Foodborne illnesses with CDC case report forms

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Communicable Disease Service

Objectives of foodborne surveillance

<table>
<thead>
<tr>
<th>Short-Term Objectives</th>
<th>Intermediate</th>
<th>Long-term Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detect foodborne disease events of public health importance</td>
<td>Determine etiology, vehicle, and contributing factors of foodborne disease outbreaks</td>
<td>Prevent future outbreaks</td>
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<tr>
<td>Respond to events in a timely manner</td>
<td>Monitor trends to identify emerging foodborne diseases and food safety problems</td>
<td>Reduce incidence of foodborne illness</td>
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<tr>
<td>Intervene when appropriate to prevent illness</td>
<td>Increase knowledge of foodborne disease causes and abatement strategies</td>
<td>Increase health of the general population</td>
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</tbody>
</table>

Foodborne Illnesses with CDC Case Report Forms

- Cyclosporiasis (CDS-39)
- Listeriosis (CDC-LCR)
- Typhoid/Paratyphoid (CDC-52.5)
- Vibriosis (CDC-52.79)

Completed case report forms to be FAXED to NJDOH at (609) 826-5972

Case Report forms should NOT be faxed to providers!

Cyclosporiasis

- Causative agent
  - Cyclospora cayetanensis
- Incubation period
  - 2-14 days, avg. 7 days
- Transmission
  - Person-to-person spread unlikely
  - Travel to tropical and sub-tropical areas
  - Consumption of contaminated produce imported

Cyclosporiasis

- Symptoms
  - Watery diarrhea, loss of appetite, weight loss, cramping, bloating, nausea, fatigue, vomiting & low grade fever (less common)
- Case Definition
  - Confirmed
  - Probable
- Testing
  - Microscopy
  - PCR

Cyclosporiasis

- NJ Stats

Cyclosporiasis

- National Outbreaks
  - Raspberries
  - Basil
  - Other produce
Cyclosporiasis
- Prevention
  - Avoid drinking unboiled or untreated water
  - Thoroughly wash fresh fruits/vegetables before consumption.
- CDRSS Entry
  - Travel, food history especially consumption of fresh berries, fruits, leafy greens, herbs and sources of food
- Resources
  - CDC Cyclosporiasis
  - NJDOH Chapter/Checklist/Case Report Form/FAQ

Listeriosis
- Causative agent
  - Listeria monocytogenes
- Incubation period
  - 7-10 days, avg. 2/3 weeks
- Transmission
  - Foodborne transmission
  - Pregnancy
- Symptoms
  - Pregnant women: (flu-like symptoms, fatigue, muscle aches)
  - Other: (fever, muscle aches, headache, stiff neck, confusion, loss of balance, convulsions)
- Case Definition
  - Confirmed
- Testing
  - Culture
  - PFGE/WGS
- NJ Stats
  - Raw milk cheese
  - Packaged salads
  - Ice cream
  - Caramel Apples
- National Outbreaks
  - 2012: 44
  - 2013: 29
  - 2014: 17
  - 2015: 26

Listeriosis
- Checklist
- Case Report Form
Listeriosis

- **Prevention**
  - Make sure label says ‘pasteurized’
  - High Risk categories should avoid soft cheeses
  - Cook sprouts thoroughly
  - Eat cut melon right away or refrigerate
  - Cook and store hot dogs, lunch meat appropriately
- **CDRSS Entry**
  - Pregnancy, underlying conditions, food history especially consumption of unpasteurized dairy, asparagus, salmon, shellfish, vegetables, salads, grocery stores, restaurants
- **Resources**
  - CDC Listeriosis
  - NJDOH Chapter/Checklist/Case Report Form/FAQ

Typhoid/Paratyphoid Fever

- **Causative agent**
  - Salmonella typhi/paratyphi
- **Incubation period**
  - 8-14 days/ 1-10 days
- **Transmission**
  - Consumption of contaminated food/water
  - Person-to-person

Typhoid/Paratyphoid Fever

- **Symptoms**
  - High fever, weakness, stomach pains, headache, loss of appetite, rash (some cases)
- **Case Definition**
  - Confirmed
  - Probable
- **Testing**
  - Culture
  - NARMS

Typhoid/Paratyphoid Fever

- **NJ Stats**

Typhoid/Paratyphoid Fever

- **Prevention**
  - Avoid risky foods and drinks
  - Get vaccinated
- **CDRSS Entry**
  - Travel, purpose of travel, citizenship, vaccination, antibiotic sensitivity testing
- **Resources**
  - CDC Typhoid/Paratyphoid Fever
  - NJDOH Chapter/Checklist/Case Report Form/FAQ
**Vibriosis**

- **Causative agent**
  - Vibrionaceae

- **Incubation period**
  - 12-72 hrs

- **Transmission**
  - Consumption of raw/undercooked shellfish
  - Open wound exposures to brackish water

**Symptoms**
- Abdominal cramping, nausea, vomiting, fever, chills

**Case Definition**
- Confirmed
- Probable

**Testing**
- Culture
- PCR
- NARMS

**NJ Stats**

<table>
<thead>
<tr>
<th>Year</th>
<th>Vibrio Infections (other than V.Cholerae Sp.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>41</td>
</tr>
<tr>
<td>2013</td>
<td>56</td>
</tr>
<tr>
<td>2014</td>
<td>34</td>
</tr>
<tr>
<td>2015</td>
<td>34</td>
</tr>
</tbody>
</table>

**National Outbreaks**
- Atlantic Coast
- Maryland
- Raw Shellfish

**Checklist**

**Case Report Form**

**Prevention**
- Avoid raw/undercooked oysters or shellfish
- Stay out of brackish waters if you have a wound

**CDRSS Entry**
- Travel, food history especially consumption of seafood, water exposure, grocery stores, restaurants

**Resources**
- CDC Vibrios
- NJDOH Chapter/Checklist/Case Report Form/FAQ

**Timeliness of interviews**
- Improves exposure recall
- Provides prompt prevention education
- Identifies additional cases
- Helps detect clusters/outbreaks
- Limits future transmission
- Identifies potential vehicles
Not All E.coli are Equal

E. Coli
- More than 700 different serotypes
- O157:H7

Shiga Toxin-Producing E.coli (STEC)
- Pathogenic E. coli
- Produce Shiga toxin (Stx) causing water and ions to move from tissue to bowels (watery diarrhea)
- Blood vessel damage
- Bloody diarrhea
- Hemolytic uremic syndrome (HUS)

O157 VS NON-O157
- E. coli O157:H7
  - Most commonly identified STEC in North America
  - Most often in news reports
- Non-O157 STEC
  - Other E. coli serogroups in the STEC group
  - O145, O26, O111, and O103

INFECTION
**Modes of Transmission**

- Consuming contaminated food
- Ingesting contaminated water
- Direct contact with infected
  - Person
  - Animal / Animal’s environment
- Risky foods
  - unpasteurized milk and juices
  - Soft cheeses made from raw milk
  - Meat (beef steaks, roasts) that haven’t been thoroughly cooked

**Timeline**

- **Exposure**
  - 3-4 days
- **Non-bloody Diarrhea**
  - 1-2 days
- **Bloody Diarrhea**
  - 5-10 days
- **HUS**
  - 5-10%

**NJDOH CASE DEFINITION**

**CONFIRMED**

- Meets confirmed lab criteria for Dx

**PROBABLE**

- Isolation of O157 from clinical specimen, w/out confirmation of H antigen or Shiga toxin production OR
- Clinically compatible contact of a STEC case or part of an outbreak risk group OR
- Clinically compatible case w/ elevated antibody titer to known STEC serotype

**POSSIBLE**

- Case of post diarrheal HUS OR
- ID of Shiga toxin in a specimen from a clinically compatible case w/out the isolation of STEC.

**Clinical Description**

Infection characterized by:

- Diarrhea (often bloody)
- Abdominal cramps
- Vomiting

**Laboratory Criteria for Diagnosis**

**O157**

O157 isolates that produce the H7 antigen are Shiga toxin-producing

**Non O157**

E. coli isolate that produces one or more Shiga toxins OR
E. coli isolate that contains genes that encode Shiga toxins

**Laboratory Testing**

E. coli O157 Culture

NJDOH Public Health & Environmental Laboratory (PHEL)
SURVEILLANCE

Annual STATS

U.S. ~ 265,000

- 95,000 O157 STEC
- 170,000 non-O157 STEC

N.J. ~ 254

- 49 O157 STEC
- 122 non-O157 STEC
- 83 not serotyped

Reportable Within 24 Hours of Diagnosis

Lab & Healthcare provider → Local health officer → NJDOH-CDS

CASE INVESTIGATION

Risk Assessment and Education

- High-risk activities
  - Day care attendee, food handler
- Exclude infected individuals from high risk settings
  - Until symptom free w/2 successive negative stool cultures collected 24 apart but <48 hours after completing antibiotic therapy
- Education
  - Handwashing, cooking, preventing transmission

STEC Case Report Form

Disease Investigator

STEC case
Additions

Section 5. Food Allergies & Special Diets: Have there been questions about general food preferences, food allergies, and any special dietary needs (other than pregnancy) may follow.

HUS diagnosis?
Source of drinking water?
Pets at home?

CASE INVESTIGATION: ENTERING DATA IN CDRSS

Exposures of Interest

- Travel, events attended
- Food history
- Food allergies, special diets
- Grocery stores & restaurants - Item(s) & date(s) consumed
- Contact with treated or untreated recreational water facilities
- Contact with pets, livestock, or other animals

FINAL STEP: FAX

Please fax completed STEC case report form to NJDOH
Expectations: Local health department

- Make at least **three attempts** to contact the case within **2 weeks** of the case being reported.
- **Record** dates and times of attempts in CDRSS
- Only close a case if attempts are documented

Guidance

STEC Investigation Checklist

Upcoming Conferences

- **Annual Drug Diversion Conference 2017**
  - **What**: A daylong conference to increase awareness among healthcare professionals about how to prevent, detect, and respond to drug diversion, particularly injectable medications, in healthcare settings.
  - **When/Where**: June 1, 2017 from 9am-3pm @ Rutgers University-Busch Campus Student Center, Piscataway
  - **Cost**: $50/pp (includes light breakfast, lunch, continuing education credits, and conference)
  - **Register Today!**
    - [Link](http://www.rutgers.edu/event/2017annualdrugdiversionconference)

- **LINCS agency public information exercise**
  - **June 14**
  - Questions: Contact Laura Taylor, PhD, MCHES @ [laura.taylor@dot.nj.gov](mailto:laura.taylor@dot.nj.gov)

Final Notes...

- Return clickers
- Sign-out
- Nurses: pick-up certificates
- Check e-mail and complete evaluation
- Slides are posted on NJLMN under Practice Exchange