

SAM AND ELLA'S SCARE OF 2002 IN ORANGE CRUSH COUNTY

A Case Study in Assessing a Salmonella Outbreak

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Introduction and Background

Assessment, as a core Public Health function, involves all activities related to community diagnosis. These activities include surveillance, identification of needs, analysis of causes of problems, collection of data, case finding, monitoring and forecasting trends, research and the evaluation of outcomes.

In December 2002 Orange Crush County Health Department (OCCHD) faced a crisis that tested its ability to assess its community's health. The test came in the form of a *Salmonella javiana* outbreak. Time, place and person define an outbreak. The OCCHD was charged with the tasks of investigating the time, place and people in order to assess the Salmonella Scare of 2002. The OCCHD leadership knew right away that they would have to use internal and external collaborations to manage the outbreak. The internal collaborators included the Public Health Administrator, Communicable Disease (CD), Environmental Health (EH), and the Public Information Officer. The external collaborators included the Centers for Disease Control and Prevention (CDC), Illinois Department of Public Health (IDPH), Our Lady of Perpetual Pay Hospital, local health care providers, and local media outlets. These collaborators were assigned different roles in the investigation to help OCCHD determine the cause and extent of the outbreak. When OCCHD determined it had a confirmed outbreak, the required reports were submitted to, and in collaboration with, CDC and IDPH. Communication was maintained with the Orange Crush County Board and residents of the county were notified via news releases to aid in the primary investigation and prevent the occurrence of a secondary outbreak. The final analysis revealed that each external and internal collaborator fulfilled their responsibilities in ensuring that the outbreak was properly investigated and contained.

Immediate public health announcements were aired requesting persons who patronized the eateries involved in this Salmonella Scare to call OCCHD. The OCCHD Public Information Officer developed new public service announcements on food safety and worked with both television and print media to keep the public updated on the status of the outbreak. OCCHD Community Health nurses were assigned to screen callers and

provide instruction on where to seek medical care. OCCHD food sanitarians were assigned to investigate the “not-so-sanitary” eateries and focused on problem-solving issues. Their investigation revealed that essential restaurant equipment had failed and that an employee, who had volunteered at the holiday bazaar and worked at Bubba’s Bar and Grill, was identified as a common carrier. A restaurant had been ordered closed for repairs and, after much discussion and disagreement between county and health department officials, fines were levied. With assistance from IDPH and CDC, OCCHD Epidemiologists tracked the number of infected individuals, noting both confirmed and suspected cases that could be linked to our common place.

Salmonella is a bacterium that is found in the intestines of birds, reptiles, and mammals. It causes a communicable disease, *Salmonellosis* that is characterized by a variety of symptoms that can include headache, abdominal pain, diarrhea, nausea, vomiting, fever, and/or dehydration. *Salmonellosis* is classified as a food-borne illness because contaminated food, usually of animal origin, is the primary mode of transmission. Food may be contaminated at its source or during handling by an ill person or a carrier as well as via person-to-person contact. An individual can become infected by ingesting organisms in food derived from infected food or contaminated feces of an infected person or animal. The infection must be confirmed by testing stool samples from suspected cases. The incubation period is usually 12-36 hours within ingestion of the contaminant and an exposed individual can spread the disease throughout the course of infection. The organism can be excreted from an infected person for as long as a year after initial contact. *Salmonellosis* infection usually lasts 4-7 days and one usually recovers without treatment. A variety of types, or strains, of this bacterium exist, which makes “typing” an important feature in investigating an outbreak. By identifying the exact type, it is then determined if one or more sources are involved.

As you will see, a food-borne illness outbreak can truly become a challenging event for any health department by taxing its personnel and financial resources, as well as working relationships with political, media, and health care entities.

The Timeline of Events

November 30, 2002: Orange Crush County Health Dept (OCCHD) received a positive *Salmonella* test result from Our Lady of Perpetual Pay. OCCHD immediately initiated an epidemiological and environmental food borne illness investigation. The identified patient reported eating at both Bubba's Bar and Grill in Festerville, IL and a holiday bazaar catered by Sam and Ella's Delicious Delights in Diseaser Township, IL three days prior to getting ill. An hour later, OCCHD received a food borne illness complaint from a family that had also eaten at Bubba's in Festerville and the holiday bazaar and became ill.

On this day, OCCHD proceeded with an environmental site inspection at Bubba's Bar and Grill and found "0 ppm" chlorine sanitizer in the dishwasher. It was determined that the sanitizer had not been working for at least a week. In addition, the line cooler for food storage, which was required to keep food at or below 41 degrees, was 43 degrees. The grill manager reported that 2-3 employees and a manager had called in sick with flu-

like symptoms in the past few days, of which one employee had already been cleared by a physician to return to work. OCCHD instructed the manager to have all employees use nailbrushes during hand-washing and use gloves at all times, as well as to get the sanitizer and food liner properly repaired.

The holiday bazaar had already been closed and dismantled, so OCCHD staff began efforts to contact all individuals responsible for food preparation at Sam and Ella's Delicious Delights.

December 1: Two more food borne illness reports were submitted to OCCHD by Our Lady of Perpetual Pay. After staff contacted both identified parties, it was determined that both had eaten at Bubba's Bar and Grill on Nov. 26 and one had also eaten at the holiday bazaar catered by Sam and Ella's.

OCCHD staff arrived at Bubba's at 11:00AM, at which time the manager reported that six employees were now reportedly ill. All six employees were restricted from working. The inspection revealed that both the dishwasher and food cooler were now functioning properly. OCCHD staff was accompanied by Spanish interpreters and once again instructed staff on the requirements of double hand washing, nailbrush use, hand wash logs, and complete glove use. Communicable Disease (CD) and Environmental Health (EH) staff then collected stool samples from all Bubba's employees who were at work. Upon returning to OCCHD, staff received four reports of customers who had eaten at Bubba's with confirmed salmonella as well as several "pending" reports. EH and CD staff returned to Bubba's to find that 13 employees, who had previously been working were now ill with gastrointestinal (GI) symptoms. All of these employees were immediately restricted from work. Due to the high potential for spread of illness, Bubba's was required to cease all operations or face suspension or revocation of its food service permit. Bubba's management voluntarily closed the establishment after their request that they be allowed to stay open and staff the restaurant with workers from their other facilities was denied. The Village of Festerville was notified of the closing and a Notice to Cease Operation letter from OCCHD, explaining the details of the closure, was delivered to the restaurant. A total of 38 stool specimens had been collected to date from employees.

Upon returning to OCCHD, staff were informed that 2 of the ill Bubba's employees also worked at two other Orange Crush County restaurants: Sam and Ella's Delicious Delights and Xema's. OCCHD EH staff was immediately dispatched to both eateries. The managers of both establishments reported not being aware of any staff who also worked at Bubba's nor of any recent staff illnesses. Interviews with staff revealed that no one exhibited similar GI symptoms. EH staff recommended that precautionary measures be taken at both places: double hand-washing, log, nail brush, and gloves. OCCHD staff continued efforts to interview staff working at Sam and Ella's at the holiday bazaar.

December 2: OCCHD staff contacted IDPH, who then began assisting and guiding in the investigation by offering the help of their Rapid Response Team. IDPH proceeded to notify other local county health departments (LCHD) so cross-county cases could be identified and managed. In addition, it was agreed that all stool specimens obtained by

OCCHD would be submitted to the IDPH lab so that the appropriate typing procedures would be conducted.

OCCHD issued a press release informing the public of the Salmonella outbreak and encouraged anyone affected to contact OCCHD so that appropriate medical treatment was provided. All local area primary care physicians, infection control practitioners, and other appropriate health care staff were notified of the outbreak via fax and instructed to report any Salmonella cases to OCCHD CD as soon as possible. Subsequently, CD staff received approximately 100 phone calls from people who had eaten at Bubba's and were ill with GI symptoms. Additional nursing staff was pulled to assist CD staff in collecting information from all callers. It was found that fifteen of these individuals also reported having eaten at the holiday bazaar between Nov. 23 and Nov. 28.

OCCHD EH staff once again conducted inspections at all three restaurants. Stool specimens were obtained from fifty additional employees at Bubba's. It was determined that one employee at Sam and Ella's Delicious Delights also worked at Bubba's, but under a different first and last name. This "Two Name" employee had left the area on vacation on Nov. 28. It was found that one employee at Xema's had GI symptoms and also worked at Bubba's. However, since his test results were negative for Salmonella and his diarrhea did not persist, it was determined to be unrelated to this outbreak. All three establishments were reminded to utilize all precautionary measures.

December 3: It was found that two employees from Bubba's Grill in Grungy Village had eaten at Bubba's Grill in Festerville and were now ill with GI symptoms. Bubba's Bar and Grill had begun testing their employees in Grungy Village and received 2 positive and 1 presumptive positive reports.

OCCHD CD and EH staff returned to Bubba's in Festerville to provide additional stool testing, at which time a total of 59 employees had provided specimens.

EH staff conducted inspections at all three establishments and once again instructed all employees on precautionary measures.

Discussions with co-workers and family members enabled a phone interview to occur between a CD staff member and "Two Name". This employee denied being ill but did report working at Bubba's in Festerville and Sam and Ella's Delicious Delights in Diseaser Township during the days that the illness most likely spread. "Two Name" was informed that he would be restricted from working at both facilities until an in-person interview and lab testing, if indicated, was completed by OCCHD CD staff.

By 4:00 PM, EH received a customer complaint that Bubba's in Festerville was without water at 11:00 AM on Nov. 27 when she had dined there.

December 4: IDPH informed CDC of this Salmonella outbreak. Local newspaper reports indicated that some of the victims were now seeking legal representation from Mercy and Less' Law Associates, whose specialty was medical litigation cases.

December 5-6: Daily inspections continued to be performed by EH staff, stressing hygiene, temperature-control, and cross contamination prevention.

December 7: OCCHD received reports from Our Lady of Perpetual Pay that 17 employees from Bubba's in Festerville were confirmed positive Salmonella cases. Of

these 17, one employee also worked at Sam and Ella's. CD staff collected additional stool specimens from Bubba's employees in Festerville. Inspections of Bubba's in Grungy Village and Sam and Ella's were performed, stressing prevention techniques.

December 8: CD had received a total of 30 confirmed positive Salmonella reports for Bubba's patrons in Festerville and 20 confirmed employees. Bubba's corporate office requested the Festerville restaurant be re-opened on Dec. 10 or 11 as they believed they would have enough negative-testing employees (two consecutive negative tests). They requested an inspection on Dec. 9. Corporate management continued to collect and send employee stool specimens to Bonkers' Lab Corp for both Festerville and Grungy Village employees. In the meantime, OCCHD staff sent a letter to all of Orange Crush County's medium and high-risk facilities informing them of the outbreak and stressing the importance of hand washing and identifying/restricting ill employees from work. Two suspect food specimens were collected for analysis from Festerville Bubba's patrons who had provided leftover food samples. In addition, EH confirmed with Bubba's management that the Festerville establishment had been without hot water all day on Nov. 26 and from 11:00 AM until 12:45 PM on Nov. 27.

"Two Name" returned from vacation and CD staff conducted a face-to-face interview during which he denied any recent illness but did appear ill based upon his physical appearance. CD staff obtained a precautionary stool specimen. EH staff conducted inspections of Bubba's in Grungy Village and Sam and Ella's, again stressing hygiene and prevention measures.

December 9: OCCHD CD staff had now received reports of 83 confirmed cases (both patrons and employees) and over 100 probable or suspect cases. Two more suspect food specimens were collected for analysis: one from a patron who had leftovers from Bubba's in Festerville and one from a patron from Bubba's in Grungy Village.

To prepare for Bubba's possible re-opening in Festerville, CD staff was busy obtaining and organizing all employee specimen results and developing a list of "cleared" employees. Lab results for "Two Name" were negative, so the employee was returned to work. OCCHD staff determined that it was very unlikely that the staff or food products at Sam and Ella's eatery at the holiday bazaar were responsible for the spread of this outbreak due to this negative test.

EH staff conducted inspections at Bubba's in Grungy Village and Sam and Ella's, stressing hygiene and prevention measures.

December 10: Accompanied by Festerville officials, OCCHD EH staff conducted an inspection of Bubba's in Festerville. The inspection was to clear them for re-opening on Dec. 11, pending a hand-washing demonstration and inspection immediately prior to opening.

EH staff then conducted inspections at Bubba's in Grungy Village and Sam and Ella's, stressing hygiene and prevention measures.

December 11: OCCHD EH staff conducted an inspection and hand-washing demonstration/training at Bubba's in Festerville. The Bar and Grill was granted approval to operate and reopened at 11:00 AM.

EH staff conducted inspections at Bubba's in Grungy Village and Sam and Ella's, stressing hygiene and prevention measures.

December 12: OCCHD CD staff released 12 employees to work after assuring they met release requirements.

EH staff conducted inspections at Bubba's in Grungy Village and Sam and Ella's, stressing hygiene and prevention measures.

December 13: OCCHD EH staff conducted inspections at Bubba's and Sam and Ella's.

December 14: OCCHD staff requested additional nursing assistance from other OCCHD program areas to continue case interviews and handle incoming calls.

EH staff conducted inspections at Bubba's in Grungy Village and Sam and Ella's.

December 15: OCCHD CD staff received lab results on the positive Bubba's patron from Grungy Village, indicating the Salmonella strain was the same as the Festerville cases. Another positive Salmonella report was then received on an employee working at Bubba's in Festerville who also worked at Zitties, also located in Diseaser Township. OCCHD EH staff presented to Zitties to notify management of this positive employee and to inform them that he was restricted from working until cleared by OCCHD. During this visit, EH staff learned that this employee's wife also worked at Zitties. During an interview with her, it was found that she was having possible GI distress symptoms and was subsequently restricted from work until her stool samples provided appropriate proof that she was safe to return to work. All other employees working at Zitties were interviewed and found to be free of GI symptoms.

EH staff conducted inspections at both Bubba's establishments in Festerville and Grungy Village, also stressing hygiene and prevention measures.

December 16: OCCHD EH staff received results from the leftover food samples submitted on Dec. 8 and 9: two samples were positive for Salmonella javiana and two were negative. Of the two negatives, a confirmed positive patron from Festerville submitted one food sample while a patron from Bubba's in Grungy Village who had not been tested submitted the other. It was then determined that a male employee from Bubba's in Grungy Village (who had earlier tested negative but was now positive) lived with a positive-testing woman from Bubba's in Festerville.

Specimens from an additional 15 employees from Bubba's in Festerville and one from Zitties were obtained while EH staff continued to interview employees from Zitties. CD staff continued to investigate cases. 55 phone messages had been left from the previous day and follow-up of cases had to be completed to prevent secondary outbreaks. In addition, staff had to organize lab results in order to safely release restaurant employees back to work.

EH staff conducted an inspection of both Bubba's establishments, stressing hygiene and prevention measures.

By the end of the day, CDC had determined, in collaboration with IDPH lab, that the strain of Salmonella identified in this outbreak was not linked to any other outbreak in the US.

December 17: OCCHD CD staff continued to investigate and follow up on cases while EH staff conducted inspections of both Bubba's establishments.

December 18: OCCHD CD staff received another positive report from Lab Cops on a Bubba's employee from Festerville. During the interview, the employee indicated that his wife worked at Zitties but refused to release her name or any additional information. CD contacted EH staff, who learned of the wife's identity by visiting Zitties. The wife denied any illness and was allowed to continue working pending submission of 2 consecutive negative stool specimens.

CD staff continued to investigate and follow up on cases, as well as organize lab results to release employees back to work.

EH staff conducted inspections of both Bubba's establishments, stressing hygiene and prevention measures.

Conclusion

This case of the Sanitary (or lack thereof) Eateries is based upon real-life experiences and dependent upon effective community and group relationships and leadership dynamics. Represented in this case is an analysis of OCCHD's ability to respond to a food borne outbreak during a time when a major component, Sal and Ella's holiday bazaar, was no longer operational and while assessing and analyzing all the other multiple factors. The core public health function of assessment demonstrated the need for increased monitoring of various groups, as one organization cannot achieve its performance goals at the expense of others.

New issues and challenges arise on a daily basis for organizations. With public health leadership cognizant of these challenges, investigative and assessment techniques, and state requirements, the final analysis of this investigation was guided by assessment, assurance, and policy development considerations. Several barriers existed that could have changed the outcome of the investigation and caused a major epidemic. It was inherent that the public health workers provided buy-in to all stakeholders to ensure that communication was provided to many, and all, collaborators. This essential collaboration by all stakeholders was conducive to successfully bridge the agreed-upon and accepted rights and responsibilities of the food establishments, health care providers, county board, board of health, local health department, state public health, CDC, and media to ensure the public's health and safety.

Study guide questions

1. What aspects of the case could have been handled differently to improve the assessment process?
2. How would the scope of the investigation impact other departments based upon size and resources?
3. What are some of the political and community pressures that would come to bear in situations impacting large numbers of people in the community?
4. Do you handle fines and penalties similarly in all situations regardless of whether the owner/operator is cooperative?
 - Can we afford to look at exceptions to the rules?
 - And, if so, what are those exceptions?
 - Then how do we enforce the rules that have exceptions without violating regulations (i.e. being discriminatory)?
 - Who makes the ultimate decision?
5. Was the media an obstacle?
 - Should more media avenues have been utilized?
 - If so, how?
6. How do you overcome the hesitancy of some workers to openly describe their recent health history for fear of having to stop work and receive no income for a period of time?
7. How do you address issues of cultural sensitivity and personal privacy when trying to conduct medical interviews and posing questions on personal health history?
8. What are some incentives that public health should consider implementing to get people to come forward and facilitate accurate data collection?
9. What issues pertain to the topic of “Communication” as it involves:
 - Sending info to/from the provider community?
 - Informing the community?
 - Working with news media?
 - Working with elected officials?
 - Coordinating with other health departments and government agencies?
10. What other core functions of public health could be applied to this case?

References

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Websites

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