A Multidisciplinary Approach to Investigating Foodborne Illness Outbreaks

June 26, 2019
Overview

• Seattle-King County’s Approach to Foodborne Illness Investigation

• Q&A Session
Housekeeping Items

Throughout the presentation, please use the Q&A box to ask questions and the chat box to share your experiences. The facilitator will pose your questions to the presenters.
A link to the recorded webinar will be emailed to all participants. This recording and past food safety sharing sessions can also be found on the NACCHO website:

FOODBORNE ILLNESS OUTBREAK INVESTIGATION OVERVIEW

PUBLIC HEALTH – SEATTLE & KING COUNTY
FOODBORNE ILLNESS INVESTIGATION TEAM
June 26, 2019

NACCHO Sharing Session

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KING COUNTY, WASHINGTON
SEATTLE
STAFF – BY THE NUMBERS

Environmental Health Food Program: 65 staff
Communicable Disease Epidemiology: 40 staff
Communications: 8 staff
TEAM APPROACH

Epidemiology
Lab
Env. Health
Communications
FOODBORNE ILLNESS INVESTIGATION TEAM (FIIT)

- EH Members in Training
- EH Food Program Leads
- EH Experienced Members
FOODBORNE ILLNESS INVESTIGATION TEAM (FIIT)

Responsibilities

- **EH Members in Training:** 7 staff
- **EH Experienced Members:** 10 staff
- **EH Food Program Leads:** 12 staff

**Back-up to experienced members**

- **Provide technical advice and support**
- **Partner with restaurant investigator in the field**

Responsibilities:

- Provide technical advice and support
- Partner with restaurant investigator in the field
- Back-up to experienced members
EH Members in Training: 7 staff
EH Experienced Members: 10 staff
Epi Food Program Leads: 12 staff
Comms: 2
Epi: 4
FOODBORNE ILLNESS INVESTIGATION TEAM (FIIT)

Lead Roles

- EH Members in Training
- EH Experienced Members
- EH Food Program Leads
- Epi Foodborne Liaison Lead
- Senior Foodborne Technical Lead
- Comms Foodborne Lead
WHY HAVE A FIIT?

- Small group with expertise
- Increases investigation consistency & effectiveness
- Clear roles/responsibilities
- FIIT members are:
  - Capable to perform many roles as needed
  - Ready to deploy
  - Mentors
OUTBREAK INVESTIGATION PROCESS
1. RECEIVE REPORTS

Salmonella
2. PLAN APPROACH

Comms

EH

Epi

Lab
2. TEAM PREP

Field investigation team

EH Restaurant Investigator

EH FIIT Investigator

Epi Investigator (as needed)

Comms
2. TOOLKIT ESSENTIALS

✓ Planning checklist
  ▪ Guides prep for field investigation (before, during, after)
2. TOOLKIT ESSENTIALS

☑ Planning checklist
  ▪ Guides prep for field investigation (before, during, after)

☑ Organism-specific resource guide
  ▪ Guide to tailor investigation into CF’s for typical foodborne pathogens
Environmental Investigation of FOODBORNE ILLNESS for Salmonella

On site Investigation
- Ill food workers (e.g., work schedule)
- Check eggs for improper temperature storage. Check other cold holding temperatures.
- Observe handling of eggs, raw poultry, and unpasteurized milk and cheese products
- Bare hand contact
- Hand washing facilities and practices
- Observe food heating practices (i.e., are raw meat/beef held hot or is there a consumer advisory?)
- Observe kitchen stations for cross-contamination
- Thoroughly inspect equipment such as skimmers, processors, and lye burners
- Review menus of ready-to-eat foods that could have been contaminated during production or processing

PH Interventions
- If outbreak appears to be on-going, consider closure
- Employees who are infected with Salmonella should not prepare food for others while they have symptoms and for 3 days after they recover from their illness (after diarrhea subsides)
- Employees diagnosed with S. typhi must be cleared by CD Epi prior to returning to work
- All foods implicated should be put on HOLD Order
- Consider requesting operator recall suspect foods that were prepared on-site and sold packaged
- Thorough cleaning of kitchen and equipment
2. TOOLKIT ESSENTIALS

- Planning checklist
  - Guides prep for field investigation (before, during, after)
- Organism-specific resource guide
  - Guide to tailor investigation into CF’s for typical foodborne pathogens
- Resources for operators
  - Includes chlorine concentrations for noro; FDA illness policy forms
VOMITING AND DIARRHEA CLEANUP

HOW TO CLEAN UP VOMIT, DIARRHEA & BLOOD

1. PROTECT YOURSELF.
   - Wear disposable plastic or rubber gloves.
   - Wear a disposable mask and an apron if available.
   - Use paper towel.
   - Wash hands with soap and warm water after cleaning.

2. REMOVE VOMIT OR DIARRHEA RIGHT AWAY.
   - Use an absorbent material like kitty litter or baking soda on upholstery and carpets. Dispose of contaminated materials in plastic bag. Do not vacuum.

3. CLEAN ALL SOILED & NEARBY SURFACES WITH SOAPY WATER.
   - Door knobs
   - Toilet handles
   - Machine-wash clothing

4. DISINFECT SURFACES WITH BLEACH SOLUTION.
   - Mix 3/4 cup bleach with 1 gallon of water. If 5.25% bleach, increase to 1 cup.
   - Apply bleach solution, leave for 5+ minutes.
   - After applying bleach, rinse all surfaces with water.
2. TOOLKIT ESSENTIALS

✓ Planning checklist
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✓ Organism-specific resource guide
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✓ Resources for operators
  ▪ Includes chlorine concentrations for noro; FDA illness policy forms

✓ Employee illness screening forms
  ▪ Self-report form in multiple languages
2. TOOLKIT ESSENTIALS

- Planning checklist
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- Resources for operators
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- Employee illness screening forms
  - Self-report form in multiple languages
- Environmental Assessment (EA) Form
  - WA’s modified version of the CDC NEARS form
ENVIRONMENTAL ASSESSMENT FORM

Environmental Assessment (Field Investigation)

Date: ___ Time: ___ Select am/pm

Investigated FE at a similar time as when meal was prepared or served? Select one

What did the cases have in common? (Check all that apply.)
- Food
- Food Worker
- Equipment

Flow Charts Flow Charts are required for each implicated food. Are Flow Charts Attached? Select one

Implicated Foods Implicated Foods are foods suspected or confirmed to be directly associated with illness. Not all common foods are Implicated Foods.

Note: If a specific food or multi-ingredient food is not implicated explain why food is the suspected vehicle in this outbreak.

Multiple Ingredient Food – Taco
Taco: Ground Beef, Cheese, Onion, Tomato, Corn Tortilla

Single Ingredient Food – Eggs
Eggs, scrambled

Multiple Foods
RTE Salads, Sandwiches, Chips

List the Implicated Food item(s) and the ingredients directly linked to illnesses. Follow the format of the examples listed above.
1. ___

2. __

How does the implicated animal/seafood product #1 arrive? (Select N/A if not an animal/seafood product.)
Select one
- if Other, explain N/A

How does the implicated animal/seafood product #2 arrive? (Select N/A if not an animal/seafood product.)
Select one
- if Other, explain ___

How does the implicated plant product #1 arrive? (Select N/A if not a plant product.)
Select one

How does the implicated plant product #2 arrive? (Select N/A if not a plant product.)
Select one

Are any implicated foods or ingredients imported? Select one If Yes, describe what indicates this is an imported food (Receipts, Tags):
1. ___

2. ___

Food worker possible source of illness? Select one

# of ill/infected food workers found: ___

How was food workers’ health status evaluated? Select one
2. TOOLKIT ESSENTIALS

- Planning checklist
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- Resources for operators
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- Employee illness screening forms
  - Self-report form in multiple languages
- Environmental Assessment (EA) Form
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- Sampling kits
  - Specimen kits and cooler for use if indicated
3. FIELD INVESTIGATION REQUEST

Epi submits standardized request form to EH.
# INVESTIGATION REQUEST FORM

## REQUESTED EH ACTIONS

- Vendor contact/check-in only
- FBI Field Investigation
- Routine Inspection
- DOH Environmental Assessment (Form II)
- Oyster/Shellfish Tags and temperatures
- Food/Environmental Samples:
  - Food flow Diagram(s):

## DISEASE SPECIFIC ENVIRONMENTAL INVESTIGATION FORMS TO TAKE WITH YOU

<table>
<thead>
<tr>
<th>Virus</th>
<th>Norovirus</th>
<th>Hepatitis A</th>
<th>Toxin</th>
<th>Bacillus cereus</th>
<th>Clostridium perfringens</th>
<th>Staphylococcus aureus</th>
<th>Clostridium botulinum</th>
<th>Bacteria</th>
<th>Campylobacter</th>
<th>Listeria</th>
<th>Salmonella</th>
<th>Shiga toxin-producing E. coli</th>
<th>Vibrio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Other:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Other:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Public Health
Seattle & King County
4. TEAM PREP CALL

- Epi Investigator
- EH Restaurant Investigator
- EH FIIT Investigator

Field team included
5. FIELD INVESTIGATION

SAM & ELLA'S DINER
5. FIELD INVESTIGATION ROLES

**EH FIIT INVESTIGATOR**
- Explains process to person in charge at restaurant
- NEARS form data
- Diffuses tension
- Collects samples (if indicated)

**EH RESTAURANT INVESTIGATOR**
- Conducts routine inspection, with focus on contributing factors for *Salmonella*

**EPI INVESTIGATOR**
- Screens staff for illness
- Observational data
- Assists EH investigators
6. TEAM FIELD CALL

Field investigation team

EH Restaurant Investigator
EH FIIT Investigator
Epi Investigator

EH / Epi leads

- Review field findings
- Answer questions from restaurant management
- Make decisions on immediate interventions
- Discuss sample collection
7. TEAM DISCLOSURE MEETING

EH + Epi + Comms

Review:
✓ Findings from Epi, EH, and Lab
✓ Strength of evidence
✓ Interventions and remaining steps
✓ Need for disclosure
✓ Need for blog
### 8. PUBLIC DISCLOSURE

**Foodborne illness outbreaks**

Investigation summaries

- Report possible foodborne illness
- File a food safety complaint
- Food business closures

Select a tab below to display a list of investigations and current state and national outbreaks:

<table>
<thead>
<tr>
<th>Date posted</th>
<th>Last updated</th>
<th>Food business</th>
<th>Suspected organism</th>
</tr>
</thead>
<tbody>
<tr>
<td>04-17-19</td>
<td>04-17-19</td>
<td><strong>Purple Café and Wine Bar, Cast Iron Studios, and Lot No. 3 in Bellevue</strong></td>
<td>Norovirus</td>
</tr>
<tr>
<td>04-08-19</td>
<td>04-09-19</td>
<td><strong>Dave &amp; Buster’s</strong></td>
<td>Norovirus</td>
</tr>
<tr>
<td>03-20-19</td>
<td>03-20-19</td>
<td><strong>Seafood City</strong></td>
<td><em>G. hollisae</em></td>
</tr>
<tr>
<td>01-31-19</td>
<td>03-13-19</td>
<td><strong>La Fuente</strong></td>
<td>Norovirus</td>
</tr>
<tr>
<td>01-28-19</td>
<td>03-13-19</td>
<td><strong>Thai Woodinville</strong></td>
<td><em>B. cereus</em></td>
</tr>
<tr>
<td>01-02-19</td>
<td>03-13-19</td>
<td><strong>Xi’an Noodles</strong></td>
<td><em>B. cereus</em></td>
</tr>
</tbody>
</table>

[www.kingcounty.gov/outbreak](http://www.kingcounty.gov/outbreak)
Health officials, who investigated the outbreak, did not inform the public. "I find that completely, unequivocally wrong," said Bill Marler, a food safety litigating in Seattle. "They have a responsibility to the public."
8. WHICH OUTBREAKS TO DISCLOSE?

Investigation led by King County, and cluster was:

**CONFIRMED**: FBD outbreak with lab evidence confirming the outbreak etiology

**PROBABLE**: FBD outbreak with observational evidence and contributing factors without lab evidence

**SUSPECT [possible]**: Group of cases linked by time or place without strong evidence linking to a common food
8. TIMING OF DISCLOSURE

Disclose while investigation is ongoing if:

✓ Risk to the public still exists
✓ Public can take action to protect their health
✓ Severe outcomes seen
✓ Case finding is needed
✓ Need to prevent or interrupt misinformation
✓ High profile concerns (media or political)
✓ Novel vehicle identified

Otherwise, disclose once investigation is complete
9. FOLLOW-UP STEPS

- Follow-up site visit(s) by EH
- Work with WA DOH Lab on testing specimens
- Work with local, state, and federal partners
- Update public disclosure with final outcomes
- Complete report forms (NEARS/NORS)
10. AFTER ACTION REVIEW

- What was supposed to happen?
- What actually happened?
- What can be improved next time?
- What worked & what was challenging?
BENEFITS OF TEAM APPROACH

Many perspectives

Increased cultural competency

Delineates roles

Builds expertise

More effective & efficient

Increases trust
CHALLENGES OF TEAM APPROACH

- Filling absences
- Maintaining experience
- Too many cooks in the kitchen

Every investigation is unique
Balancing thoroughness with efficiency
LESSONS LEARNED

- Hold after action debriefs
- Maintain equal partnerships, not hierarchical
- Quarterly FIIT meetings and frequent trainings
  - Table top exercises
  - Case reviews
- Disclosure process is time intensive but effective
  - PH leads by speaking first, reducing misinformation
  - Decreased media calls
LESSONS LEARNED

- Identify points-of-contact for each program
- Include Epi investigator in EH field visits
- Share data across programs
- Team approach requires broad engagement
- Make time for process improvement activities
- Develop consistent tools internally and externally
Thank you!

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RESOURCES

- Council to Improve Foodborne Outbreak Response (CIFOR): www.cifor.us
- FDA Retail Program Standard 5 - Foodborne Illness and Food Defense Preparedness and Response: www.fda.gov/media/86813/download
- Epi-Ready Team Training: www.neha.org/professional-development/education-and-training/epi-ready-team-training
- Council of State and Territorial Epidemiologists (CSTE): www.cste.org/page/WebinarLibrary
Q&A Session
Thank you for your participation in today’s sharing session!

For more information about NACCHO’s Food Safety and Infectious Disease Programs, contact:

- Amy Chang (achang@naccho.org)
- Erin Laird (elaird@naccho.org)


NACCHO Infectious Disease Webpage: https://www.naccho.org/programs/community-health/infectious-disease