Botulism Outbreak - April 2015

A Local Health Department Perspective

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Largest botulism outbreak in the United States in nearly 40 years

Outbreaks of botulism with more than 10 cases — United States, 1973–2015

<table>
<thead>
<tr>
<th>Year</th>
<th>State</th>
<th>No. of cases</th>
<th>No. of deaths</th>
<th>Implicated food</th>
<th>Home-canned ingredient</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977</td>
<td>Michigan</td>
<td>58</td>
<td>0</td>
<td>Peppers</td>
<td>Yes</td>
<td>Restaurant</td>
</tr>
<tr>
<td>1978</td>
<td>New Mexico</td>
<td>34</td>
<td>1</td>
<td>Bean and potato salad</td>
<td>Unknown</td>
<td>Country club</td>
</tr>
<tr>
<td>1983</td>
<td>Illinois</td>
<td>28</td>
<td>0</td>
<td>Fried onions</td>
<td>No</td>
<td>Restaurant</td>
</tr>
<tr>
<td>1994</td>
<td>Texas</td>
<td>23</td>
<td>0</td>
<td>Baked potatoes used in skordalia eggplant dip</td>
<td>No</td>
<td>Restaurant</td>
</tr>
<tr>
<td>2001</td>
<td>Texas</td>
<td>16</td>
<td>0</td>
<td>Frozen, canned chili</td>
<td>No</td>
<td>Church</td>
</tr>
<tr>
<td>2015</td>
<td>Ohio</td>
<td>29</td>
<td>1</td>
<td>Potato salad prepared with home-canned potatoes</td>
<td>Yes</td>
<td>Church</td>
</tr>
</tbody>
</table>

Source: CDC. Foodborne Disease Outbreak Surveillance System, unpublished data.
On April 21, 2015 at approximately 10:30am, the Fairfield Department of Health (FDH) received initial notification of a suspected Botulism case at the local hospital ICU. The suspect food was wild mushrooms.

- Foodborne Botulism is a Class A. Ohio Department of Health (ODH) notified. Anti-toxin requested.
- Epi Team notified; stand-by status
Timeline Summary
Day 1

- By 1pm, there were 3 suspect cases, 7 symptomatic individuals in the Emergency Department and possibly 50 implicated. From preliminary interviews, the suspect food was now homemade potato salad from a church potluck.
  - ICS/Epi Team fully activated.
  - Local hospital was transferring patients to Central Region hospitals due to limited bed capacity (Ventilators). Regional Health Care Coordinator was assisting with regional coordination.
  - ODH Coordination Call with FDH @ 2pm
  - Regional Public Health Coordinator notified for T2 Epi support
  - First press conference @ 1430 (local hospital)
Timeline Summary

Day 1

- Throughout evening:
  - Anti-toxin – initial release was 5 doses based on patients, went to 50 doses as numbers increased
  - Case Finding – patient line lists, attendee lists, church roster
  - Food histories – questionnaires, interviews, menu list, potential sample availability
  - Media inquiries
  - Coordination calls ODH/Regional Health Care Coordinator/Regional Public Health Coordinator/Hospital /EMA
# ICS Structure/Epi Team

## Incident Commander
- **Administrator**

## SME
- **HC/MD**

## PIOs
- Primary
- Alternate

## Liaisons
- Hospital @ FDH
- FDH @ Hospital
- EMA @ Hospital

## DOC Support
- Primary
- Alternate

## Planning
- **PHEP Coordinator**

## Operations
- **Nursing Director**

## Finance/Admin
- Fiscal Officer
- Fiscal Clerk

## Logistics
- Administrative Asst.
- Clerk/IT

## Epi Investigation
- **PHN**
- Sanitarian

## Regional Support: T2 Epi

## State Support: Outbreak Response Team

## Federal Support: CDC Epi Aid Team

## Env. Sampling
- **Environmental Director**

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**Positions in RED are Epi Team Members**

**Assigned Staff: 15 (50% of staff)**
Timeline Summary

Day 2

- 17 suspected cases; 16 under observation, 1 death
- Food samples obtained (FDH), Clinical samples obtained (Hospitals)
- Joint Press Conference FDH & Hospital @ 1200
- Continue case finding and questionnaire interviews with potluck attendees and suspected cases
- Coordination conference calls
- ODH Outbreak Response Team arrives at FDH with in-house CDC EIS Officer.
- CDC Epi Aid to arrive next day.
Collecting Food Samples
Timeline Summary

Days 3 & 4

- ODH Outbreak Team on site; CDC Epi Aid Team arrives
- Case finding, patient tracking (patient hospital status), updating line lists, interviews of patients and attendees, food samples, evidence management (additional canned food items), rule out intentional release (Category A Agent, Watch List), Anti-toxin updates (SNS Asset), public information.
- Wellness Checks on asymptomatic attendees (Hospital and Law Enforcement)
- And day to day essential functions
FDH DOC
By the end of Day 4:

- Preliminary analysis of questionnaires is indicating homemade potato salad as significant; commercial potato salad as moderate.
- Lab:
  - 2 patients testing positive (stool) for Type A
  - 2 food items testing positive for Type A: potato salad and macaroni & cheese; possible cross-contamination.
- Counts:

<table>
<thead>
<tr>
<th></th>
<th>Confirmed (Includes 1 death)</th>
<th>Suspect (Observation)</th>
<th>Attendees</th>
<th>Questionnaires Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friday</td>
<td>20</td>
<td>9</td>
<td>76</td>
<td>55</td>
</tr>
</tbody>
</table>
Over the Weekend
Days 5 & 6

By Sunday (Day 6):
• Interviews of discharged patients and attendees.
• Plan outreach meeting to church congregation.
• Case definition was being further defined to capture any potato salad (2 commercial and 1 homemade at potluck).
• Statistics are strong for food, still missing attendee link to homemade potato salad.
• Epi Aid Team will attempt to get questionnaires on patients in Columbus hospitals.
• Started to see attendees who were originally asymptomatic returning to hospital with symptoms.

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<th>Questionnaires</th>
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<tr>
<td></td>
<td>(Includes 1 death)</td>
<td>(Observation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunday</td>
<td>21</td>
<td>10</td>
<td>77</td>
<td>75</td>
</tr>
</tbody>
</table>
Final Days (Days 7 – 11)

- Continuing to see attendees who were originally asymptomatic returning with symptoms, numbers declined.
- Interviews of discharged patients and attendees, final wellness checks on asymptomatic attendees. Outreach meeting to church congregation. FDH deactivates ICS Weds. (Apr. 29 – Day 10)
- ODH Outbreak Team/Epi Aid complete a preliminary analysis on the food histories
- ODH Coordination Calls:
  - Daily at 1100; Final on Fri
  - ODH Outbreak Team – Mon
  - PIOs - Mon
  - Lab call – Thurs
  - Epi Aid Closing call - Thurs
Scaling Back
Data

- Of 77 persons who consumed potluck food, 29 (38%) met a case definition
  - 24 confirmed
  - 5 probable
- All except 2 patients initially presented to FMC; many were transferred to 6 Columbus metropolitan-area hospitals.
  - 25 patients (86%) received BAT
  - 11 (38%) were intubated
  - By April 28, 18 patients (62%) had been discharged from hospitals.
- Illness onset had a median of 2 days after the potluck (range: 1-6 days).
- Clinical specimens were positive for botulinum neurotoxin type A and Clostridium botulinum type A.
- Of 24 food specimens collected from the dumpster; 6 specimens were positive for botulinum neurotoxin type A.
Implications

- Menu Item: Homemade Potato Salad
- Food Item: Home Canned Potatoes
- Probable Mechanism: Improper food processing
Recovery – Return to normal operations

• Document Collection and Review
  ▪ Media & Insurance Companies
  ▪ Redaction
  ▪ Record Retention

• AAR Meetings – Internal and Community

• AAR/IP
Lessons Learned

- Regional, State and Federal Assistance
  - Individually we may be small, but with our friends, we are mighty
  - We are not in this alone, ask for help
Lessons Learned

• Local Coordination
  o Liaisons vs Unified Command; Pros & Cons
  o What had worked before (H1N1), did not work so well in this situation
  o Communication and Coordination; multi-agency, multi-level
Lessons Learned

• Constant State of Readiness
  o Botulism was fast and deadly. No time to “review” procedures.

• Responder Fatigue
  o Be Aware - People can get a little snippy after a few days. If possible, rotate staff as needed.
Lessons Learned

• Personal Connections
  o Living in the community where you work can make things complicated, particularly in small towns. Most staff personally knew someone impacted by this event. It became personal.
Additional Reading

Morbidity and Mortality Weekly Report
MMWR / July 31, 2015 / Vol. 64 / No. 29

Notes from the Field: Large Outbreak of Botulism Associated with a Church Potluck Meal — Ohio, 2015

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6429a6.htm?s_cid=mm6429a6_w
Comments or Questions?