



EPI UPDATES



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Gastroenteritis Outbreak Associated with a Restaurant – Shawnee County, January 2012

Background

On the morning of January 24, 2012, the Kansas Department of Agriculture (KDA) received a foodborne illness complaint. The complainant became ill with gastrointestinal symptoms after dining at a Shawnee County restaurant on January 20, and was aware of others who experienced symptoms after eating there. The Infectious Disease Epidemiology and Response (IDER) section at the Kansas Department of Health and Environment (KDHE) was notified of the complaint at 9:20 a.m. Shortly after this complaint was received, IDER was made aware of a group of KDHE employees who also reported illness after eating at the restaurant on January 20. IDER notified the Shawnee County Health Department of these circumstances, and chose to lead the investigation rather than the local health department. By 10:38 a.m.,

a questionnaire was emailed to the complainant and the affected KDHE employees.

Methods

A questionnaire was developed and distributed via email to obtain demographic information, symptom history, and food history for those who ate at the restaurant. IDER interviewed individuals without a known email address by telephone. A case was defined as any individual experiencing vomiting and/or diarrhea (three or more loose stools in a 24-hour period) within 48 hours of eating at the Shawnee County restaurant on January 20, 2012, between 11 a.m. and 1 p.m. An inspection of the restaurant was conducted by KDA on January 24, 2012, at 10:50 a.m. Employee surveys were distributed to identify ill food handlers and their specific food handling duties.

Results

During the course of the investigation, five groups who reported beginning lunch at the restaurant between 11:30 a.m. and 12:15 p.m. on January 20 were identified; four groups agreed to answer questions regarding the possible outbreak. All three individuals from group A were interviewed, and all met the case definition. Nine of 11 individuals from group B completed a questionnaire; five met the case definition. Four of five individuals from group C completed a questionnaire, and two met the case definition. Group D consisted of two individuals, both of whom were interviewed and met the case definition. All of the individuals resided in separate households. All were residents of Shawnee County.

The ages of the 12 cases

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CALENDAR OF UPCOMING EVENTS:

2012 Governor's Public Health Conference

When: April 23-25, 2012

Where: Wichita Marriott

Theme: "Challenges of Change: Developing an Equitable Public Health System"

Details: For more information visit <http://webs.wichita.edu/?u=conferences&p=/publichealth/>

EpiTrax Go Live:

The new infectious disease tracking system, EpiTrax powered by TriSano, will replace KS-EDSS on March 5, 2012. Local users will be sent their login instructions by county throughout the day. Please bear with us as we make this transition. If you have any questions, please contact Susan Dickman at

(785) 296-7732 or epitraxadmin@kdheks.gov

Have an upcoming event you would like included in the next issue?

Contact vbarnes@kdheks.gov with details.

ranged from 25 to 59 years (median age, 50 years). Six cases were male.

Vomiting and diarrhea were the most commonly reported symptoms. Cases also reported nausea, muscle aches, chills, abdominal pain, and fever (Table 1).

Symptom	# with Symptom (%)
Vomiting	11/12 (92%)
Diarrhea	11/12 (92%)
Nausea	9/12 (75%)
Muscle Aches	8/12 (67%)
Chills	7/12 (58%)
Abdominal Pain	6/12 (50%)
Fever	6/12 (50%)

The illness incubation time was very similar for all 12 cases, ranging from 28.5 to 33 hours. The median incubation period was 31 hours (Figure 1). The duration of illness was reported for all cases, and ranged from four to 97 hours (median length, 47 hours).

No physician visits were reported. Stool specimen testing was offered to those who completed a questionnaire or were interviewed, but no one elected to submit a specimen.

All individuals consumed water or fountain drinks with ice, chips and

salsa, and an entrée. No single menu item was statistically implicated as the source of illness. Combining menu items by common ingredients (e.g. ground beef) also failed to implicate a food as the cause of illness.

The restaurant inspection by KDA revealed six critical violations: an employee chewing gum in the kitchen, inadequate cooling time and temperature for shredded chicken, improper cold holding for two trays of salsa cups, lack of date marking on containers of rice and shredded beef, storage of heating fuel above an open container of food, and a leaking kitchen faucet. A follow-up inspection was conducted February 3. Three critical violations were observed: inadequate cooling time and temperature for pinto beans, improper cold holding for raw ground beef, and lack of date marking on pans of pinto beans and ground beef.

Seven employee surveys were returned to KDHE — no gastrointestinal illness was reported among these employees from January 13 through January 24. It is not known how many employees were working at the restaurant at the time the affected groups ate on January 20.

Conclusions

No definitive diagnosis was obtained for the 12 cases; however, the symptoms, incubation time, and duration of illness was suggestive of

norovirus infection. Although the restaurant was associated with illness, neither the etiology of the outbreak nor the vehicle of transmission could be confirmed.

Norovirus is a highly contagious pathogen with a very low infectious dose, estimated to be between 10-100 viral particles.¹ Transmitted primarily through the fecal-oral route, norovirus particles may be spread through direct contact or through consuming fecally-contaminated food or water. Spread via aerosolized vomitus is also possible. Once infected, norovirus shedding can begin prior to the onset of symptoms and can persist for weeks after clinical symptoms have ceased. Norovirus has been detected in fecal specimens 3 to 14 hours before the onset of clinical symptoms and could be detected for 13 to 56 days after exposure to the virus.² Approximately 20% of norovirus infected individuals do not have clinical symptoms.³ However, these individuals can still shed norovirus and can be potential sources of contamination.

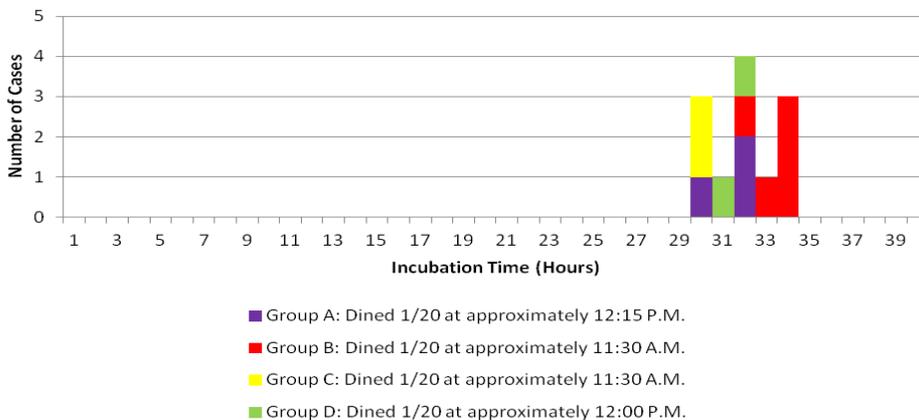
Investigations of foodborne norovirus outbreaks have implicated multiple food items, including oysters, salads, sandwiches, cakes, frosting, raspberries, drinking water, ice, and other food items that were contaminated after cooking or that were ready to eat.⁴

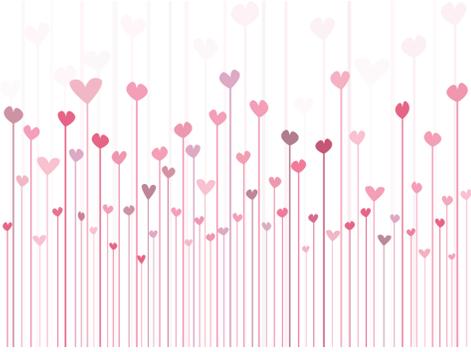
The restaurant inspection occurred in a timely manner and education was provided to the manager and employees on proper cooling procedures, date marking, and corrective actions.

The investigation could have been assisted by the collection of stool specimens. Specimen kits were immediately available and offered to the cases, but they declined to be tested. More extensive case finding, such as the use of credit card receipts to identify additional individuals who dined at the restaurant, could have been useful in determining the full extent of the outbreak. More interviewed

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Figure 1: Illness incubation time of gastrointestinal illness cases associated with January 20, 2012 lunches at a Shawnee County restaurant, by group (n=12)





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individuals, in addition to more detailed questions about which employees served each group, may have allowed investigators to determine if illnesses were linked to a food item or an employee.

Report by: Daniel Neises, MPH
(Kansas Department of Health and Environment)
On: January 31, 2012

Investigation by:

**Kansas Department of Agriculture
Division of Food Safety and Lodging**

109 SW 9th Street, 3rd Floor
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http://www.ksda.gov/food_safety/

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1. Teunis PFM, Moe CL, Liu P, et al. Norwalk virus: how infectious is it? *J Med Virol* **2008**; 80:1468-76.
2. Atmar RL, Opekum AR, Gilger MA, et al. Norwalk virus shedding after experimental human infection. *Emerg Infect Dis* **2008**; 14:1553-1557.
3. Moe CL. Preventing norovirus transmission: How should we handle food handlers? *Clin Infect Dis* **2009**; 48:38-40.
4. CDC. Norwalk-like viruses, Public health consequences and outbreak management. *MMWR* **2001**; 50 (RR09):1-18.

County Rabies Vaccination Laws in Kansas

By Chelsea Raybern, MPH

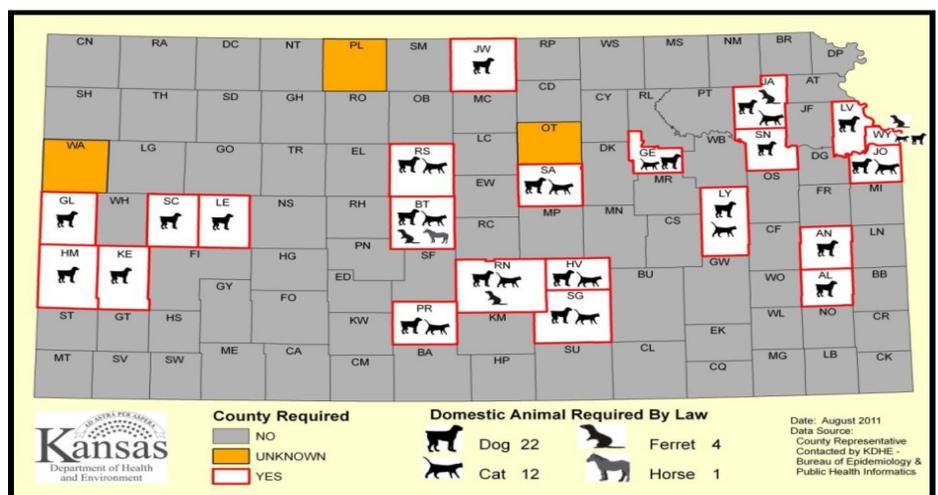
Rabies is endemic in Kansas, with approximately 78 animals testing positive for rabies each year in the years 2006-2010. Currently, 38 states have a rabies vaccination law, but Kansas is not one of them. There are roughly 350 cities in Kansas that have a municipal court and those cities are likely to have a rabies vaccination requirement, but the ordinances do not apply to animals that live outside of city limits. County laws apply to those cities without an ordinance as well as animals that live outside city limits.

An Animal Rabies Vaccination Survey was sent to all 105 county health department administrators in Kansas via e-mail to determine which Kansas counties have a rabies vaccination law. The survey consisted of 27 questions regarding county-level information on rabies vaccination laws, tracking of animal vaccination status, licensing of animals, notification of suspect rabid animals, animal bite reporting, etc. If the surveys were not completed by the deadline, other county agencies including county

clerks, sheriff departments, extension offices, and county attorneys were contacted to determine if a particular county had a rabies vaccination law. Of the 105 counties in Kansas, there are 22 (21%) counties that have a rabies vaccination law, 80 (76.2%) that do not have a law and 3 (2.8%) are unknown. Of the 22 counties that have a rabies vaccination law, 10 (45.5%) require vaccination of dogs only, 8 (36.4%) require vaccination of dogs and cats, 3 (13.6%) require vaccination of dogs, cats and ferrets, and 1 (4.5%) county law requires vaccination of dogs, cats, ferrets, and horses.

For any updates to these county rabies vaccination requirements or questions please email Chelsea Raybern at craybern@kdheks.gov. Stay tuned for next month's newsletter on the analysis of the relationship between counties with a rabies vaccination law and those without laws.

Figure 1: Rabies Vaccination Requirement by County, 2011.





MONTHLY OUTBREAK SUMMARIES



Finney County Measles Outbreak – On January 10, 2012, two cases of suspected measles were reported to Finney County Health Department (FCHD) and to the Kansas Department of Health and Environment (KDHE). FCHD began an outbreak investigation, with assistance from KDHE, to determine any susceptible contacts, identify any additional cases, provide recom-

mendations for exposed contacts, and prevent further transmission of the illness. Both cases had documented international travel, and likely contracted measles abroad. In addition to the two initial cases there have been four secondary cases, for a total of six confirmed cases. All cases of measles have had documented contact to the two initially identified cases. Genotyping of

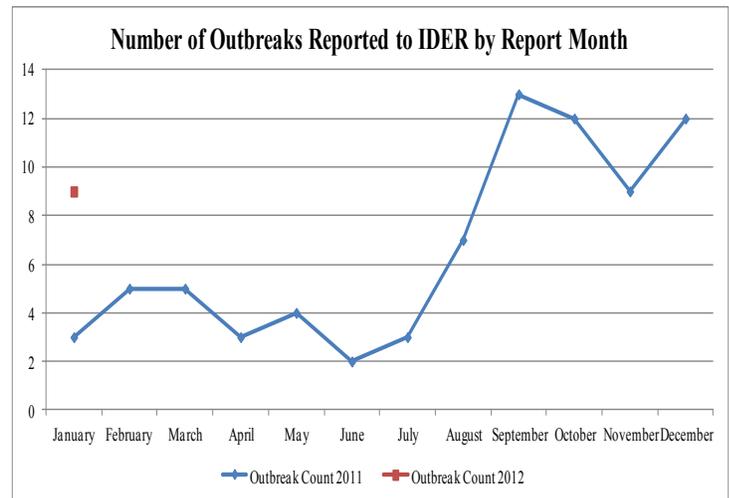
the virus from each case found an identical strain of measles consistent with endemic measles from the region of travel. No additional cases have been reported since January 23, 2012. Surveillance and monitoring is ongoing to make certain that the outbreak is over. Measles is highly preventable with two doses of MMR vaccine. –RG

For reports of recently conducted outbreak investigations, please visit our website at <http://www.kdheks.gov/epi/outbreaks.htm>
To report an outbreak call the Epi Hotline at 1-877-427-7317

KDHE Involved in Multi-State Outbreak

The Kansas Department of Health and Environment (KDHE) are investigating a cluster of *Escherichia coli* O26. The Kansas Health and Environmental Laboratories analyzed isolates submitted and determined that two of the isolates had matching DNA patterns and were unique to Kansas. The Centers for Disease Control and Prevention (CDC) determined that there

were matches to this cluster in Iowa, Missouri and Wisconsin. As of February 9, 2012 there are 9 cases that match this cluster. Currently KDHE is working with the CDC, the U.S. Food and Drug Administration and the other states that have cases to determine the source of this outbreak.



Breakdown of the 585 Cases* in KS-EDSS by Disease	January 2012	Average 09-11
Animal Bite, Potential Rabies Exposure	3	2
Calicivirus/Norwalk-like virus (Norovirus)	5	3
Campylobacter Infection (Campylobacter spp.)	32	34
Cryptosporidiosis (Cryptosporidium parvum)	8	4
Ehrlichiosis; Ehrlichia chaffeensis	1	0
Enterohemorrhagic Eschericia coli shiga toxin positive (not serogrouped)	5	2
Enterohemorrhagic Eschericia coli shiga toxin positive (serogrouped non-0157)	3	2
Giardiasis (Giardia lamblia)	18	14
Haemophilus influenza; invasive	2	3
Hepatitis A	37	30
Hepatitis B, acute	7	17
Hepatitis B, chronic	48	38
Hepatitis C virus infection; past or present	187	155
Hepatitis C; acute	1	0
Hepatitis D	1	0
Legionellosis	1	1
Lyme Disease (Borrelia burgdorferi)	14	8
Measles (Rubeola)	19	0
Meningitis, other bacterial	4	1
Meningococcal Disease (Neisseria meningitidis)	1	1
Mumps	5	6
Pertussis (Bordetella pertussis)(Whooping cough)	56	36
Q-Fever (Coxiella burnetti); Acute	1	0
Rabies; Animal	5	6
Salmonellosis (Salmonella spp.)	36	19
Shigellosis (Shigella spp.)	15	14
Spotted Fever Rickettsiosis (RMSF)	7	3
Streptococcal Disease; Invasive, Group A (Streptococcus pyogenes)	2	3
Streptococcus pneumoniae; invasive	17	10
Transmissible Spongiform Enceph (TSE/CJD)	3	2
Typhoid Fever (Salmonella typhi)	1	0
Varicella (Chickenpox)	53	55
West Nile; non-neurological (Includes WN Fever)	2	1

** Cases reported include cases with the case classifications of Confirmed, Probable, Suspect, and Not a Case.*

KS-EDSS DATA QUALITY INDICATORS

Please visit us at:
www.kdheks.gov/epi



KDHE BEPHI emailed local health department users and administrators their county level quality indicator data this month. The Bioterrorism Regional Coordinators also received a copy of the regional breakdown of the quality indicators. At this time the report includes the county’s preliminary data for the previous month. Once EpiTrax replaces KS-EDSS, we hope to revisit this quality indicator report and determine what changes and improvements can be made. We also expect to add a second report that will compare preliminary month data with final data to provide more detailed information to users that cannot be determined by the current report. Please email vbarnes@kdheks.gov if you received an incorrect report, have questions, or believe you should have received a report but did not. Fields in **bold blue** have improved since the previous month. Frequency of completion has declined in *italic brown* fields. All other fields in have not changed since the previous month.- Virginia Barnes

- *Calculations do not include Hepatitis B, chronic or Hepatitis C, chronic (denominator: 350 cases).
- ** Out-of-state cases not included in this calculation.
- # Animal rabies not included in this calculation (den: 580 cases).
- † Unknown considered incomplete.
- †† Only diseases with supplemental forms included in this calculation

JANUARY 2012		State's Total Case = 585
KS-EDSS Indicator	Field Completed:	Percent Complete:
Address Street	515	88% ** , #
Address City	583	100% **
Address County	585	100% **
Address Zip	573	98% **
Date of Birth	580	99% #
Died	335	57% †
<i>Ethnicity</i>	<i>371</i>	<i>63% , #, †</i>
Hospitalized	321	55% , #, †
Imported	184	31%
<i>Onset Date</i>	<i>185</i>	<i>35% *, #</i>
<i>Race</i>	<i>399</i>	<i>68% , #, †</i>
Sex	585	100% , #, †
Supplemental Form Complete	230	60% ††
Supplemental Form Partial	153	40% ††

KDHE Mission:

To Protect and Improve the Health and Environment of all Kansans

Our Vision

Healthy Kansans living in safe and sustainable environments.