

**Acute Gastroenteritis Outbreak Associated with a Catered Lunch—Shawnee  
County, February 2008**



Investigation by:

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## **Background**

On March 3, 2008, the Kansas Department of Health and Environment's Bureau of Consumer Health (KDHE-BCH) notified KDHE's Office of Surveillance and Epidemiology (KDHE-OSE) of a possible foodborne illness outbreak. The complainant, an individual employed in Shawnee County, stated that 15 coworkers experienced gastrointestinal illness after eating sandwiches catered by Jersey Mike's Subs (2121 SW Wanamaker Rd, Suite 115, Topeka, KS) on February 27. KDHE-OSE and the Shawnee County Health Agency initiated an outbreak investigation to determine the source of the illness and to ensure appropriate control and prevention measures were implemented.

## **Methods**

### *Epidemiologic*

A cohort study was conducted on the coworkers that attended the February 27<sup>th</sup> lunch. A self-administered questionnaire, focusing on clinical information and food exposure, was developed and distributed to the coworkers. Catering receipts from February 25 through March 1 were obtained from Jersey Mike's to determine if illness occurred among other restaurant patrons.

No stool specimens were collected from ill individuals; all of the complainants had recovered prior to notifying KDHE, and none were willing to provide a specimen. No food samples were available for testing, because all of the food served at the February 27 lunch was consumed that day.

### *Environmental*

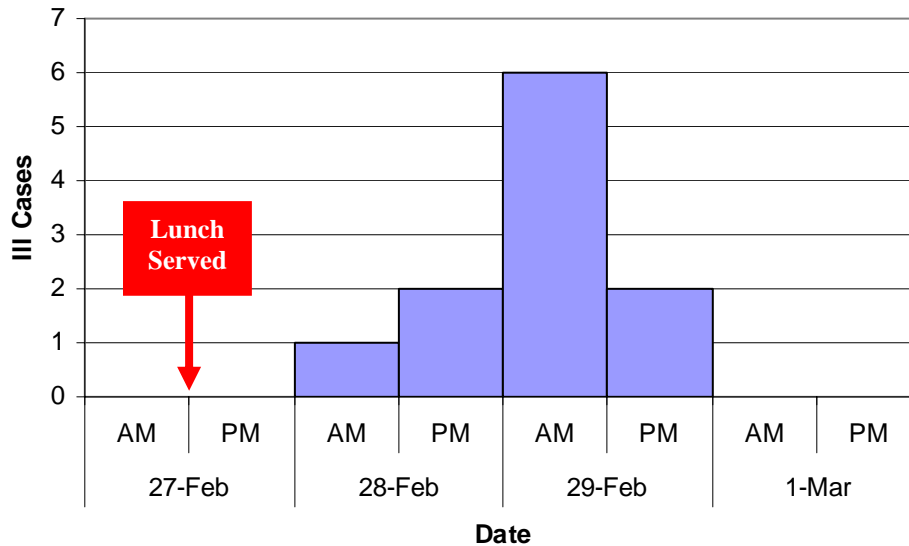
An inspection of the restaurant was conducted on March 6, 2008 by KDHE-BCH. In addition, a self-administered questionnaire was distributed to all restaurant employees. For each day between February 23 and February 29, each foodworker was asked to list any symptoms he or she had experienced, as well as hours worked and duties performed.

## **Results**

### *Epidemiologic*

A case was defined as an individual who became ill with vomiting and/or diarrhea after eating food served at the February 27 lunch. While 14 of the 15 individuals (93%) reported some kind of illness, only eleven (73%) met the case definition. The median age of the cases was 45 years. Non-bloody diarrhea (91%), stomach ache (82%), muscle aches (82%), nausea (73%), and vomiting (55%) were the most frequently reported symptoms. The incubation period ranged from 17.5 to 59.5 hours (median = 37 hours, see Figure 1). Duration of illness ranged from 13 to 126 hours (median = 41.75 hours). None of those surveyed reported visiting a healthcare provider.

**Figure 1: Illness onset among cases by date (n=11)**



Two food items were served at the lunch: turkey sandwiches with lettuce and tomato, catered by Jersey Mike’s Subs; and grapes purchased from a grocery store. Individuals supplied their own drinks. Eight of the eleven cases (73%) reported eating grapes, but the relative risk of illness associated with eating grapes was not statistically significant. Everyone, including all cases, reported consuming a sandwich. (The lone individual that did not become ill reported eating only half of a sandwich, while the others ate an entire sandwich.) As a result, the relative risk of illness associated with eating the sandwiches was undefined.

Six catering receipts were obtained; of these, four included a customer’s contact information. Three of the four customers were contacted. No individuals reported illness.

*Environmental*

One critical violation, for use of an unapproved oven cleaning agent, was observed during the inspection. No restaurant employees reported any significant symptoms during the time period in question.

**Discussion**

The epidemiologic and clinical data collected during this investigation are consistent with a point-source outbreak of norovirus. With no clinical or food specimens available for laboratory testing, KDHE was unable to confirm norovirus as the cause of gastroenteritis. Catered turkey sandwiches served with lettuce and tomato were the only food identified as a possible cause of illness.

Norovirus is the leading cause of foodborne illness in the United States; an estimated 23 million people are infected with norovirus every year—40% of these infections may be foodborne.<sup>1</sup> Onset of diarrhea and vomiting are common 12-48 hours after infection, and may last from 12 to 60 hours. Vomiting is more prevalent in children than adults. The disease is transmitted through fecal-oral routes; historically, norovirus outbreaks have been associated with fecally contaminated foods, especially ready-to-eat foods such as salads, sandwiches, ice, cookies, and fruit.<sup>2</sup> Humans are the only known reservoir of norovirus.

The foodworkers who prepared the catered sandwiches denied vomiting or diarrhea during the days surrounding the outbreak. Asymptomatic carriers have been noted— asymptomatic shedding of norovirus may last for up to two weeks after initial infection.<sup>3</sup> Special care should be taken to avoid norovirus contamination of ready-to-eat foods. Foodhandlers should be educated on proper handwashing and discouraged from bare hand contact with such foods. Ill foodhandlers should be excluded from work while experiencing gastrointestinal illness.

*Reported by: Daniel Neises, Sheri Anderson (Kansas Department of Health and Environment); Martha Conlin, Elaine Deters (Shawnee County Health Agency)*

### ***Our Vision and Mission***

*As the state's environmental protection and public health agency, KDHE promotes responsible choices to protect the health and environment for all Kansans.*

*Through education, direct services, and the assessment of data and trends, coupled with policy development and enforcement, KDHE will improve health and quality of life. We prevent injuries, illness, and foster a safe and sustainable environment for the people of Kansas.*

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<sup>1</sup> Mead PS. Food related illness and death in the United States. *Emerging Infectious Diseases*, 1999. 5(6):607-625.

<sup>2</sup> Centers for Disease Control and Prevention. "Diagnosis and Management of Foodborne Illnesses: A Primer for Physicians and other Health Care Professionals." *MMWR* 2004;53(No. RR-4).

<sup>3</sup> Centers for Disease Control and Prevention. "Norwalk-Like Viruses: Public Health Consequences and Outbreak Management." *MMWR* 2001;50(No. RR-09);1-18