Communicable Disease Investigation and Response Protocol Changes

TRAINING

December 19, 2018

Los Angeles County
Department of Public Health
PURPOSE OF TODAY’S PRESENTATION

• Provide a more in-depth review of the disease protocol changes for four of the diseases with the greatest amount of change:
  – Enteric Diseases (*Salmonella*, Shigella, and *E. coli*)
  – Influenza and Respiratory Disease Outbreaks
  – Hepatitis
  – Meningitis
PURPOSE OF THE PROTOCOL CHANGES

• Streamline investigation and response process, while not jeopardizing public health and safety
• Reduce DPH workload
• Improve timeliness and efficiency of disease investigations
• Prioritize efforts for diseases with greater public health impact
CAVEATS TO THE CHANGES

• Q/I evaluation of the changes will be conducted
• Not all changes will be permanent
• Will continue to modify and improve the protocols
• Intend to regularly meet to review and improve the changes
• Your input and suggestions for improvements are valued and important
• Current changes won’t be enacted until after review
• Expected start date: January 7, 2019
SUMMARY OF PRIMARY PROTOCOL CHANGES

• Reduce in-person site visits
  o As appropriate, assess and follow-up by phone
  o Site visits as needed and if requested

• Reduce AMD sign-off — Responsibility now PHNS
  o Only for select disease investigations
  o Purpose: Improve timeliness and efficiency

• Increase autonomy of PHNs

• Limit exclusion of cases and contacts to those with greater likelihood of disease transmission
  – Reduce workload of follow-up and continued testing
  – Improve relations with the public
REVIEW OF ADDITIONAL CHANGES

• **Hand, Foot and Mouth Disease**
  o Investigation by phone unless special circumstances or requested
  o Criteria for outbreak increased to 5 epi-linked cases
  o Removed recommendation for collection of specimens

• **Pediculosis (Head Lice)**
  o Investigation by phone unless special circumstances or requested
  o Criteria for outbreak increased to 5 epi-linked cases

• **Scabies**
  o Investigation by phone unless special circumstances or requested
  o Removed crusted/atypical scabies from reportable diseases list
  o Criteria for outbreak 2 or more cases, *any* type
TRAINING BY DISEASE

Enteric Diseases
OBJECTIVES

At the conclusion of this presentation participants should be able to

• Know the changes made to enteric disease chapters in B-73

• Understand SOS and how to apply control measures for different situations
PHN ROLES

- Investigate cases as indicated
- Collect and assess data
- Intervene to protect public health (based on assessment)
- Educate community
- Collaborate as needed with other HCWs
TOOLS/RESOURCES

• B-73
  – Hard copy or on ACDC web site
• Case History forms
• FBI
• Consultations
  – PHNS
  – MD
  – ACDC
• SOS
  – As specified in the B-73
  – PHI
ENTERIC DISEASE CHANGES

- Shiga Toxin-producing *E. Coli* (STEC)
- Shigella
- *Salmonella*

- **NO changes for**
  - Typhoid Fever
  - Paratyphoid Fever
  - Chronic Typhoid
The *Shigella* sp. bacteria penetrates the intestinal mucosal lining in the second-stage of shigellosis.
**SHigellosis**

- **Agent**
  - *Shigella sonnei*
  - *Shigella flexneri*
  - *Shigella boydii*
  - *Shigella dysenteriae*

- **Incubation:** 1-7 days, usually 1-3 days

- **Symptoms:** diarrhea, fever, cramps, N & V, tenesmus
SHIGELLOSIS

• Reservoir: Human (primate) ONLY
• Transmission: Fecal-oral
• Risks
  – Person-to-person
  – Playmates
  – Sex partners
  – Diapers and fecal contamination
  – Food contaminated with the feces of an infected person
SHIGELLOSIS

Shigella - Old SOS Removal and Clearance

• Case: Remove until cleared
• Household contact in SOS: Remove both symptomatic and asymptomatic HHC for stool clearance
• Sensitive Occupation or Situation:
  a. **Symptomatic:** Remove from work until 2 consecutive negative feces specimens or rectal swabs are obtained, at least 24 hours apart and taken at least 48 hours after cessation of antimicrobial therapy. Then, weekly negative specimens until case released or contact with case broken.
  b. **Asymptomatic:** Remove from work until 1 negative feces specimen or rectal swab are obtained. Then, weekly negative specimens until case released. Release after 2 consecutive negative specimens if contact with case is broken.

2. **Non-sensitive Occupation or Situation:** a. Obtain specimens if symptomatic.
**SHIGELLOSIS**

Shigella - **NEW** SOS Removal and Clearance

- Case: Remove
- Household contact: Remove if symptomatic
- Asymptomatic HHC: No action needed; do not remove
- Sensitive Occupation or Situation:
  a. **Symptomatic**: Remove from work until 2 consecutive negative feces specimens or rectal swabs are obtained, at least 24 hours apart and taken at least 48 hours after cessation of antimicrobial therapy. Then, weekly negative specimens until case released or contact with case broken.
  b. **Asymptomatic**: No restrictions.

**Non-sensitive Occupation or Situation:**

a. Obtain specimens if symptomatic.
This is a colorized transmission electron micrograph of *Escherichia coli* O157:H7
STECs

• Agent: Any *Escherichia coli* serotype that produces shiga-like (vero) toxin
• Incubation: 12 hours to 10 days, average 3-4 days
• Symptoms:
  – Bloody diarrhea
  – Cramping
  – Fever is rare
  – HUS
STECs

• Reservoir:
  – Bovine, other animals, human

• Transmission:
  – Foodborne
  – Person-to-person

• Risks:
  – Underdone ground beef/ Poor kitchen technique
  – Animal exposure
  – Contaminated produce
CHARACTERISTICS

• Increase during summer
• As infectious as *Shigella*
  – SOS assessment critical
• May be associated with an outbreak
• Other serotyping may take weeks to months
ABOUT HUS

• Criteria
  • Hemolytic Anemia
  • Kidney Failure
  • Thrombocytopenia

• ACDC Notification
STEC

STEC - Old SOS Removal and Clearance

• Case: Remove

• Household contact in SOS: Remove both symptomatic and asymptomatic HHC for stool clearance

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  b. Asymptomatic: No restrictions.

2. Non-sensitive Occupation or Situation:
   a. Obtain specimens if symptomatic.
PREVENTION

• **Always remember to wash your hands,** but especially after you:
  – Use the toilet
  – Change a diaper
  – Handle raw meat or poultry
  – Clean up pet feces
  – Touch reptiles or birds

• **Wash all fruits and vegetables before eating**

• **Do not prepare food for others until your diarrhea has resolved**
CASE EXAMPLE
SALMONELLOSIS

Stained Salmonella sp. bacteria

Salmonella choleraesuis subsp. arizonae bacteria
SALMONELLOSIS

• Agent:
  – Non-typhoidal *Salmonella* with more than 2,500 serotypes

• Incubation:
  – 6-72 hours, usually 12-36 hours, depending on dose, serotype

• Symptoms:
  – GI-diarrhea, fever, cramps, N & V, HA, body aches
  – Extra GI symptoms
SALMONELLOSIS

• Reservoir
  – Humans
  – Animals
  – Environment

• Transmission
  – Foodborne
  – Person-to-person

• Risks
PREVENTION

• Store /refrigerate food properly
• Proper cleaning of cutting boards and counters
• Do not eat raw or undercooked meats
• Avoid eating raw eggs or undercooked foods containing raw eggs
• Keep foods at proper temperatures
PHN OBSERVATIONS

• Kitchen
  – Poor technique
  – Primary cook

• Habits
  – Likes raw eggs
  – Poor hygiene

• Pets
  – Reptiles
  – Other

• Restaurants/Catering
PRESUMPTIVE CASES

• Definition: Epidemiologically linked to a confirmed case with diarrhea (>2 loose stools/24 hours) AND fever or diarrhea and at least 2 other symptoms
• Symptomatic typhoid/paratyphoid contacts, SOS, and STECs are to be tested in our PHL
• Typhoid and STEC will need a positive culture to meet the criteria for a case
SALMONELLOSIS

SUMMARY OF B-73 CHANGES

• Transmission to include food sources as primary source
• PHN to notify upon admission to SNF with template letter listing contact precautions for Salmonellosis
• Included description of SOS
• AMD may approve some healthcare workers to return to work when asymptomatic for 48 hours
• Reworded section on symptomatic contacts in SOS
• For asymptomatic contacts, no action needed
• Non-SOS may return to work when asymptomatic
• Added paragraph on suspected outbreaks and daycare
• Reworded paragraph on presumptive cases
**SALMONELLOSIS B-73 CHANGE**

Transmission to include food sources as primary source

OLD

Fecal-oral route, from animal or human, with or without intermediary contamination of foodstuffs.

NEW

Most cases of salmonellosis occur from contaminated foods of animal origin or contaminated produce. Fecal-oral transmission, from animal or human, also occurs.
**SALMONELLOSIS B-73 CHANGE**

PHN to notify upon admission to SNF with template letter listing contact precautions for *Salmonellosis*

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>A notice from the PHN is required upon admission to a skilled nursing or intermediate care facility (B-73, <strong>Part II</strong>) describing needed infection control measures.</td>
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</tbody>
</table>
**SALMONELLOSIS B-73 CHANGE**

Include description of SOS

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>This includes food handlers, healthcare workers, and home healthcare aides who prepare food.</td>
</tr>
</tbody>
</table>
SALMONELLOSIS B-73 CHANGE

AMD may approve some healthcare workers to return to work when asymptomatic for 48 hours

OLD

None

NEW

For salmonellosis cases that are healthcare workers, the employer’s infection preventionist or employee health should be contacted to ensure the health facility’s policy is enacted. In special situations, health care workers who are asymptomatic shedders of *Salmonella* may be allowed to return to work, at the discretion of the AMD and the employer.
SALMONELLOSIS B-73 CHANGE

Reworded section on symptomatic contacts in SOS

OLD

Household members or persons who share a common source.

1. **Sensitive Occupation or Situation**:

   a. **Symptomatic**: Remove from work until 2 negative specimens as for case. Then, weekly specimens until case released or contact with case is broken.

NEW

Household members or persons who share a common source.

**Sensitive Occupation or Situation**: 

**Symptomatic**: Remove from sensitive work or situation until 2 consecutive negative stool specimens are obtained at least 24 hours apart, taken at least 48 hours after the completion of antibiotic treatment, if antibiotics were taken. Then, weekly specimens until case released or contact with case is broken.
SALMONELLOSIS B-73 CHANGE

For asymptomatic contacts, **no action needed**

**OLD**

**Asymptomatic**: Do not remove from work unless hand-washing practices are questionable. May be assigned to non-sensitive work duties, if available. Collect weekly specimens until case released or contact with case broken. If positive, remove from work until cleared as for case.

**NEW**

**Asymptomatic**: Do not remove from work. No further action needed. Inform these individuals to seek medical care and request testing if they develop salmonellosis symptoms.
SALMONELLOSIS B-73 CHANGE

Non-SOS case may return to work when asymptomatic

OLD

None.

NEW

Asymptomatic: Do not remove from work. No further action needed.
Suspected Outbreaks or Cluster

Suspected outbreaks include situations when there are two or more cases in a daycare or assisted living facility, or when there are two or more cases without any obvious outside contacts (i.e., the two cases are not members of the same family or grouping). For these situations, an outbreak investigation should be opened and consult with the AMD or a DPH physician.
Suspected outbreaks include situations when there are two or more cases in a daycare or assisted living facility, or when there are two or more cases without any obvious outside contacts (i.e., the two cases are not members of the same family or grouping). For these situations, an outbreak investigation should be opened and consult with the AMD or a DPH physician.
Presumptive Cases:

a. Definition: any person who is epidemiologically linked to a confirmed case, who has diarrhea (more than 2 loose stools in 24 hours) and fever, or diarrhea and at least 2 other symptoms.

b. Follow up is the same as for a confirmed case (i.e., clearance as needed and submission of a Salmonellosis Case Report Form and Contact Roster).

Presumptive Cases:

a. **Definition**: Includes any person who is epidemiologically linked to a confirmed case, who has diarrhea (more than 2 loose stools in 24 hours) and fever, or diarrhea and at least 2 other symptoms.

b. **Follow up**: Actions are the same as for a confirmed case—if SOS, exclusion and clearance with 2 negative stools; if not SOS, no restrictions unless household contact is in an SOS. Submit a SALMONELLA CASE REPORT.
WHY SOS?

• Primary intervention to protect the public’s health
• Prevent further transmission
• Referral as needed
  – Other jurisdictions
  – PHI assistance
• May lead to identification of an outbreak
SENSITIVE OCCUPATIONS

- Commercial food and milk handlers
- Teachers
- Child-care workers
- Those treating, caring or cooking for others
- Persons whose duties appreciably increase the risk of disease transmission

- Title 17 Section 2613 specifies that foodhandlers and persons involved in direct care of children, the elderly, or patients in hospitals or other institutional settings shall be excluded until two stool specimens, taken at least 24 hours apart, beginning at least 48 hours after cessation of specific therapy, are negative
SENSITIVE OCCUPATIONS

PHNs identify SOS

Is the case or household contact a:

• Food handler
• HCW
• Child care worker
WHEN TO REMOVE

• If symptomatic (but may have to remove if asymptomatic)
• Risk for transmission is very high
• Mandated by law
• Evidence of secondary cases
CLEARANCE OBSTACLES

• Prolonged shedding
• Uncooperative families
• Physicians-PMDs
  – Misunderstanding of PH role
  – Test results
• Pending lab results
GO AHEAD AND ASK:

A PHN needs to know!

- Food may not be the only risk
- Specific duties need to be explored
- Using gloves does not always protect
- A close contact does not always live in the same house
- An ill person may have something to hide
PUBLIC HEALTH LAB CLEARANCE

Remember: only results from a certified public health laboratory are acceptable for clearance

• It does not matter who collects the specimen
• The PHL tests at a higher standard; these tests are more sensitive
SOS DISEASE DIFFERENCES

• Norovirus
• Other pathogens
• *Shigella*
• STEC
• *Salmonella*
• Typhoid Acute, Carrier/chronic vs. convalescent
PHL

• *Salmonella*: all isolates required by state law to be sent to LAC PHL for serotyping
• STEC: all specimens to be sent to PHL for further assessment, shiga toxin screening, cultures, serotyping
• *Shigella*: isolates are now required
• Other pathogens: isolates to be sent for all Typhoid cases, *Listeria*
OUTBREAK RECOGNITION

• Were others ill?
  – What were their symptoms?
  – Onsets?
• Does outbreak curve indicate a common source?
• What were the details on the common source?
• Call ACDC, even if you are only suspicious
OUTBREAK INVESTIGATION

- Community outbreaks
- Acute care outbreaks
- Sub-acute care outbreaks
- Foodborne outbreaks
- Special considerations
  - Multi-jurisdictional
  - Large
  - Media driven
Questions?
Influenza and Respiratory Disease Outbreaks
Why change B73 for influenza and respiratory diseases?

- New CDPH acute respiratory illness outbreak report form

- Streamline paper work
  - LAC DPH influenza and respiratory disease outbreak forms revised to capture CDPH required data element
  - CDPH Form 9003 will no longer be necessary!
Revised Definitions for Outbreak Settings

• Healthcare associated institutions
  – Includes skilled nursing facilities and intermediate care facilities
  – Excludes assisted living facilities
• Non-healthcare associated congregate settings
  – Settings where people reside overnight
  – Examples: prisons, dorms, shelters
• Community congregate settings
  – Congregate settings where people do not stay overnight
  – Examples: schools, day camps
  – Not among CDPH settings but of local interest
Revised Outbreak Definition – Respiratory Disease

• Acute respiratory illness (ARI) = Fever + 2 symptoms (fever, cough, rhinorrhea/nasal congestion, sore throat, myalgia)

• Outbreak definition varies by setting

  1. Healthcare and non-healthcare congregate settings
     • Non-influenza respiratory disease outbreak
       – Cluster (≥2 cases) of ARI
       – >1 case of laboratory-confirmed respiratory pathogen other than influenza
     • Respiratory outbreak of unknown etiology
       – Increase in ARI cases over normal background in absence of known etiology

  2. Community congregate setting:
     1. >10% absent with ARI, or
     2. 20% of epidemiologically-linked group ill with same symptoms
Revised Outbreak Definition - Influenza

• Criteria
  1. Cluster (>2 cases) of influenza-like Illness (ILI) symptoms
     • Fever AND
     • Cough or sore throat
  2. At least one confirmed case of influenza

• Same definition regardless of outbreak setting
• Open all respiratory outbreaks as “Outbreak Unknown-Respiratory” until laboratory test confirms pathogen
Respiratory Outbreak Investigation Process

By default, all respiratory outbreaks should be open as “Outbreak Unknown-Respiratory” until lab test confirms a pathogen.

Respiratory OB of Known etiology (lab-confirmed respiratory pathogen, other than influenza) OR Unknown

Review & Follow B-73 Respiratory Disease OB Chapter & Determine OB Setting for OB Definition

OB Definition:
- Non-influenza respiratory outbreak of known etiology definition: At least 1 case of laboratory-confirmed respiratory pathogen, other than influenza, in the setting of a cluster (≥2 cases) of ARI within a 72-hour period. OR
- Respiratory outbreak of unknown etiology definition: A sudden increase of ARI cases over the normal background rate in the absence of a known etiology.

Healthcare-associated institutions
Long-term health care settings defined here as facilities licensed by the California Department of Public Health (CDPH), Licensing and Certification. These include skilled nursing facility (SNF), intermediate care facility (ICF), intermediate care facility - developmentally disabled (ICF-DD), intermediate care facility - developmentally disabled habilitative (ICF-DDH), intermediate care facility-developmentally disabled nursing (ICF-DDN), congregate living health facility (CLHF) and pediatric day health and respite care facility (PDHRCF).

Non-healthcare-associated institutions
Settings where people are admitted, residing, or incarcerated overnight such as independent living facility, assisted living facility, prison, jail, university dormitory, shelters, overnight camps, drug rehabilitation centers, etc.

Congregate Settings
Settings such as schools, preschools, and day camps where people do not reside overnight

Outbreak Report Forms
- Final Report:
  - Line List - Respiratory Outbreak for Residents and Staff (PDF/EXCEL) *Required

Outbreak Report Forms
- Final Report:
  - Acute Respiratory Illness Outbreak Report Form (CDPH 9003 09/18) *Required
  - Line List-Non-Healthcare Facility for Students, Staff, or Residents (PDF/EXCEL) *Required
Influenza Outbreak Investigation Process

By default, all respiratory outbreaks should be open as “Outbreak Unknown-Respiratory” until lab test confirms a pathogen.

Influenza OB (lab-confirmed influenza A or B)

Review & Follow B-73 Influenza OB Chapter (revised 11/2018) & Determine OB Setting

Influenza Outbreak Definition for Healthcare-associated and Nonhealthcare-associated institutions: At least one case of laboratory-confirmed influenza in the setting of a cluster (≥2 cases) of ILI within a 72-hour period.

Healthcare-associated institutions
Long-term health care settings defined here as facilities licensed by the California Department of Public Health (CDPH), Licensing and Certification. These include skilled nursing facility (SNF), intermediate care facility (ICF), intermediate care facility -developmentally disabled (ICF-DD), intermediate care facility -developmentally disabled habilitative (ICF-DDH), intermediate care facility -developmentally disabled nursing (ICF-DDN), congregate living health facility (CLHF) and pediatric day health and respite care facility (PDHRCF).

Nonhealthcare-associated institutions
Settings where people are admitted, residing, or incarcerated overnight such as independent living facility, assisted living facility, prison, jail, university dormitory, shelters, overnight camps, drug rehabilitation centers, etc.

Outbreak Report Forms
- Final Report:
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Other B73 Influenza Changes

- Added information about new FDA approved antiviral
  - Baloxavir marboxil (Xofluza)
  - Given as single-dose pill and equivalent to oseltamivir for alleviation of flu symptoms
  - Only indicated for treatment of uncomplicated flu
  - NOT approved for prophylaxis
  - Likely of limited utility in public health control
HEPATITIS

- Hepatitis A
  - Define elevated liver enzymes as ALT>100
  - Expanded age range for hep A vaccine post-exposure prophylaxis:
    - Previously from 12 months to 40 years; NOW 12 months to 59 years
  - Updated investigation form, adjust weblinks
  - Added references to CDC recommendations for immunoglobulin use and on post-exposure prophylaxis for exposure to hep A
  - Clarified that CS will investigate hospitalized suspect case reports

Investigation Flowcharts created for all
Hepatitis A Case Investigation Algorithm

Contact Provider and/or lab, Obtain:
- Hepatitis Panel
- ALT, AST, T-bili

HAV-IgM Positive and ALT >100 IU/L.

Ask Provider and/or patient:
- Symptoms
- Onset date
- Reason for testing
- SOS

Hepatitis symptoms?

Close as FALSE

Turn in to PHINS

- Interview patient
- Complete Epi Form
- SOS Call ACID ASAP
- Provide education
- Follow-up with PEP for contacts

Close case as ACUTE on epi form

Turn in to PHINS
HEPATITIS (continued)

• **Hepatitis B**
  o Updated section on control of contacts: post-exposure guidelines updated to CDC’s guidance Jan 2018

• **Hepatitis C** — No changes
Hepatitis B Acute Case Investigation Algorithm

Contact Provider and/or Lab, Obtain:
- Hepatitis Panel
- ALT, AST, T-bili

- HB IgM positive and
- HBsAg positive and
- ALT > 100

NO

HBsAg positive

NO

Cose as FALSE

Turn in to PHNS

YES

Cose as CHRONIC

Interview Provider and/or Patient:
- Symptoms
- Onset date
- Reason for testing

Hepatitis Symptoms?

YES

- Interview patient
- Complete Epi Form including risk factors

- Provide education
- Follow-up with PEP for contacts

Close case as ACUTE

Turn in to PHNS
Meningococcal Disease
MENINGOCOCCAL DISEASE

• Notification to CS clarified
  – During business hours, ACDC notifies the PHNS (cc Area Medical Director)

• Meningococcal Case Risk Factor Form completed by ACDC
  – Supplemental form has been revised and no longer needs to be completed by CS
  – CS still completes case report form and contact roster

• Changes in the vaccines available for use in US have updated
QUESTIONS?