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FOODBORNE OUTBREAK--ETIOLOGY ELUDES EPIDEMIOLOGISTS

Reports of illness among two groups of people eating at a local Anchorage restaurant sparked an investigation in conjunction with Anchorage Dept. of Health and Human Services.

A group of sixteen people from an office in downtown Anchorage (Group 1) ate lunch together at the restaurant on November 20, 1987. Using a case definition of either vomiting and/or diarrhea accompanied by either nausea and/or abdominal pain after consuming food or drink at the restaurant, we determined that seven of the fifteen people we were able to interview met this case definition (attack rate = 47%). Of these seven, all complained of nausea, six complained of diarrhea, and five complained of vomiting. The average age of cases was 39 years. The average incubation period was 30 hours, and the average duration of illness was 55 hours. One possible secondary case in a family member was described. No food items were clearly associated with illness, although suspicion centered on beef tostadas and lettuce.

Calls to credit card customers who ate at the restaurant between November 19 and 23 revealed that 6 of 45 individuals met the above case definition (attack rate = 13%). The incubation period, symptoms, and duration of illness for these people were similar to those of Group 1. Combined food histories from the credit card customers and people in Group 1 indicated that a single food item, beef tostada, was significantly associated with disease; five of six individuals who ate that item were sick vs. four out of fourteen who did not (Fisher exact $p=.04$, Relative Risk = 2.92). The beef for the tostadas was commercial hamburger.

Group 2 was composed of employees from another office. Six individuals had drinks and appetizers only on the evening of November 20. Three of the five complained of nausea, diarrhea, and abdominal pain approximately five hours later. Although the mean age of this group (35 years) as not significantly different than that of Group 1, the duration of illness was much longer--approximately 4½ days. Since food exposure was the same for each of the five (chips and dip), food specific attack rates were not calculated.

Approximately 50 individuals are employed at the restaurant. Most of them regularly have meals there. Two waitresses had a recent history of vomiting, diarrhea, and abdominal pain; one became ill on November 10 and still had diarrhea the following day when she went to work. The other was ill for approximately 36 hours starting on November 21.

A total of 25 stool samples were submitted for culture. All were tested for Salmonella and Shigella. In addition, 18 were tested for Yersinia and three for Campylobacter. Eight came from Group 1, three from Group 2, and the remainder from restaurant employees, including one stool from each of the symptomatic waitresses. All stools were negative for the above pathogens. The preliminary investigation identified two possible suspect foods; cooked hamburger meat and lettuce. Samples of each were collected November 24, but none of the food served on November 20 was available for testing. Tests on food samples for Salmonella, Shigella, Bacillus cereus, and Clostridium perfringens were negative.

The restaurant was carefully inspected by sanitarians from the Municipality of Anchorage. A large uncovered pot which was not maintained at an adequate temperature was used to hold cooked hamburger meat. Foodhandlers were provided with instructions on proper foodhandling, and identified deficiencies were corrected.

It is possible that two separate types of illness were involved in this outbreak. Group 1 and credit card customers had illness with characteristics different from Group 2 with respect to incubation period, symptoms, and duration of illness.

Cooked meats and gravies held at inadequate temperature are a well known vehicle for Clostridium perfringens. Although Group 1 and credit card customer, food-specific attack rates implicated the beef tostadas, the 30-hour incubation period points more toward Salmonella or Norwalk virus. Unfortunately, hamburger from the implicated meal was unavailable for testing, and viral cultures and serologic testing for evidence of Norwalk virus were not done.

The Anchorage Department of Health and Human Services and the Section of Epidemiology have not received any subsequent reports of illness among individuals who have eaten at the restaurant.