

Salmonella Outbreak at a Hotel in North Carolina¹

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Introduction

About 48 million people become sick, 128,000 are hospitalized and over 3,000 people die as a result of foodborne sicknesses in the United States annually (CDC, 2011a). Despite these frightening numbers, people continue eating out at foodservice facilities in the United States. It is believed that over 130 million individuals eat out daily and restaurants serve over 70 million meals in the United States (Cho et al., 2013; National Restaurant Association, 2009). The restaurant industry is seen as one of the sources for foodborne disease outbreaks (FBDOs) (Jones et al., 2004) and restaurants and hotels often face such FBDOs. For example, in May 2013, the North Carolina Division of Public Health (NC DPH) was notified by the Cumberland County Health Department (CCHD) confirmed cases of salmonellosis linked with a hotel in North Carolina (Lee et al., 2013; McCleary 2013). About 15 cases were initially reported and 10 of them were staff members (Lee et al., 2013). An investigation was initiated by CCHD and a total of 100 cases were identified during the investigation.

This case study was compiled based on published materials and academic references. It aims to discuss the foodborne disease outbreak at a hotel in North Carolina. It first provides a brief overview of foodborne illness outbreaks, their causes and symptoms. Next, it provides a brief description of the hotel. Third, it explains how the salmonella outbreak started at this hotel, how many people became sick and how many of them were hospitalized. The case study further summarizes the official report findings published on this case by CCHD. Finally, it summarizes emerging conclusions from discussions throughout the case study and poses questions for further discussions.

A Brief Overview of Foodborne Disease Outbreaks

A foodborne disease outbreak (FBDO) is defined by the Center for Disease Control and Prevention (CDC) as “an incident in which two or more persons experience a similar illness resulting from the ingestion of a common food” (CDC, 2011a). The majority of FBDOs has a bacterial or viral etiology (Linscott, 2011). Detailed information can be found online at the Center for Disease Control and Prevention’s website: <http://www.cdc.gov> about incubation periods, clinical syndromes, and criteria for confirming the etiology once a FBDO has been identified

(CDC, 2011b). Each FBDO should be reported to the Foodborne and Diarrheal Diseases Branch at CDC through the Electronic Foodborne Outbreak Reporting System (eFORS) using the web-based Form (CDC, 2011a).

FBDOs can sometimes be linked to one or more businesses. However, in some cases there can be regional, national and international FBDOs (Murphy et al., 2011). For example, one national outbreak was the Jack in the Box Restaurants E. coli outbreak in 1993. There were over 700 people who got sick and four children died as a result of this foodborne outbreak (Golan et al., 2004). It was reported that the company lost \$160 million in sales and other costs (Knight et al., 2007). This shows that a single FBDO can result in lawsuits, payment of substantial compensation, increased insurance premiums, and may even result in the loss of business.

There are five major factors that are common to many FBDOs. They are dirty equipment; inadequate cooking; food from unsafe sources; improper holding times and temperature and poor personal hygiene (CDC, 2011; Murphy et al., 2011). It is claimed that about 75% of FBDOs are linked with incorrect food handling practices by employees in foodservice establishments (Almanza and Nesmith, 2004). Food safety handling errors are often due to lack of food safety knowledge (Cho et al., 2013). Despite widespread efforts in offering training workshops on food safety, employees working in foodservice organizations still do not have sufficient knowledge and often fail to follow proper food safety practices (Cho et al., 2013). For example, Green et al. (2005) found that 25% of employees did not wash their hands, 22% of them did not change gloves between contacting raw meat/poultry and cooked food and about 53% of them did not use a thermometer when checking the cooked food.

There are specific areas where positive changes are needed to eliminate or reduce FBDOs. They include maintaining proper personal hygiene, ensuring correct internal temperature for cooked foods, storage of potentially hazardous foods, and handling of food and works surfaces (Green et al., 2005; York et al., 2009). Murphy et al. (2011) suggest that one of the efficient strategies in lowering or eliminating food

¹ The actual name of the case study hotel is disguised. Published materials and academic sources were used in preparing this case study. It was written for the purposes of classroom discussions. It was not intended to show effective or ineffective handling of decisions or a managerial situation. Foodborne disease outbreaks are common in the foodservice industry. As noted in the case study, the case study hotel fully cooperated with the local and state officials and worked hard to control the outbreak, which was declared over in June, 2013.

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hygiene issues is to have inspections performed by local or state environmental health inspectors. Murphy et al. (2011) further state proper training and certification programs on food safety for employees and managers can help reduce and eliminate unsafe food handling practices in foodservice businesses.

The case study hotel in North Carolina

The case study hotel is one of the main convention hotels located in the area. It has several meeting rooms and over 30000 sq. ft. meeting space. It has about 300 guestrooms, several suites, one outdoor/seasonal pool, one restaurant and an American Bar & Grill.

Salmonella Outbreak at the case study

According to the prior public inspection reports conducted early 2013 for the three restaurants at this case study hotel, the combined kitchen received an "A" grade. However, the inspectors had highlighted several areas where shortcomings were found (PrizkerLaw, 2013):

- An employee was observed not washing hands between cooking food, serving the customer at their tables, and then returning to prepare and cook food.
- The glasses and plates were stacked on the clean dish rack with food debris left in them.
- The food items in the walk-in-cooler were not meeting the required temperature. The sliced cheese, ham, Monterrey cheese, corn beef, pre-boiled eggs, and chicken were discarded per management due to temperature violations (PrizkerLaw, 2013).

In May 2013, CCHD alerted the public about a possible salmonella outbreak after about 15 people showed symptoms of the bacterial infection and 10 of them were hotel employees (Lee et al., 2013). Some people who ate at this hotel in early May 2013 had the salmonella symptoms (Basiouny, 2013a; Gillespie, 2013; Harriman, 2013). Salmonella bacteria can be transmitted through contaminated food or contact with an infected animal or person (CDC, 2011a; Gillespie, 2013). Symptoms of infection include diarrhea, fever and abdominal pains. Salmonella infections, called salmonellosis, can be life-threatening (CDC, 2011a). They can also lead to long-term complications including colitis, irritable bowel syndrome, meningitis, sepsis and reactive arthritis which causes painful inflammation in the joints that can last for weeks or months (CDC, 2011a; CDC, 2011b; Gillespie, 2013).

CCHD worked with the hotel to resolve the case and the hotel management team fully cooperated with the local and state officials to help control the outbreak (Basiouny, 2013a). CCHD declared the outbreak was over by June, 2013. The outbreak ended after sickening about 100 people and 29 of them were staff members and 71 of them were hotel guests (Lee et al., 2013). Health investigators inspected the hotel's kitchens and restaurants for possible reasons for the outbreak. The county health department sent workers to the hotel every day to ensure that hotel employees were taking precautions to make sure

there are no more outbreaks (Gardner, 2013; McCleary, 2013). Health investigators also traced back foods or food items shipped to the hotel in an attempt to point to the outbreak source. Interviews with managers and employees and observations revealed multiple reasons for this outbreak including inappropriate water temperatures and absence of hand washing supplies. Other food safety issues included bare hand contact with ready to eat foods, temperature violations, and one dishwasher that was not properly functioning (Lee et al., 2013).

The final report published by the North Carolina Department of Health and Human Services Division of Health on July 19, 2013 provided the following findings and observations (Lee et al., 2013).

- A total of 100 cases were found during the investigation. They were residents from Alabama, North Carolina, South Carolina, Maryland, Illinois, Louisiana, New Jersey, Colorado and New York.
- Of the 100 patients, eight of them were hospitalized.
- Of the 100 patients, 88% experienced diarrhea, 80% abdominal cramps, 51% fever, 45% vomiting and 14% bloody diarrhea.
- Of the 100 cases, 71 of them were customers and 29 of them were hotel employees.
- Out of 29 hotel employees, 14 of them were food handlers.
- The source of the outbreak was linked to eating at this hotel's American Bar & Grill.
- The failure of dishwashing machine to reach the surface temperature of the dishes to 160°F might have permitted pathogenic bacteria to survive and help spread contamination.
- The lack of sufficient hot water, hand soap and drying materials at several hand wash sinks might have served as a barrier to washing hands or resulted in it being ineffective.
- Some employees continued working while they were ill or showing symptoms, which might have served as an ongoing source of infection.

In their final report, CCHD suggested specific requirements and recommendations to the hotel administrators and employees. They are summarized below (Lee et al., 2013, p. 5):

- All employees should exercise proper hand washing procedures.
- Keep all hand wash sinks accessible.
- Keep all hand wash sinks supplied with soap, paper towels, and water temp of 100F.
- Increase hot water storage to accommodate the hot water sanitizing dish machine.
- All multiuse utensils should be washed, rinsed, and sanitized.
- Employees should not touch ready to eat food with bare hands. Gloves should be used.
- Dish washer should be repaired or replaced.
- Thin probed thermometers should be provided to check food temperatures.
- Ice machines should be cleaned and sanitized.

The management of the case study hotel disputed the North Carolina Department of Health and Human Services' report on the salmonella outbreak. The hotel manager stated that they do not fully agree with the findings and conclusions stated within the report. According to them, during the investigation not a particular food item was singled out and all the samples taken from the dishwasher tested negative for Salmonella (Basiouny, 2013b). Several lawsuits were filed in connection with this outbreak and each was asking for compensation of about \$10,000 (McCleary, 2013). The victims were seeking compensation for their medical payments, lost wages, pain and emotional sufferings. One of the law firms stated that "Even if your illness was not life threatening, you could still receive substantial compensation from the companies responsible for this outbreak" (PritzkerLaw, 2013).

Conclusions and Discussion Questions

This case study focuses on a recent salmonella outbreak at a hotel in North Carolina in 2013. After eating at this hotel, about 100 individuals showed salmonella symptoms such as diarrhea, fever, and abdominal pains. Salmonella infections, called salmonellosis, can be life-threatening. They can lead to long-term complications including colitis, irritable bowel syndrome, meningitis, sepsis, and reactive arthritis. Several lawsuits were filed in connection with this outbreak. The hotel fully cooperated with the local and state officials. The North Carolina Department of Health and Human Services Division of Health published its final report on July 19, 2013 and listed specific findings and offered recommendations for the hotel. Several discussion questions related to this case study and food safety issues in foodservice businesses are listed below:

- How widespread are foodborne illnesses in the United States?
- What are the symptoms of salmonella outbreak?
- What were the actual sources of the salmonella outbreak at the case study hotel?
- How did the case study hotel handle this foodborne disease outbreak?
- How can such foodborne illness outbreaks be prevented?
- How can such foodborne illness outbreaks impact on a food-service business' operations?
- What should a restaurant or a hotel do in if they face such an outbreak?
- What can you learn from this case study?

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