Microbiology CA/IA
Food Poisoning Case Studies

Food Poisoning Case Study 1

During November 25-28, 1995, all six persons who attended a Thanksgiving dinner at a private home on November 23 and a seventh person who on November 25 ate food remaining from the dinner had onset of abdominal cramps, vomiting, and diarrhea. Two persons were hospitalized because of dehydration; a third person was found comatose at home and died from severe dehydration and sepsis.

Food available at the dinner included turkey, stuffing, mashed potatoes, candied sweet potatoes, peas, brussel sprouts with bacon and apple, green salad, bread butter, cranberry jelly, black olives, green olives, pumpkin pie, vanilla ice cream and apple pie.

The Clark County Health District interviewed the ill persons (including the cook) to obtain details about the preparation and cooking of the turkey and stuffing. On November 22, a 13-pound frozen turkey was thawed for 6 hours in a sink filled with cold water. After thawing, the packet of giblets (heart, liver and gizzard) was removed, and the turkey was stored in a refrigerator overnight. However, on November 23, parts of the turkey were noted to be frozen. The turkey was filled with a stuffing made from bread, the giblets, and three raw eggs, and then placed for 1 hour in an oven set at 350°F (177°C). The setting was lowered to 300°F (149°C) while the turkey cooked for an estimated additional 4 hours. The turkey was removed from the oven when the exterior had browned. A meat thermometer was not used. The stuffing was removed immediately and was served with the turkey. After the outbreak, health officials tested the oven set at 300°F and found the temperature to be 350°F.

a. based on the symptoms, time of onset and duration of the illness, name the most likely cause of food poisoning. Justify your decision.

b. Which of the foods mentioned was the most likely source of the causative agent? Justify your choice.

Food Poisoning Case Study 2

In response to reports of diarrhea among members of a local church youth group, the Albuquerque Environmental Health Department and the New Mexico Health and Environment Department initiated an investigation. The youth group had dinner once a week at the church; food was prepared by parents of group members. The number of attendees at each meal varied, and no record of who attended was kept.

Onset of illness occurred from March 3 to March 30, and illness lasted 1-32 days (median: 20 days). Twenty-one (19%) of 108 persons who ate at the youth group dinner on March 2 developed an illness. For the 21 ill persons who had eaten the March 2 dinner, the most frequent symptoms reported were fatigue (95%), diarrhea (91%), abdominal cramps (57%), bloating (57%), and weight loss (67%).

Foods served at the dinner on March 2 included tacos (with meat, onions, tomatoes, lettuce, cheese, salsa, sour cream, and tortillas), corn, peaches, cupcakes, soft drinks, coffee, and tea.

Except for the commercially prepared salsa, the implicated foods were prepared in the church kitchen. The lettuce and tomatoes were rinsed at the kitchen’s main sink; the outer leaves of the lettuce were removed; and the lettuce, tomatoes and onions were chopped on the same cutting board, which was not washed between items. The dinner was prepared by eight women whose children were in the youth group; all ate the meal. Although the woman who prepared the lettuce and tomatoes taught preschool and had a child in preschool, neither she nor her child was ill when the meal was prepared. None of the eight food preparers reported symptoms at the time of meal preparation; however, five became ill with diarrhea after March 8.


a. based on the symptoms, time of onset and duration of the illness, name the most likely cause of food poisoning. Justify your decision.

b. Which of the foods mentioned was the most likely source of the causative agent? Justify your choice.
Food Poisoning Case Study 3
On a humid summer day, dozens of sportsmen lumbered out to shoot clay targets at the Minnesota Horse and Hunt Club in Prior Lake. A fund-raiser for troubled youths, the event was capped with a banquet at the club's Triggers restaurant. The featured fare included prime rib, new potatoes and green beans sprinkled with cashews. There were tossed salads and pitchers of ice water and chopped parsley sprinkled decoratively over everything. Within a week, dozens who attended the banquet has become ill with symptoms that lasted a few days including painful cramps, diarrhea and nausea. Five people from the Triggers outbreak were hospitalized. Robert Gardner, a lawyer from Eagan who attended the banquet and got sick, described the ordeal this way: “…your body is in an uncontrollable shivering because you have a fever, and you're literally running to the bathroom every five minutes, and once your intestinal tract is completely empty, you start excreting blood, and this is in the context of an extreme, extreme headache. Well, basically you want to die,” Gardner said.

a. based on the symptoms, time of onset and duration of the illness, name the most likely cause of food poisoning. Justify your decision.
b. Which of the foods mentioned was the most likely source of the causative agent? Justify your choice.

Food Poisoning Case Study 4
On August 29, 1996, the Jackson County Health Department in southwestern Oklahoma notified the State Department of Health of a cluster of foodborne infections that occurred during August 16-20 among person who had eaten lunch at a local restaurant on August 15. All patients reported diarrhea; 13 (93%), fever; 13 (93%), abdominal cramps; 11 (79%), nausea; and five (36%) vomiting. The median incubation period was 3 days (range 1-5 days). The cook at the restaurant reported cutting up raw chicken for the dinner meals before preparing salads, lasagna, and sandwiches as luncheon menu items. Lettuce for salads was shredded with a knife, and the cook wore a towel around her waist that she frequently used to dry her hands. Bleach solution was present.

a. based on the symptoms, time of onset and duration of the illness, name the most likely cause of food poisoning. Justify your decision.
b. Which of the foods mentioned was the most likely source of the causative agent? Justify your choice.

Food Poisoning Case Study 5
On August 3, 1982, a 56-year-old woman residing in Los Angeles County, California, developed diplopia, weakness, difficulty breathing, and chest pain. She had respiratory arrest on admission to the hospital, but was intubated, resuscitated, and placed in intensive care. Examination showed bilateral ptosis, ophthalmoplegia, facial muscle weakness, and areflexia. Cerebrospinal fluid was normal except for increased glucose. She had a past history of seizure disorder, diabetes mellitus and organic brain syndrome.

The patient lives with her husband and grown son who both prepare meals for her and attempt a strict diet in consideration of her diabetes. When asked about the patient’s food history 24 hours before the onset of illness, the husband and son named a variety of foods including cereal and milk, cantaloupe, cooked hamburgers from a take-out restaurant, salad with blue-cheese dressing, french fries, a commercial beef pot pie and cooked shrimp with cocktail sauce.

a. based on the symptoms, time of onset and duration of the illness, name the most likely cause of food poisoning. Justify your decision.
b. Which of the foods mentioned was the most likely source of the causative agent? Justify your choice.
Food Poisoning Case Study 6

On March 28, 1993, 115 persons attended a traditional ST. Patrick’s Day dinner of corned beef and cabbage, potatoes, vegetables, and ice cream. Following the dinner, 86 (76%) of 113 persons interviewed reported onset of illness characterized by diarrhea (98%), abdominal cramps (71%), and vomiting (5%). The median incubation period was 9.5 hours (range 2-18.5 hours). Duration of illness ranged from 1 hour to 4.5 days; one person was hospitalized.

The corned beef was a frozen, commercially prepared, brined product. thirteen pieces, weighing approximately 10 pounds each, had been cooked in an oven in four batches during March 27-29. Cooked meat from the first three batches was stored in a home refrigerator; the last batch was taken directly to the even. Approximately 90 minutes before serving began, the meat was sliced and placed under heat lamps.

a. Based on the symptoms, time of onset and duration of the illness, name the most likely cause of food poisoning. Justify your decision.

b. Which of the foods mentioned was the most likely source of the causative agent? Justify your choice.

Food Poisoning Case Study 7

On September 27, 1997, a community hospital in northeastern Florida notified the St. Johns County Health Department about several persons who were treated in the emergency department because of gastrointestinal illness suspected of being associated with a common meal.

Eighteen out of 95 persons (19%) became ill after attending a retirement party where sliced ham and rice pilaf were served. Symptoms reported included nausea (94%), vomiting (89%), diarrhea (72%), weakness (67%), sweating (61%) chills (44%), fatigue (39%), headache (11%), and fever (11%). Onset of illness occurred at a mean of 3.4 hours after eating (range: 1-7 hours); symptoms lasted a median of 24 hours (range: 2-72 hours). Seven persons sought medical treatment, and two of those were hospitalized overnight.

a. Based on the symptoms, time of onset and duration of the illness, name the most likely cause of food poisoning. Justify your decision.

b. Which of the foods mentioned was the most likely source of the causative agent? Justify your choice.