobacter infections; Cryptosporidiosis; Cyclospora infection; Giardiasis; Hemolytic uremic syndrome, postdiarrheal; Hepatitis B, acute; Legionellosis; Listeriosis; Salmonellosis, including typhoid fever; Shigellosis; Shiga-toxin <i>Escherichia coli</i> (STEC); Trichinosis; Vibriosis (not cholera)	3	5
Arboviral disease (including West Nile virus, Chikungunya, and Dengue); <i>Haemophilus influenzae</i> , invasive disease; <i>Streptococcus pneumoniae</i> , invasive	3	7
Ehrlichiosis / Anaplasmosis, Lyme disease, Malaria, Spotted Fever Rickettsiosis	3	14
Hepatitis B, chronic; Hepatitis C, past or present; Hepatitis C, acute; Leprosy (Hansen disease); Psittacosis; Streptococcal invasive, drug-resistant disease from Group A Streptococcus; Toxic shock syndrome, streptococcal and staphylococcal; Transmissible spongiform encephalopathy (TSE) or prion disease	N/A	N/A

\***Disease Control:** Calculated by using EpiTrax fields: **(Date LHD Investigation Started) – (Date Reported to Public Health)**

\*\***Completed Case Investigation:** Calculated by using EpiTrax fields: **(Date LHD Investigation Completed) – (Date Reported to Public Health)**



	Reported Disease Counts - June 2015						Grand Total	3 Year Avg. 2012-2014
	Not Available	Confirmed	Not a Case	Probable	Suspect	Unknown		
Disease	Count	Count	Count	Count	Count	Count	Count	Count
<i>Anaplasma phagocytophilum</i> (f. HGE)	2	0	3	1	0	0	6	4
Campylobacteriosis	49	24	0	19	0	0	92	80
Carbapenem-resistant Enterobacteriaceae	0	0	0	0	0	7	7	2
Cryptosporidiosis	3	3	0	8	0	0	14	8
Cyclosporiasis	1	1	0	0	0	0	2	0
Dengue	0	0	0	0	1	0	1	1
Ebola Active Monitoring	3	0	2	0	0	0	5	0
Ehrlichiosis, <i>Ehrlichia chaffeensis</i> (f. HME)	10	2	4	1	0	0	17	24
Ehrlichiosis/Anaplasmosis, undetermined	1	0	1	0	0	0	2	1
Giardiasis	4	6	0	0	0	0	10	13
<i>Haemophilus influenzae</i> , invasive disease	4	1	0	0	0	0	5	2
Hepatitis A	0	0	2	1	0	0	3	22
Hepatitis B virus infection, chronic	6	0	157	20	0	0	183	51
Hepatitis B, acute	1	0	3	0	0	0	4	7
Hepatitis C virus, past or present	104	40	67	0	5	0	216	200
Influenza	6	0	1	0	0	0	7	1
Legionellosis	4	0	0	0	0	0	4	3
Lyme Disease ( <i>Borrelia burgdorferi</i> )	10	1	9	1	1	0	22	42
Malaria ( <i>Plasmodium</i> spp.)	2	0	0	0	0	0	2	0
Measles (rubeola)	1	0	1	0	0	0	2	5
Meningitis, Bacterial Other	3	0	1	0	0	0	4	3
Meningococcal disease ( <i>Neisseria meningitidis</i> )	2	0	0	0	0	0	2	0
Mumps	1	0	1	0	0	0	2	3
Non-Reportable Condition	0	0	0	0	0	1	1	0
Norovirus	0	1	0	0	0	0	1	5
Pertussis	58	11	29	8	2	0	108	94
Q Fever ( <i>Coxiella burnetii</i> ), Acute	0	0	0	0	1	0	1	1
Rabies, animal	13	15	2	2	1	0	33	17
Rubella	0	0	24	0	0	0	24	36
Salmonellosis	2	31	1	1	1	0	36	52
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	4	13	4	0	4	0	25	22
Shigellosis	0	6	0	5	0	0	11	5
Spotted Fever Rickettsiosis (RMSF)	48	0	21	8	1	0	78	85
Streptococcal disease, invasive, Group A	1	3	2	0	1	0	7	4
<i>Streptococcus pneumoniae</i> , invasive disease	4	7	0	0	0	0	11	12
Tetanus ( <i>Clostridium tetani</i> )	0	0	0	1	0	0	1	0
Tularemia ( <i>Francisella tularensis</i> )	8	0	0	0	0	0	8	7
Varicella (Chickenpox)	21	10	15	2	0	0	48	48
West Nile virus non-neuroinvasive disease	2	0	19	1	1	0	23	8
<b>Grand Total</b>	<b>378</b>	<b>175</b>	<b>369</b>	<b>79</b>	<b>19</b>	<b>8</b>	<b>1,028</b>	<b>868</b>