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Epidemic Gastroenteritis Traced to Fairbanks Restaurants

OUTBREAK I - Salmonella Gastroenteritis - Restaurant A

Thirty-eight cases of gastroenteritis due to Salmonella group D occurred in Fairbanks between July 30 and October 5, 1983. Thirty-four of these cases occurred between September 14 and October 5. Thirty-one of the Salmonella group D laboratory isolates have been serotyped and are *Salmonella enteritidis*. Eleven additional cases meeting the clinical case definition of abdominal pain and diarrhea were culture negative.

Thirty-six of the 38 laboratory confirmed cases of Salmonella group D and all of the 11 clinical cases have been interviewed. Of the 47 interviewed cases, 23 were men, 24 were women. The mean age was 22.5 years (range 1 to 60 years). Symptoms included abdominal cramps (76%), diarrhea (97%), fever (79%), nausea (39%) and vomiting (24%). The mean duration of illness was 7 days (range 2 days to 1 month).

Twenty-four of the 36 interviewed Salmonella group D cases ate at Restaurant A in Fairbanks in the 3 days prior to their illness. Nine of the 36 frequented the restaurant but could not remember the exact date. Included among these 36 cases were 6 employees at Restaurant A; three of the six were foodhandlers. The 11 clinical cases not culture confirmed are employees at Restaurant A. Of the 47 total cases interviewed, 44 were associated with Restaurant A. No other restaurant frequented in the 2 weeks prior to the onset of symptoms was mentioned by more than 3 of the 47 cases interviewed.

On October 8, Restaurant A closed voluntarily. Sanitarians from the Department of Environmental Conservation (DEC) performed a thorough inspection of Restaurant A on October 8-9 and worked with management to correct deficiencies. The restaurant reopened for business on October 9.

On October 8, 62 of 75 current employees were interviewed. Seventeen employees who had a history of diarrheal illness in September or October or who were culture positive for Salmonella were barred from working in a food establishment pursuant to DEC regulations pending 3 consecutive negative stool cultures for Salmonella. Asymptomatic employees were urged to submit stool samples for Salmonella culture.

An illness questionnaire was given to employees at eight other Fairbanks restaurants to assess the prevalence of diarrheal illness among restaurant workers. Eighteen of 192 workers at the eight other restaurants surveyed reported symptoms of diarrhea in September. Diarrheal illness was significantly more prevalent among employees at Restaurant A than among employees at other Fairbanks restaurants ($p < 0.02$).>

Intensive surveillance was established to detect additional cases. No new cases of Salmonella with onset prior to October 5 have been reported.

OUTBREAK II - Gastroenteritis - Restaurant B

On October 4 and 5, 1983 a second outbreak of foodborne illness occurred in Fairbanks associated with a different restaurant (Restaurant B). Thirty people (74 dinners were served) who ate dinner on October 4 at Restaurant B developed the following symptoms: diarrhea (88%), abdominal pain (62%), nausea (46%), vomiting (50%), chills (35%), and fever (4%). The mean incubation time was 9 hours with a range from 1 to 22 hours; mean duration of symptoms was 36 hours (range 1 hour to 5 days).

An analysis of food specific attack rates failed to implicate a specific food item. After an initial inspection on October 5 by DEC sanitarians, food samples were obtained and proper food preparation and handling procedures were reviewed with restaurant staff. No food from October 4 was to be used for dinner on October 5. The restaurant served a popular lunch each day; no one eating lunch on October 4 became ill.

On October 6, investigators were notified of widespread illness among people who ate dinner at the restaurant on October 5. The restaurant closed voluntarily. Thirty-three people (69 dinners were served) who ate dinner on October 5 developed illness with a mean incubation time of 9 hours. Symptoms included diarrhea (81%), abdominal pain (56%), nausea (25%), vomiting (28%), chills (33%), and fever (3%). No single food item was strongly associated with illness. Only 2 people were located who ate dinner at the restaurant on October 5 and did not become sick. No one eating lunch on October 5 became ill. A thorough inspection was conducted by DEC sanitarians and numerous deficiencies identified. Restaurant B reopened on October 10 upon compliance with sanitarian recommendations.

Included among the 62 total cases associated with Restaurant B were 6 of 29 restaurant employees. All were culture negative for enteric pathogens. Stool specimens and rectal swabs from other cases were also culture negative for both gram-positive and gram-negative bacteria. No samples of food actually served on October 4 and 5 were available. Specimens of the food ingredients which were kept refrigerated were culture negative.

Intensive surveillance for detection of gastrointestinal illness was established. A total of 62 cases of gastrointestinal illness associated with Restaurant B were identified, 59 occurring in a 2-day period. No further illness has been reported in patrons of Restaurant B since October 11. No secondary spread of illness occurred among family member of cases.

While all culture results were negative and no single food item identified, epidemic investigation suggests the following: 1) the outbreak is most consistent with a foodborne bacterial illness, 2) the symptoms, incubation period, duration, lack of secondary cases, and high attack rate suggest *Clostridium perfringens* as a likely etiologic agent, 3) the outbreaks on October 4 and 5 were caused by the same agent, 4) deficiencies in food preparation, handling, holding, and storage were identified by DEC sanitarians and provided ample opportunity for widespread contamination, and 5) no links have been found between the foodborne outbreak associated with Restaurant B and the outbreak associated with Restaurant A. Intensive surveillance for detection of

gastrointestinal illness was established. No further illness has been reported in patrons of Restaurant B since October 11, 1983.

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