

Suspected Bacterial Intoxications Associated with a Catered Event

October

Hennepin County

On October 1, 2013, the Minnesota Department of Health (MDH) learned of several complaints of gastrointestinal illness reported to the University of Minnesota Environmental Health and Safety Division on September 28. Illness was reportedly associated with a private homecoming picnic catered by Caterer X on Friday, September 27 for faculty, staff, and alumni of a College at the University of Minnesota. The Hennepin County Human Services and Public Health Department (HSPHD) epidemiology unit was notified by MDH on October 1 and an investigation was initiated.

MDH interviewed picnic attendees who had reported illness to the University of Minnesota Environmental Health and Safety Division. A list of picnic attendee e-mail addresses was provided to HSPHD from a representative of the school. HSPHD epidemiologists gathered information from picnic attendees about food consumption and illness history via an e-mailed interview form. A case was defined as a homecoming picnic attendee who subsequently developed vomiting and/or diarrhea (≥ 3 loose stools in a 24-hour period) after eating at the picnic.

MDH sanitarians visited the church kitchen in St. Paul used by the caterer on October 3 to evaluate food preparation and handling procedures.

E-mail messages were sent to 273 picnic attendees. Overall, information from 53 picnic attendees was obtained by MDH and HSPHD epidemiologists. Of these 53 picnic attendees, 22 (41%) met the case definition. All cases reported diarrhea, 18 (82%) reported cramps, 5 (23%) reported fever, 1 (4%) reported vomiting, and none reported bloody stools. The median incubation was 9.5 hours (range, 4 to 15 hours). The median duration of illness was 16 hours (range, 4 to 65 hours). No cases reported visiting a healthcare provider. Twelve (54%) of the cases were male; the median case age was 34.5 years (range, 4 to 64 years).

No stool specimens were collected from ill attendees, as the short incubation periods and primarily diarrheal illness indicated a bacterial toxin as the probable cause of illness. Therefore, because of the delayed outbreak notification, stool testing would likely not have been productive.

Both cases and controls consumed a wide variety of food items served at the picnic. Food items included vegetarian red beans and rice, red beans and rice with smoked turkey, potato salad, baked beans, corn bread, grilled chicken, fried chicken, brats, hamburgers, veggie brats, buns, peach cobbler, apple cobbler, cookies, cake, bars, brownies, canned soda, and bottled water. The food was set up buffet style, and picnic attendees served themselves.

Univariate analysis indicated that illness was significantly associated with eating any red beans and rice (many picnic attendees were unable to discern whether they ate the vegetarian or smoked turkey red beans and rice dish) (19 of 22 cases vs. 10 of 31 controls; odds ratio [OR], 13.3; 95% confidence interval [CI], 3.2 to 55.7; $p < 0.001$), grilled chicken (9 of 22 cases vs. 3 of 31 controls; OR, 6.5; 95% CI, 1.5 to 27.9; $p = 0.01$), and brats (12 of 22 cases vs. 7 of 31 controls; OR, 4.1; 95% CI, 1.3 to 13.5; $p = 0.02$). In multivariate analysis, only any red beans and rice was independently associated with illness (adjusted odds ratio [OR], 12.5; 95% confidence interval [CI], 2.8 to 55.2; $p = 0.001$).

MDH sanitarians met with the owner of the catering company at the St. Paul church kitchen utilized for food preparation. The owner had purchased all ingredients from local grocery stores. The owner was the main preparer of food, but was assisted by a family member who grilled meats at a different church location's parking lot, and a friend who helped with transport and set-up. Improper cooling, hot holding, and reheating were noted for the preparation of potato salad, beans, rice, fried chicken, and grilled foods (chicken, brats, hamburgers, and veggie brats). No logs or records were available for food temperatures taken throughout the food preparation process to assess adequate cooking temperatures. All food was warmed in chafing dishes on the buffet line; no food temperatures were taken at the event. The caterer was operating without a license in St. Paul or in any other jurisdiction. A citation was issued for operating without a license.

This was a foodborne outbreak associated with consumption of red beans and rice at a catered homecoming picnic. The etiology was not confirmed, but the distribution of incubation periods and symptoms are characteristic of illness caused by *Clostridium perfringens* or the diarrheal form of *Bacillus cereus*. Red beans and rice was implicated as the vehicle. The outbreak likely resulted from improper cooling procedures and improper hot-and-cold holding temperatures, which created an environment in which *C. perfringens* or *B. cereus* proliferated and survived in the food.