



**GASTROENTERITIS OUTBREAK ATTRIBUTED TO NOROVIRUS  
FRANKLIN COUNTY, KANSAS  
DECEMBER 2005**

**FINAL REPORT DATE**

January 5, 2006

**OUTBREAK INVESTIGATORS**

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**REPORTED BY**

Daniel Neises

**BACKGROUND**

On Thursday, December 28, 2005, a Kansas Department of Health and Environment (KDHE) Food Protection Investigator notified the KDHE Division of Epidemiology Services of a foodborne illness complaint. The complainant, a citizen from Franklin County, stated five individuals from two households experienced vomiting and/or diarrhea after eating at a Franklin County restaurant. Each individual ate dinner at approximately 7:00 p.m. December 22, 2005; they denied any other common meals. KDHE and the Franklin County Health Department (FCHD) initiated an outbreak investigation to determine the source of illness and implement appropriate control and prevention measures.

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<sup>1</sup>Franklin County Health Department

<sup>2</sup>Kansas Department of Health and Environment, Division of Epidemiology Services

<sup>3</sup>Kansas Department of Health and Environment, Northeast District Office

## **METHODS**

The FCHD administered a questionnaire to gather each individual's symptoms. A comprehensive food history for each individual was not obtained.

No food samples or stool samples were collected for testing.

KDHE performed an inspection of the restaurant on December 28, 2005.

Cases were defined as individuals who experienced vomiting and/or diarrhea (more than three loose stools in a 24 hour period) after eating at the Franklin County restaurant on December 22, 2005.

## **RESULTS**

All five individuals that ate together at the restaurant were interviewed. All (100%) reported illness, and all (100%) met the case definition. The median age of the cases was 30 years (range, 21 - 54 years), and 60% were female.

Given the reported mealtime of 7:00 p.m., the median incubation period was 10 hours (range, 6 - 12 hours; see epidemic curve, Figure 1.0). The cases reported nausea (100%), stomachache (100%), fever (100%), muscle aches (100%), diarrhea (80%), and vomiting (60%). The duration of symptoms was approximately the same for all cases. Each case's symptoms resolved between 12:00 p.m. and 12:00 a.m. December 23—exact recovery times were not reported. As a result, the illness duration was estimated to be 36 hours after the onset of symptoms.

Three violations were observed during the restaurant inspection: unclean food equipment (can opener, plates), a hot holding violation (reheated sauce), and a handwashing violation. No employees reported illness.

## **CONCLUSION**

The epidemiologic and clinical data collected regarding this outbreak are consistent with a point-source outbreak of Norovirus. No food item could be statistically implicated as the cause of illness, as everyone who ate became ill. Anecdotally, those diners that ate the most chips with cheese dip were more severely ill than those who ate less. No food samples were tested to confirm viral contamination; historically, isolation of Norovirus from food has been difficult.\* Both the restaurant employees and the complainants denied illness prior to the meal; however, asymptomatic carriers have been previously noted. Asymptomatic shedding of Norovirus may last for up to two weeks after initial infection.\*

Norovirus is the leading cause of foodborne illness in the United States; an estimated 28 million people are infected with Norovirus every year—40% of these infections may be

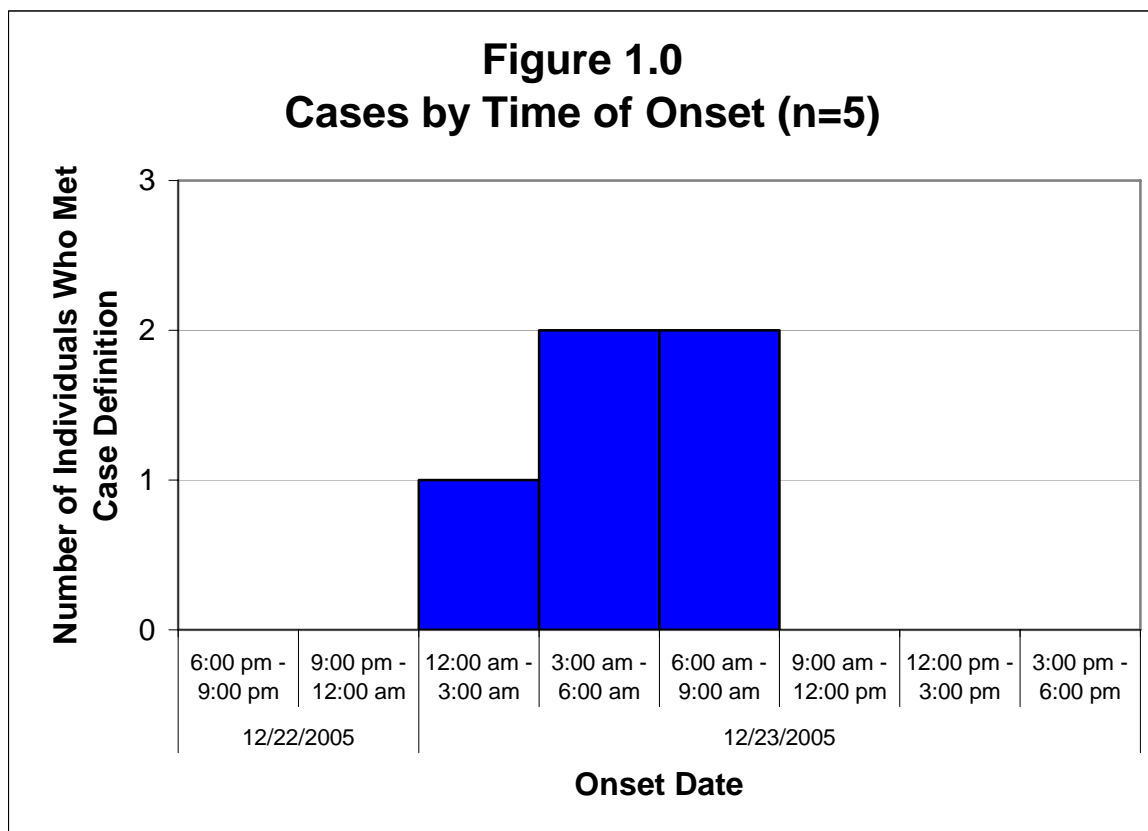
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\* Centers for Disease Control and Prevention. "Norwalk-Like Viruses: Public Health Consequences and Outbreak Management." MMWR 2001;50(No. RR-09);1-18

foodborne.<sup>#</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 the fecal-oral route; historically, Norovirus outbreaks have been associated with fecally contaminated foods, especially ready-to-eat foods such as salads, sandwiches, ice, cookies, and fruit.<sup>¶</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.

This investigation was hindered by an informational delay. Although the cases began to feel ill early December 23, the foodborne illness complaint was not received by KDHE until December 27. It is not clear if the lag was due to the closure of KDHE offices for the Christmas holiday weekend (offices were closed December 24, 25, and 26), or if the complainant delayed contacting KDHE for several days. The delay prevented timely surveillance for additional cases as well as obtaining specimens for testing.



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

<sup>¶</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).