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Kansas Department of Health and Environment

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Campylobacter Illnesses and Outbreaks Associated with the Consumption of Nonpasteurized Dairy Products in Kansas

By Sheri Tubach

Unpasteurized milk, commonly referred to as raw milk, may contain pathogens such as *Salmonella*, *Listeria monocytogenes*, *Campylobacter*, and Shiga-toxin producing *Escherichia coli*, which if ingested can lead to serious illness. According to the Centers for Disease Control and Prevention (CDC), from 1998 through 2011, 148 outbreaks due to consumption of raw milk or raw milk products were reported. These outbreaks caused 2,384 illnesses, 284 hospitalizations, and two deaths. Most of these illnesses were caused by Shiga-toxin *E. coli, Campylobacter*, *Salmonella,* and *Listeria*.[i] In Kansas from 2002-2012, four outbreaks affecting 148 individuals were investigated: all associated with the consumption of raw milk or products made with raw milk, and all caused by *Campylobacter*. In addition, sporadic cases of *Campylobacter* are common in Kansas; among those reported in 2012 and 2013, 26 reported consumption of raw milk or cheese.

Campylobacteriosis is the most common bacterial cause of diarrheal illness with an estimated 2.4 million persons affected each year. *Campylobacter* is a gram-negative, microaerophilic bacterium that can cause disease in humans and animals. Symptoms that are commonly reported are diarrhea (which is often bloody), abdominal cramps, and fever. The incubation period ranges from two to five days, and symptoms typically last one week. A serious but rare complication of campylobacteriosis is Guillain-Barré syndrome (GBS). GBS affects the nerves in the body, and approximately one in every 1,000 reported Campylobacter illnesses develops GBS.

According to another recent CDC study, the rate of raw-milk-associated outbreaks was higher in states where the sale of raw milk is legal, compared to the rate in states where the sale of raw milk is illegal.[ii]

In Kansas, dairies may only sell raw milk on the farm. The transaction must be on the farm, and it must be between the dairyman and the consumer. Advertising raw milk sales is prohibited except on the farm premises. The milk container must be labeled as "raw" or "unpasteurized-ungraded" milk.

According to a recent policy statement form the American Academy of Pediatrics (AAP) published in *Pediatrics*, the AAP specifically advises pregnant women, infants, and children to consume only pasteurized milk and milk products and also endorses a ban on the sale of raw or unpasteurized milk and milk products in the United States.[iii]

i. Centers for Disease Control and Prevention. *Raw (Unpasteurized) Milk*. Feb 2013. Available at http://www.cdc.gov/Features/RawMilk/.

ii. Centers for Disease Control and Prevention. *Majority of Dairy-Related Disease Outbreaks Linked to Raw Milk*. February 2012. Available at http://www.cdc.gov/media/releases/2012/p0221_raw_milk_outbreak.html.

iii. Maldonado, Y A, Glode, M P, Bhatia, J. Consumption of Raw or Unpasteurized Milk and Milk Products by Pregnant Women and Children. *Pediatrics.* 2014 133(1): 175-179.

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

Selected Diseases:

Disease	Case Classification Criteria
Hepatitis A	confirmed
Salmonellosis	confirmed, excluding typhoid fever
E. coli, 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:

(Lab Test Date or Date Diagnosed – Presumptive) – (Date Reported to Public Health) ≤ 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:

(Date LHD Investigation Started) – (Date Reported to Public Health) ≤ CDC-required timeframe

Disease Reporting

Disease	KDHE Required Timeframe	Statewide Received	Statewide Received On Time	%	% Change from Previous Month
Hepatitis A	7 days	8	8	100	0
Salmonellosis	7 days	208	204	98	0
E. coli, STEC	7 days	41	39	95	+1
Shigellosis	7 days	19	19	100	0
Tularemia	7 days	14	13	93	+1
Varicella	7 days	147	141	96	-1
Botulism	4 hours*	-	-	-	-
Measles	4 hours*	-	-	-	-
Meningococcal disease	4 hours*	-	-	-	-
Pertussis	4 hours*	108	87	81	NA

*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."

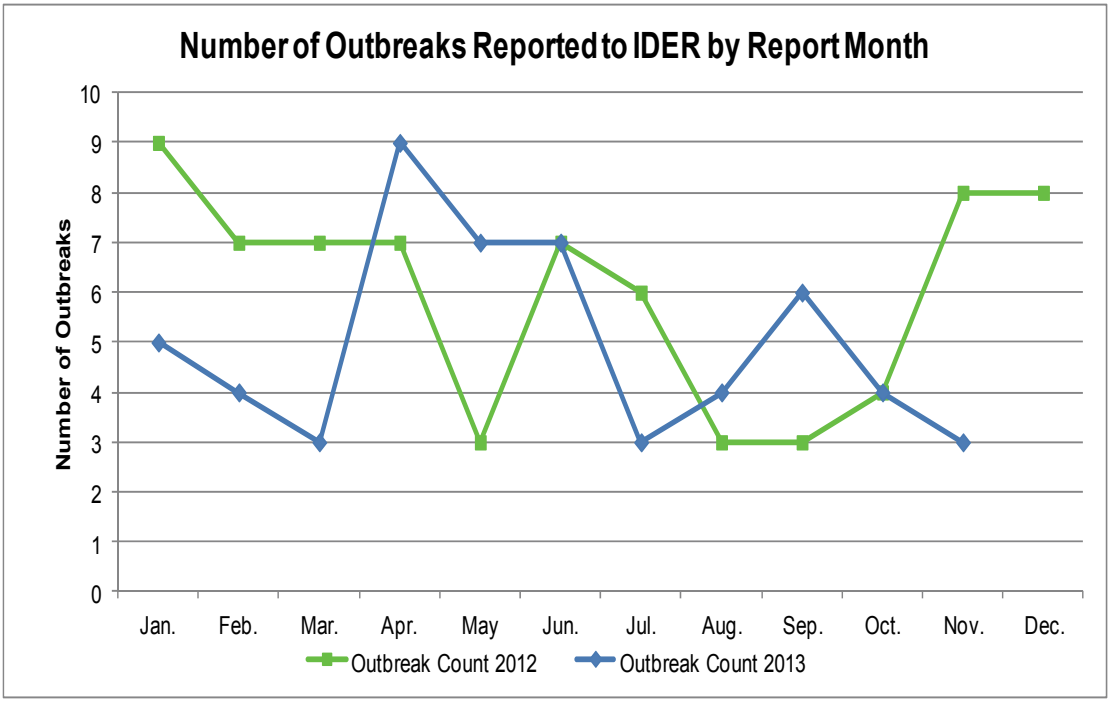
(Continued on page 3)

Disease Control

Disease	CDC Required Timeframe	Statewide Received	Statewide Investigated On-time	%	% Change from Previous Month
Hepatitis A	7 days	8	8	100	0
Salmonellosis	3 days	208	164	79	-3
E. coli, STEC	3 days	41	26	63	+2
Shigellosis	3 days*	19	13	68	0
Tularemia	2 days	14	13	93	+1
Varicella	1 day*	147	129	88	+1
Botulism	1 day	-	-	-	-
Measles	1 day	-	-	-	-
Meningococcal disease	1 day	-	-	-	-
Pertussis	1 day*	108	98	98	na

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

Monthly Outbreak Summaries



Facility Type	Organism	Transmission	County	Date Reported
	Salmonellosis	Food	Multi-state	11/12/2013
Hospital	Outbreak Case - Unknown Etiology	Indeterminate/Other/ Unknown	Johnson County	11/25/2013
School or College	Pertussis	Person-to-Person	Sedgwick County	11/26/2013

Vaccine-Preventable Disease Surveillance Indicators

by Chelsea Raybern, 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 November 1 to November 30, 2013, can be found in the table below. The bolded percentages represent the indicators that have less than 90% completion. The case counts presented in this report are preliminary numbers and are subject to change.

Keep up the good work! The indicators date of birth, gender, race, hospitalization, and death were completed for at least 93% of all VPDs reported from November 1 to November 30, 2013. All the indicators were complete for the one mumps case. All but three indicators (vaccination status, transmission setting, and completed investigations) were at least 93% complete for varicella cases. The completeness of six indicators (date of birth, gender, ethnicity, death, transmission setting, and completed investigations) for pertussis cases have improved when compared to last month's data. The percentages highlighted in red represent improvement.

Still room for improvement…Percent of completed investigations was much lower than 90% for more than half of the diseases (pertussis, *Streptococcus pneumoniae*, and varicella) reported in November. Transmission setting was completed for only 86% of pertussis cases and 68% of varicella cases. Three indicators (ethnicity, onset date, and vaccination status) were not completed for the one *Haemophilus influenzae* case.

Please continue to focus on completing these fields in EpiTrax for all VPDs as the goal is to reach 90% or higher completion on all indicators. For questions regarding this data, please contact Chelsea Raybern at (785) 296-0339 or craybern@kdheks.gov.

VPD Indicators Reported from November 1 to November 30, 2013 in Kansas†

Indicators	*Haemophilus influenzae,* invasive	Mumps	Pertussis	*Streptococcus pneumoniae,* invasive	Varicella
Number of reported cases	1	1	95	14	28
% 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%	93%	100%	93%
% of cases with ethnicity	**0%**	100%	92%	**86%**	96%
% of cases with onset date‡	**0%**	100%	**88%**	**86%**	93%
% of cases with hospitalized noted	100%	100%	93%	93%	93%
% of cases with died noted	100%	100%	98%	93%	93%
% of cases with vaccination status**	**0%**	100%	**88%**	93%*	**89%**
% of cases with transmission setting§§	N/A§	100%	**86%**	N/A§	**68%**
% of investigations completed by local health departments¶	100%	100%	**82%**	**79%**	**79%**

*†Indicator regarding median (range) number of days from report to case acceptance is not included in this quarterly report due to some discrepancies that occurred during data extraction. This problem is being addressed.

* Indicator considered complete if either polysaccharide or conjugate pneumococcal vaccine history is documented.

§ Indicator field not included in supplemental disease form

¶ Status includes when local health department completes investigation, approves the case, or when the case is closed by the State.

‡ Data is pulled from onset date field within the clinical tab, not investigation tab.

**Unknown is considered a valid response if patient is older than 18 years.

§§ Unknown is considered a valid response for this indicator.

Updated Disease Investigation Guidelines for Pertussis

By Jena Callen-Scholz

CDC guidelines for the control of pertussis have recently been updated. Due to this update, KDHE has also updated its recommendations for pertussis investigations. CDC and KDHE support targeting Post-exposure Antimicrobial Prophylaxis (PEP) to persons at high risk of developing severe disease and those who will have close contact with persons at high risk of developing severe pertussis. Therefore, CDC and KDHE no longer recommend PEP for every close contact of a pertussis case.

PEP is now recommended for the following contacts:

1.) All household contacts

2.) Persons within 21 days of exposure to an infectious pertussis case who are at a high risk of severe illness

These include:

- Women in their 3rd trimester of pregnancy
- All persons with pre-existing health conditions that may be exacerbated by a pertussis infection (for example, but not limited to, immunocompromised persons and patients with moderate to severe medically treated asthma)
- Infants <1 year old
- All contacts in high risk settings that include infants <1 year of age or women in the 3rd trimester of pregnancy (for example, but not limited to, neonatal intensive care units, childcare settings, and maternity wards)
- Contacts who themselves have close contact with either infants <1 year old, pregnant women, or individuals with pre-existing health conditions at risk for severe illness or complications

Continual screening for symptomatic patients with suspected pertussis is recommended during outbreaks in settings such as hospitals, schools, and daycares. This potentially reduces exposure to persons with pertussis, encourages timely treatment of cases, and promotes administration of antibiotics to high risk close contacts.

KDHE's updated disease investigation guideline (DIG) for pertussis can be found online at http://www.kdheks.gov/epi/Investigation Guidelines/Pertussis Disease Investigation Guideline.pdf.

Local health department disease investigators should note that the DIG also discusses the necessity of entering contacts identified under the "Contacts" tab in EpiTrax. Enter each identified:

- Household contact
- High-risk contact
- Under-immunized contact

Refer to the "Data Management" section in the DIG for more guidance.

If you have questions regarding PEP for pertussis, please contact your local health department or the KDHE, Bureau of Epidemiology and Public Health Informatics at 877-427-7317.

	Reported Disease Counts November 2013						
	Not Available	Confirmed	Not a Case	Probable	Suspect	Grand Total	3 year Avg. 2010-2012
Disease	**Count**	**Count**	**Count**	**Count**	**Count**	**Count**	
Amebiasis (*Entamoeba histolytica*)	0	0	1	0	0	**1**	**0**
Anaplasma phagocytophilum (f. HGE)	0	0	0	1	0	**1**	**0**
Campylobacteriosis	15	8	0	0	13	**36**	**14**
Cryptosporidiosis	0	3	0	5	0	**8**	**12**
Ehrlichiosis, *Ehrlichia chaffeensis* (f. HME)	1	0	0	2	0	**3**	**1**
Giardiasis	1	4	0	0	0	**5**	**17**
HUS - Hemolytic Uremic Syndrome postdiarrheal	1	0	0	0	0	**1**	**2**
Haemophilus influenzae, invasive disease (Including Hib)	1	0	0	0	0	**1**	**3**
Hepatitis A	1	0	2	0	0	**3**	**50**
Hepatitis B virus infection, chronic	12	0	17	10	0	**39**	**41**
Hepatitis B, acute	0	0	3	2	0	**5**	**7**
Hepatitis C virus, past or present	84	32	24	1	4	**145**	**151**
Hepatitis E, acute	0	0	1	0	0	**1**	**0**
Legionellosis	2	0	0	0	0	**2**	**3**
Lyme Disease (*Borrelia burgdorferi*)	23	0	13	2	0	**38**	**8**
Malaria (*Plasmodium* spp.)	0	1	0	0	0	**1**	**2**
Meningitis, Bacterial Other	2	0	0	0	0	**2**	**3**
Meningococcal disease (*Neisseria meningitidis*)	0	0	1	0	0	**1**	**1**
Mumps	2	0	5	0	1	**8**	**3**
Pertussis	40	37	9	19	2	**107**	**114**
Q Fever (*Coxiella burnetti*), Acute	3	0	0	0	0	**3**	**1**
Rabies, animal	3	4	1	0	1	**9**	**6**
Rubella	0	0	0	0	1	**1**	**2**
Salmonellosis	0	29	0	0	0	**29**	**32**
Shiga toxin-producing *Escherichia coli* (STEC)	0	5	1	0	2	**8**	**12**
Spotted Fever Rickettsiosis (RMSF)	7	0	5	2	0	**14**	**11**
Streptococcal disease, invasive, Group A	0	1	0	0	0	**1**	**2**
Streptococcus pneumoniae, invasive disease	3	10	0	0	1	**14**	**19**
Tularemia (*Francisella tularensis*)	1	0	0	1	0	**2**	**1**
Varicella (Chickenpox)	8	4	13	15	2	**42**	**53**
West Nile virus non-neuroinvasive disease	2	0	9	1	0	**12**	**6**
Grand Total	**212**	**138**	**105**	**61**	**27**	**543**	**575**