

# Scenario and Discussion

## Foodborne Illness Outbreak Investigation

### Module 1: Onset of Illness

On Saturday, September 9, the Wasilla Snow Drop High School Moving Moose dance team completed their first competition and had a team party to distribute trophies. All 15 team members, their parents, and six coaches celebrated by dining at a family-style restaurant. The team mom pre-ordered chicken taco dinners for everyone. The pre-ordered meal featured chicken tacos, beans, rice, chips, green chili salsa, and ice cream sundaes.

On Monday morning, September 11, nine team members stayed home from school. They all suffered from fever and diarrhea and three were vomiting. Not knowing about the other teammates, parents gave their children fluids and hoped for improvement. In one household, both father and son were ill.

By Tuesday morning, September 12, the nine students were still absent and eight more students from Snow Drop High School had fever and diarrhea and did not go to school. The school nurse called the parents to check on the children. The nurse told the parents that some other members of the Moving Moose dance team were also home sick. Some of the dance team parents called each other and others posted to Facebook the information to the other team parents.

Parents decided their children should go to the doctor since they were all experiencing similar symptoms. Various physicians examined the sick children and spoke with the parents who reported other dance team members were also sick. These similarities led the physicians to conclude that the children contracted a viral or bacterial infectious disease that could be transmitted person-to-person, food, or water.

On Wednesday September 13, sixteen more Snow Drop High School students, who were not on the dance team, visited the school nurse with gastrointestinal (GI) illness. The nurse was alarmed at the rate of absenteeism and illness at her school and contacted the school foodservice director to inform him about the increase in gastrointestinal illness among the students. The foodservice director assessed the school's food safety records for anything that might have indicated a problem in the school cafeteria.

The nurse also contacted other school nurses in the borough to see if they had observed a similar increase in absenteeism. According to Notifiable Disease Rules, physicians and school principals were required to report “Outbreaks of any kind.” The nurse did not know what was causing the illness, but due to the number of affected students, she contacted the State of Alaska Section of Epidemiology.

The Section of Epidemiology contacted the Food Safety and Sanitation program and an environmental health officer researched the program’s records and saw the restaurant visited by the Snow Drop High School Moving Moose dance team was most recently inspected on September 5. On Thursday, September 14, the environmental health officer decided to make a visit to the restaurant to complete a foodborne illness complaint follow-up inspection. The EHO told the restaurant’s management of a potential outbreak that may be associated with their establishment. The restaurant manager was quite concerned and asked for as much information as possible. The manager began gathering food safety records and information. On Thursday, the EHO also notified other Food Safety and Sanitation staff of the status of the preliminary association with this restaurant.

The Section of Epidemiology began to identify a common source of infection, stop the disease transmission, and requested stool specimens from the students. They talked with the other schools in the borough and clinical professionals. They also identified five possible cases from other schools, including two middle school students and one adult from the same community as Snow Drop High School.

On Thursday, September 14, and Friday, September 15, a nurse with the Section of Epidemiology completed five hypothesis-generating interviews with the sick students and their parents to try to determine the route of exposure. She also requested stool specimens from sick individuals for testing at the public health lab.

On Thursday, September 14, the local Mat-Su Borough radio station contacted the school district and the Section of Epidemiology for information. The district superintendent and the Section of Epidemiology provided a brief statement that indicated the situation was under investigation.

On Saturday, September 9 in Palmer, the Great Alaska Community College Cafe began its annual back-to-school special: buy-one-get-one-free chicken enchilada dinners for one week. By Monday, September 11, many students were feeling ill with fever and diarrhea, but they passed it off as nerves about the new school year or “stomach flu.”

By Wednesday afternoon, September 13, 27 students visited the campus health clinic with GI symptoms, including fever and diarrhea. The physician and the nurse practitioner grew concerned at the significant increase in ill students with the same symptoms and suspected a communicable disease. Between Thursday and Friday, 52 more students visited the infirmary

with similar symptoms. On Friday, the physician contacted the Section of Epidemiology and they contacted the Great Alaska Community College administration to report the situation.

## **Developments**

1. Onset of illness (illness in two communities)
2. Stool samples collected
3. School nurse and physician both contact State Section of Epidemiology
4. Hypothesis-generating interviews begin in Wasilla
5. Local media reports Wasilla story

## **Module 2: Identification of Common Exposure**

By Sunday September 17, the Section of Epidemiology continued the school and college hypothesis-generating interviews. They identified that the dance team practiced together five or six times a week for at least three weeks before they became ill. The dancers shared snacks, electrolyte drinks, and water at their practices. The shared meal at the restaurant after their first competition was identified as a point of possible common exposure.

On Monday, September 18, some of the results of the students' stool were sent to their respective physicians from private laboratories. Salmonella had been isolated from three of the stool specimens submitted Tuesday evening. All three specimens were sent for PFGE patterns and serotyping. The physicians contacted the Section of Epidemiology to report the findings.

On Monday, September 18, the epidemiologist reviewed the food histories of the five cases, some had their stool specimens tested (three from the dance team) and confirmed that three of the five had eaten the chicken taco meal within 24–72 hours prior to illness onset. The epidemiologists used the analysis of the initial interviews and the laboratory information to develop a specific outbreak questionnaire. This allowed a more complete analysis to identify the common exposure point for the outbreak.

The Section of Epidemiology updated the media with news releases, case counts, and efforts to investigate. The possible link to the restaurant was not made public at this point, as the epidemiologic investigation was not complete.

From Saturday through Monday, September 16–18, nurses with the epidemiology office conducted five hypothesis-generating interviews with the sick college students to try to identify the source of common exposure. This was complex because students made multiple visits to the

Cafe and the students' recollection of what meals they had eaten two to four days prior to the onset of illness was fuzzy.

By Tuesday, September 19, a short list of foods consumed in common at the Cafe by the ill students was developed. The list included:

- Visits to the self-service salad bar with iceberg lettuce, onions, green peppers, mushrooms, shredded cheddar cheese, and Italian and French dressing
- Chicken enchilada dinners with chicken and cheese enchiladas topped with green chili salsa, rice and chips
- Scrambled eggs
- Roast beef sandwiches, with roast beef, iceberg lettuce and horseradish sauce

The interviews also included information on meals the students had eaten off campus or cooked themselves. No commonalities were seen to indicate an exposure outside of the Cafe.

Over the weekend of September 16-17, thirty-three more students reported to the health center with GI symptoms. Stool samples from 11 of them were obtained and sent for analysis.

On Thursday, September 21, the lab informed the Section of Epidemiology that seven stool samples from Palmer were positive for Salmonella and that cultures were being serotyped and set up for PFGE analysis.

The Section of Epidemiology notified the infirmary staff about the lab results. In the meantime, the Great Alaska Community College's administration maintained communication with the student health clinic to monitor the situation over the weekend. The college foodservice director conducted an internal investigation, review, and evaluation of internal food safety practices and looked for any anomalies that could help with the investigation. The Food Safety and Sanitation program called to schedule a visit to the Cafe to try to identify the possible contamination, collect food specimens, and let them know the hypothesis-generating interview results linked the illnesses to food consumed at the Cafe.

## **Developments**

1. Analysis of dance team and other Wasilla hypothesis-generating interviews points to the restaurant where they ate after the competition
2. Doctors in Wasilla contacting the Section of Epidemiology reported seeing an increase in patients with Salmonellosis
3. Interviews of college students in Palmer begin; Cafe food is suspected
4. Private lab in Wasilla notes the unusual increase in Salmonella and contacts the State lab