

Gastroenteritis Outbreak Associated with Lupita's Mexican 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 Lupita's Mexican Restaurant (732 S Kansas Avenue, Topeka, Kansas) 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 another group of 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 group of 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 eleven 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 twelve cases ranged from 25 to 59 years (median age, 50 years). Six cases were male.

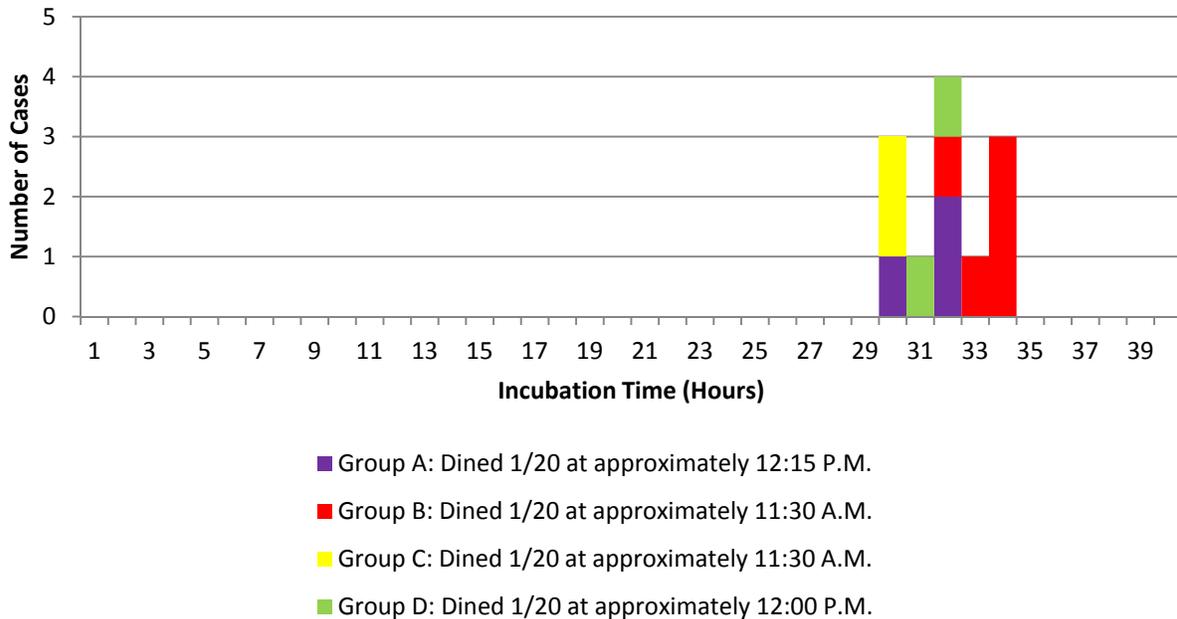
Vomiting and diarrhea were the most commonly reported symptoms. Cases also reported nausea, muscle aches, chills, abdominal pain, and fever (Table 1).

Table 1: Symptoms Reported among Cases – Shawnee County Gastroenteritis Outbreak Associated with Lupita’s Mexican Restaurant, January 2012 (n=12).

Symptom	# of Cases with Symptom / Total Reporting	% of Cases
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 twelve cases, ranging from 28.5 to 33 hours. The median incubation period was 31 hours (Figure 1).

Figure 1: Illness incubation time of gastrointestinal illness cases associated with January 20, 2012 lunches at Lupita's Mexican Restaurant, by group (n=12)



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 twelve 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 particles¹. 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 virus². Approximately 20% of norovirus infected individuals do not have clinical symptoms³. 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 eat⁴.

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 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.

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On: January 31, 2012*

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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.