

Bureau of Epidemiology & Public Health Informatics



EPI UPDATES

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Kansas Department of Health & Environment

Bureau of Epidemiology & Public Health Informatics

Farah Ahmed, MPH, PhD
Environmental Health Officer & State EpidemiologistLou Saadi, Ph.D., Director,
BEPHI & State RegistrarSheri Tubach, MPH, MS,
Director, IDERShannon Sandall
Director, Surveillance Systems
& *Epi Updates* EditorDaniel Neises, MPH
Senior EpidemiologistChelsea Raybern, MPH
Senior EpidemiologistIngrid Garrison, MPH, DVM,
DACVPM, State Public
Health VeterinarianCurtis State Office Building
1000 SW Jackson St.
Topeka, KS 66612Email: epihotline@kdheks.gov

Epi Hotline: 877-427-7317

Fax: 1-877-427-7318

Animal Rabies – Investigation and Surveillance

by Chelsea Raybern, MPH

As of April 13, 2018, 10 cases of animal rabies have been reported in Kansas: eight skunks, one raccoon, and one cow (Table 1). Rabies is a highly fatal viral zoonosis, and any mammal can get rabies. Wildlife serves as the primary source of infection; the skunk is the reservoir for rabies in Kansas. It is anticipated that as the

weather warms up outside the number of rabies cases will continue to rise due to increased interactions between humans and animals with wildlife. It is important that local health investigators understand how to assess exposure and conduct rabies contact investigations. Below are a few tips to assist local investigators after they receive report of an animal testing positive or unsuitable for rabies:

- **Identify if any humans or animals were exposed to the “rabid” animal.** The rabies virus is found in the saliva and neural tissue of an infected animal. The common mode of transmission is through a *bite* from a rabid animal, but rabies transmission can occur through *non-bite* exposures.

Bite exposure – Any penetration of the skin by teeth.

Non-bite exposures – Contamination of fresh open wounds with saliva or neural tissue, contamination of mucous membranes (e.g., lining of the mouth or inside eyelids) with saliva or neural tissue, scratches from wildlife (e.g., skunk, raccoon, feral cat), and corneal and organ transplantations from humans infected with rabies.

Contact such as petting or handling an animal, or contact with blood, urine, or feces does not constitute an exposure. Once the material containing the virus is dry, the virus is considered noninfectious.

- **Humans that have been exposed should receive rabies post-exposure prophylaxis (PEP).** Administration of PEP depends on the person’s rabies vaccination status.
 - Previously unvaccinated and healthy persons** – human rabies immunoglobulin (HRIG) and four doses of rabies vaccine on day 0, 3, 7 and 14.
 - Previously unvaccinated and immunocompromised persons** – HRIG and five doses of rabies vaccine on day 0, 3, 7, 14, and 28.
 - Previously vaccinated persons** – two doses of rabies vaccine on day 0 and 3. HRIG should not be given.

HRIG should always be administered in a previously unvaccinated person that has been exposed, even if it was a non-bite exposure. HRIG can be given up to and including day 7 of the vaccination series.

Table 1: Rabies positive animals by county, Kansas, 2018

County	Cow	Raccoon	Skunk	Total
Barber	0	0	1	1
Cheyenne	0	0	1	1
Greeley	0	0	1	1
Harvey	0	0	1	1
Leavenworth	0	0	1	1
Marion	0	1	1	2
Pottawatomie	1	0	0	1
Russell	0	0	1	1
Sedgwick	0	0	1	1

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- The management of animals exposed to rabies is based on vaccination status and species type of the animal exposed.** Significant changes in these recommendations were made by the National Association of State Public Health Veterinarians in 2016, which KDHE has adopted into regulation. Vaccination history will determine whether the animal needs to undergo a *45-day observation period* or *4- or 6-month quarantine (or euthanasia)*. Length of quarantine is species dependent (Table 2 – based off of the algorithm created by the Lawrence-Douglas County Health Department).

Table 2: Management of Animals Exposed to Rabies

Animal Vaccination Status	Animal Type	Recommendation		Updated Recommendation?	
Currently Vaccinated	Dog, Cat, Ferret, Horse, Cattle, Sheep	<ul style="list-style-type: none"> Booster (w/in 96 hours of exposure*) Observe 45 days 		No	
Overdue for Vaccination	Dog, Cat	With appropriate documentation	<ul style="list-style-type: none"> Booster (w/in 96 hours of exposure*) Observe 45 days 	Yes	
		Without appropriate documentation	<ul style="list-style-type: none"> Consult with KDHE (required) prior to booster w/in 96 hours of exposure* – Prospective Serological Monitoring – Animal in quarantine until results available OR	<i>Proper anamnestic response:</i> Observe 45 days	Yes
			<ul style="list-style-type: none"> Treat as never vaccinated 	<i>Inadequate anamnestic response:</i> 4-month quarantine	Yes
				4-month quarantine	
	Ferret, Horse, Cattle, Sheep	With appropriate documentation	<ul style="list-style-type: none"> Case by case basis Consult with KDHE 	Yes	
	Without appropriate documentation	<ul style="list-style-type: none"> Euthanize 6-month quarantine 	No		
Never Vaccinated	Dog, Cat	<ul style="list-style-type: none"> Euthanize OR Booster (w/in 96 hours of exposure*) 4-month quarantine 		Yes	
	Ferret, Horse, Cattle, Sheep	<ul style="list-style-type: none"> Euthanize OR 6-month quarantine 		No	

*If rabies booster vaccination is given >96 hours after exposure the observation OR quarantine period may be extended.

If an animal develops signs suggestive of rabies during the 45-day observation period or 4- or 6-month quarantine, it should be euthanized immediately and tested for rabies.

In 2017, KDHE began publishing rabies surveillance data on Kansas' Environmental Public Health Tracking website, which can be found at: <https://keap.kdhe.state.ks.us/Ephtm/PortalPages/ContentLanding> (click on "Environmental Exposures" then "Rabies Surveillance"). It provides interactive maps that display counties for which animals have been tested for rabies by test result and counties for which animals have tested positive for rabies by species. In addition, static graphs are available that show all animal rabies testing results by animal species.

For any questions about rabies investigation or our rabies interactive surveillance page, please call the KDHE Epidemiology Hotline at 1-877-427-7317.

Vaccine-Preventable Disease Surveillance Indicators

by Allison Zaldivar, MPH

The completeness and quality of specific surveillance indicators for vaccine-preventable diseases (VPDs) reported to the Kansas Department of Health and Environment (KDHE) from January 1 to March 31, 2018 can be found in the table below. As always, the bolded percentages represent the indicators that have less than 90% completion and the data presented in the chart is preliminary and subject to change.

Keep up the good work! All indicators surpassed the 90% completion goal this quarter.

A reminder—due to your hard work in completing these fields in EpiTrax, it has been decided that VPD surveillance indicators will be monitored and published on a quarterly basis. For questions regarding this data, please contact Allison Zaldivar at (785) 368-8208 or Allison.Zaldivar@ks.gov.

VPD Indicators Reported during Quarter 1 (January 1 to March 31, 2017) in Kansas

Indicators	<i>Haemophilus influenzae</i> , invasive	Mumps	Pertussis	<i>Streptococcus pneumoniae</i> , invasive	Varicella
Number of reported cases	3	1	36	69	47
% of cases with date of birth	100%	100%	100%	100%	100%
% of cases with gender	100%	100%	100%	100%	100%
% of cases with race	100%	100%	94%	100%	98%
% of cases with ethnicity	100%	100%	94%	97%	98%
% of cases with onset date[†]	100%	100%	97%	96%	100%
% of cases with hospitalized noted	100%	100%	97%	100%	100%
% of cases with died noted	100%	100%	97%	100%	100%
% of cases with vaccination status*	100%	100%	97%	100%§	96%
% of cases with transmission setting[¶]	N/A**	100%	100%	N/A**	98%
% of cases with completed symptom profiles	N/A**	100%	92%	N/A**	100%



UPDATE 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. For 2018, there have been some notable changes. I have now included four additional surveillance indicators; food handler, group living, health care worker, and daycare attendee or worker. These four fields are on the Epidemiological Tab in EpiTrax.

Additionally, I am no longer utilizing the fields 'Date LHD investigation started' or 'Date LHD investigation completed' to calculate the performance measures of disease control measures implemented or case investigation completed. Instead, I am calculating percent of cases that have the first interview attempted by the disease target and the percent of cases that have the interview completed by the disease target. Disease targets can be found in the table below. I hope that these performance measures will be more helpful in prioritizing case investigations.

For questions, contact Sheri Tubach at sheri.tubach@ks.gov

March 2018	State's Total Number of Cases* = 248	
EpiTrax Indicators		
EpiTrax Field	Number of Cases with Field Completed	Percent Completed
Address City	245	99
Address County	248	100
Address Zip	240	97
Date of Birth	245	99
Daycare attendee or worker†	121	49
Died	221	89
Ethnicity†	215	87
Food handler†	105	42
Group living†	194	78
Healthcare worker†	152	61
Hospitalized	225	91
Occupation	178	72
Onset Date	200	81
Pregnancy††	109	84
Race †	226	91
Sex †	247	100
Persons Interviewed	160	65
Persons Lost to Follow-Up	9	4
Persons Refused Interview	3	1
Persons Not Interviewed	76	31
	Number of Cases	Percent of Cases
Interview was attempted within the target for each disease [^]	109	60
Case investigations were completed within the target for each disease [^]	84	47

*Calculations do not include Hepatitis B - chronic, Hepatitis C - Chronic or acute, or Animal 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

[^] See the table below for interview attempt and completed case interview 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, post diarrheal; 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, chronic; 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: [\(Date LHD Investigation Started\)](#) OR [\(Call Attempt 1 date for Salmonellosis and STEC\)](#) - [\(Date Reported to Public Health\)](#) OR [\(Date Reported to KDHE\)](#)

****Completed Case Investigation:** Calculated by using EpiTrax fields: [\(Date LHD Investigation Completed\)](#) - [\(Date Reported to Public Health\)](#) OR [\(Date Reported to KDHE\)](#)

2018 Kansas Infectious Disease Conference

Plans are underway for the [2018 Kansas Infectious Disease Symposium](#) to be held May 10-11, 2018 at the Embassy Suites by Hilton Kansas City/Olathe Hotel & Conference Center in Olathe, Kan.

Nearly 300 public health leaders, first responders, law enforcement and health care providers from around the region are expected to attend and learn how infectious diseases are contained and managed in the state of Kansas and the Midwest. The Kansas Department of Health and Environment will offer pre-conference surveillance training on May 9.

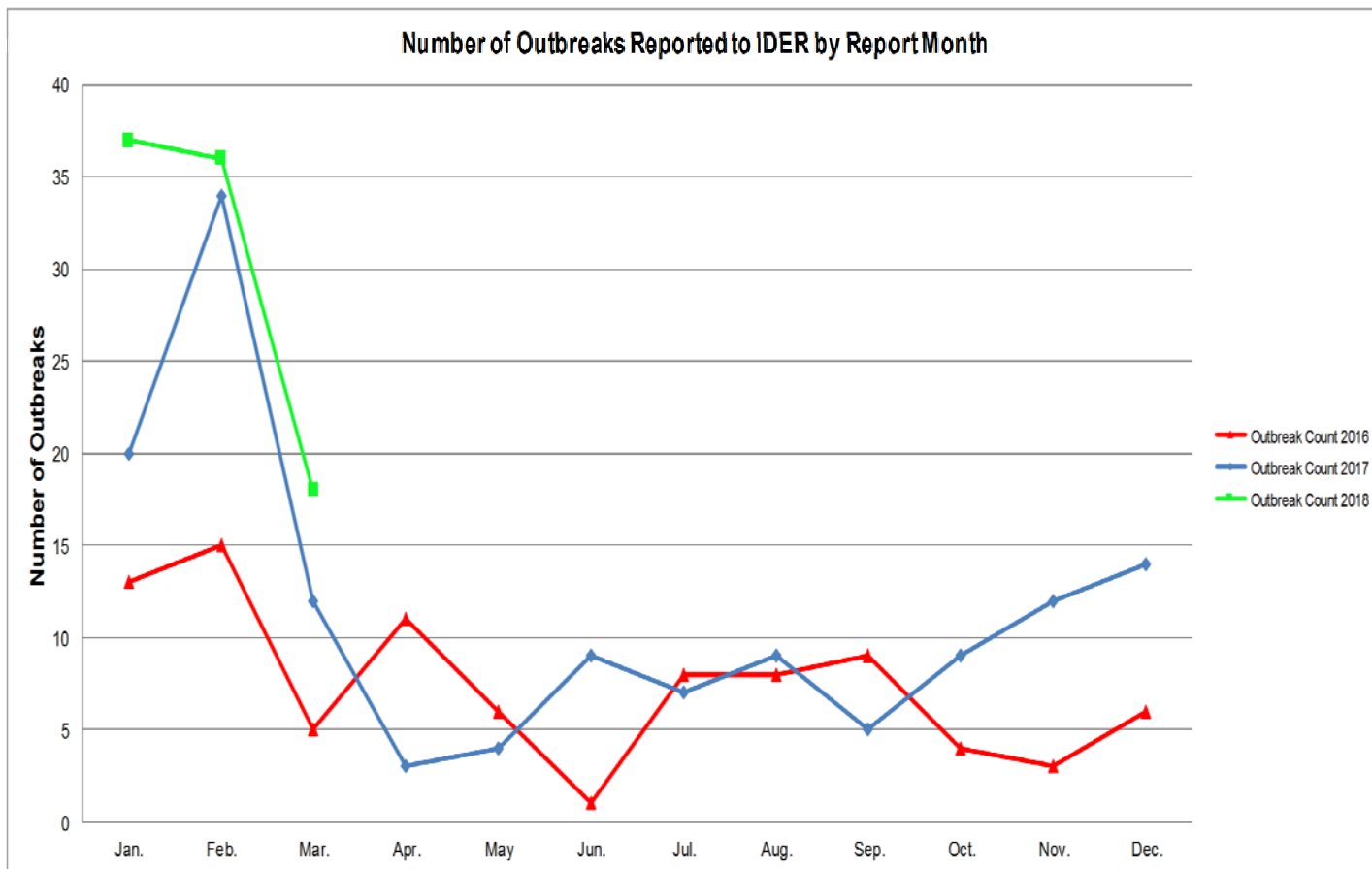


If you're interested in exhibiting or being a sponsor at next year's conference, contact Tiffany Wallin at 913-826-1252 or send an email to Tiffany.Wallin@jocogov.org. Registration for this event has begun on Kansas TRAIN.

Monthly Disease Counts

Please refer to the Cumulative Case Reports of Diseases (http://www.kdheks.gov/epi/case_reports_by_county.htm) for current case count information.

Outbreaks Report



Date Reported	Facility Type	Transmission/Exposure	Disease/Condition	County
3/1/2018	Adult care facility	Person-to-person	Influenza	Marion
3/1/2018	Restaurant	Food	Unknown Etiology	Saline
3/1/2018	Adult care facility	Person-to-person	Norovirus	Sedgwick
3/1/2018	Other	Food	Salmonellosis	Multiple Counties
3/2/2018	Adult care facility	Person-to-person	Influenza	Wyandotte
3/7/2018	Restaurant	Food	Unknown Etiology	Cowley
3/7/2018	Restaurant	Food	Unknown Etiology	Johnson
3/8/2018	Restaurant	Food	Unknown Etiology	Johnson
3/9/2018	Multiple Settings	Person-to-person	Measles (rubeola)	Multiple Counties
3/11/2018	Adult care facility	Person-to-person	Influenza	Marion
3/15/2018	Restaurant	Food	Unknown Etiology	Johnson
3/16/2018	Child care center	Person-to-person	Shigellosis	Shawnee
3/21/2018	Adult care facility	Person-to-person	Unknown Etiology	Barton
3/22/2018	Hotel or motel	Person-to-person	Unknown Etiology	Douglas
3/23/2018	Restaurant	Food	Unknown Etiology	Johnson
3/28/2018	Adult care facility	Person-to-person	Influenza	Saline
3/29/2018	Restaurant	Indeterminate/Other/Unknown	Salmonellosis	Montgomery
3/30/2018	Restaurant	Person-to-person	Unknown Etiology	Barber