State of Alaska Epidemiology Bulletin

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Gastrointestinal Illness Following Two Luncheons, Anchorage

On December 18, 2000, the Anchorage Department of Health and Human Services (DHHS) received reports from several persons who developed gastrointestinal illness 1 to 2 days after eating at luncheons on December 14 or 15. Both luncheons, at different locations, were catered by the same local restaurant.

Methods: Luncheon attendees and restaurant employees were interviewed by public health nurses with the DHHS Disease Prevention and Control program. An inspection of the restaurant was conducted by sanitarians with the DHHS Environmental Sanitation Section. A case of gastroenteritis was defined as a person having vomiting or diarrhea 1 to 3 days after attending a luncheon associated with the restaurant on December 14 or 15, 2000. Stool specimens for enteric bacteria and viruses were submitted to the Alaska State Public Health Laboratory and to the U.S. Centers for Disease Control and Prevention in Atlanta. Food samples were sent to North Carolina State University for viral testing.

Epidemiologic Results:

December 14 luncheon: Nine (47%) of 19 attendees met the case definition. The most frequent symptoms were nausea (88%), vomiting (78%), and diarrhea (67%). Gastrointestinal symptoms resolved within 24 hours, leaving people feeling tired and listless. The mean incubation time was 34 hours, median of 27 hours, with a range from 26 to 45 hours. Consumption of mixed fruit was strongly associated with illness [Table 1, part a].

December 15 luncheon: Seven (54%) of 13 attendees met the case definition. Nausea (86%), vomiting (86%) and diarrhea (86%) were the three primary complaints. The mean incubation time was 37 hours, median of 36 hours, with a range from 30 to 54 hours. All individuals recovered from acute symptoms within 24 hours, however, three reported weakness persisting for 1 or 2 days. Consumption of turkey was associated with illness [Table 1, part b].

Restaurant investigation: Foods served at the luncheons were prepared at a local restaurant on December 14. None of the food prepared for the luncheons was served at the restaurant. One foodworker was sent home on December 14 following onset of diarrheal illness early that morning. The foodworker had prepared fruit, garden salad, tomatoes, lettuce, turkey, pickles, and chips prior to leaving work at 10:30 am. Three other restaurant workers subsequently developed gastrointestinal illness on December 15, 16, and 18. None of these individuals prepared food served at the luncheons on December 14 and 15. Two ate turkey sandwiches while at the restaurant on December 14. No problems with sanitation or inadequate handwashing at the restaurant were noted during the site inspection.

Laboratory Results: Stool samples were provided by eight ill persons, including four persons at the December 14 luncheon, one person at the December 15 luncheon, and three foodworkers, including the foodworker with diarrhea sent home on December 14. All stools were culture negative for

Salmonella, Shigella, Campylobacter, and enteropathogenic E. coli. All stools were positive for a "Norwalk-like virus (NLV)" by reverse transcriptase-polymerase chain reaction (RT-PCR). Further testing showed that the NLV detected in stools from two foodworkers and an ill person from each luncheon were identical. Testing of leftover fruit salad and turkey using RT-PCR was negative.

Discussion: NLVs are the most common cause of nonbacterial gastroenteritis outbreaks in adults. Symptoms typically include nausea, vomiting, diarrhea, abdominal pain, myalgia, headache, low-grade fever, and malaise. Illness is usually self-limited and lasts 24-48 hours. NLVs are usually spread by the fecal-oral route, and outbreaks are usually associated with contaminated food or water. Because the infectious dose is extremely low, the attack rate in common source outbreaks can be high and secondary transmission to family members is common.

The detection of viruses in foods is still in the developmental phase with continuing research helping to refine methods to improve detection. The absence of viral RNA in foods cannot be used to disqualify a suspect food, as false negatives can happen due to sampling issues, age of the food samples, and presence of food-related RT-PCR inhibitors. Epidemiologic investigation continues to be very important.

Conclusions and Recommendations:

1. The epidemiologic and laboratory evidence indicates that this was a common source outbreak of NLV gastroenteritis. The vector was food prepared by an ill foodworker.

2. This incident demonstrates the risk posed by ill foodworkers and the importance of proper hygiene and foodhandling practices. Inspection of food service establishments continues to be a critical public health function. Frequent handwashing will reduce transmission of enteric diseases. Foodworkers should always wash hands after toileting and should not handle food if they have gastrointestinal symptoms.

3. Foodworkers may be hesitant to report illness for financial reasons. Foodservice establishments should consider sick leave benefits.

Table 1. Food specific attack rates and odds ratios for foods served at December 14 and December 15 luncheons, Anchorage.

Date and Food	Attack Rate	Odds Ratio (95%CI)
a. December 14		
Mixed fruit	69%	Infinite (1.6, ∞)
Turkey	67%	4.7 (0.5, 56)
Ham	67%	2.6 (0.1, 92)
Roast beef	50%	1.1 (0.1,16.7)
Pasta salad	47%	0.9 (0.1, 12.7)
b. December 15		
Turkey	100%	Infinite (2.6, ∞)
Fruit tray	100%	Infinite (0.0, ∞)
Beef	71%	2.5 (0.1, 78.8)
Salmon paté	57%	0.4 (0, 12)