Overview of Contact Investigation Guidelines

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Jessica Quintero, M.Ed. has the following disclosures to make:

- No conflict of interests
- No relevant financial relationships with any commercial companies pertaining to this educational activity
What is the Goal of Contact Investigation?

- Stop transmission.
- Prevent future cases TB disease.
- Evaluate and treat recently exposed persons.
- Identify source case.

Contact Investigation Responsibilities

- Health departments are responsible for ensuring and conducting contact investigations.
  - Non jurisdiction setting
    - Military base
    - Diplomatic missions
    - Reservations for American Indian/Alaska Native Tribes
MMWR for Contact Investigation

- Decisions to Initiate a CI
- Investigating the index patient
- Assigning priorities
- Diagnostic and PH Evaluation of Contacts
- Treatment of Contacts
- When to expand a CI
- Confidentiality and Consent in a CI
- Data Management
- Staffing and Training
- Other considerations
  - Media
  - Special circumstances
  - Source Case Investigation

Decision to Initiate a CI

- Characteristics of the index patient
- Behaviors

<table>
<thead>
<tr>
<th>TABLE 1. Characteristics of the index patient and behaviors associated with increased risk for tuberculosis (TB) transmission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic</td>
</tr>
<tr>
<td>Pulmonary, laryngeal, or pleural TB</td>
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<tr>
<td>AFB* positive sputum smear</td>
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<tr>
<td>Cavitation on chest radiograph</td>
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<tr>
<td>Adolescent or adult patient</td>
</tr>
<tr>
<td>No or ineffective treatment of TB disease</td>
</tr>
<tr>
<td>* Acid-fast bacilli</td>
</tr>
</tbody>
</table>

Table 1. Page 4 MMWR CI
What Characteristics Should We Consider in Our Decision to Initiate an Investigation?

+AFB sputum, Pulmonary Cavities, Anatomical site of disease

Investigating the Index Patient

• Pre interview phase
• Determine the infectious period
• Interview the patient
• Develop specific investigation plan
Pre Interview Phase

• Comprehensive information regarding the patient is the foundation of a contact investigation.
  – Medical
  – Demographic
  – Social

• Reporting form

• Attending Nurses and/or physician

Determine the Infectious Period

• Focuses the investigation on those most likely to be at risk.

• Estimation
Infectious Period

• Open
  – 3 months prior to diagnosis
  – 3 months prior to onset of symptoms
  – 4 wks for no S/S, AFB (-), & Abn CXR non-cavitary

• Closed when all of the following are satisfied:
  – Effective treatment > 2 weeks
  – Diminished symptoms
  – Mycobacteriologic response

Interview the Patient

• Establish rapport
• Information exchange
  – Transmission settings
  – Setting priorities
  – Contact identification
• Closure
• Follow up interviews
Develop Specific Investigation Plan

- Review and organize obtained information
- Assign priorities to contacts

Assigning Priorities

- Priorities are based on the likelihood of infection.
- **Factors:**
  - Characteristics of the index patient
  - Characteristics of the contact
    - Age
    - Immune status
    - Other medical conditions
    - Exposure
Diagnostic and PH Evaluation of Contacts

- Approximately 20%-30% of identified contacts have TB Infection, and 1% have TB disease.
  – Of the 20%-30%, half will acquire disease within a year after exposure.

- Initial assessment within 3 business days

Public Health Evaluation

TABLE 3: TIME FRAMES FOR INITIAL FOLLOW-UP OF CONTACTS OF PERSONS EXPOSED TO TUBERCULOSIS, page 9
Diagnostics

• Face to Face Health Assessment
• Symptoms review
• Diagnostic test
  – Tuberculin Skin Test (TST)
  – Interferon Gamm Release Assay (IGRA)
  – HIV testing recommended

Interpreting Skin Test Reaction

• ≥5 mm induration is positive for any contact
• A positive Break in Contact (BIC) or second round TST should be classified as recently infected
• A positive reaction in a BCG vaccinated contact should be considered a positive
Evaluation and Follow-up of Children <5 Years

- Always assigned a high priority
- Full diagnostic medical evaluation
- Preventative treatment recommended
- Always assigned a high priority

Treatment of Contacts

- Window-Period Prophylaxis
  - Used for children with negative TST

- LTBI
  - Used for positive reactors with normal CXR and no symptoms
  - Used for patients with HIV infection
  - Taking immunosuppressive therapy for organ transplant
  - Taking anti-tumor necrosis factor alpha (TNF-α) agents
Why do we expand an investigation?

Recent transmission is detected.

• Greater than expected rate of TB disease or TB infection among priority contacts.
• Evidence of secondary transmission
• TB disease among contacts not initially considered priority
• TB infection or TB disease in contacts younger than 5 years of age
• Change in contacts TST or IGRA status

Consider the Following Before Expanding a Contact Investigation

• Are program objectives being met for High/Medium contacts?
• Is the positivity rate 10% or twice the number expected in a SIMILAR population?
National TB Program Objectives
August 2015

<table>
<thead>
<tr>
<th>Objectives on Contact Investigations</th>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Elicitation</td>
<td>For TB patients with positive AFB sputum-smear results, increase the proportion who have contacts elicited.</td>
</tr>
<tr>
<td>Examination</td>
<td>For contacts to sputum AFB smear-positive TB cases, increase the proportion who are examined for infection and disease.</td>
</tr>
<tr>
<td>Treatment Initiation</td>
<td>For contacts to sputum AFB smear-positive TB cases diagnosed with latent TB infection, increase the proportion who start treatment.</td>
</tr>
<tr>
<td>Treatment Completion</td>
<td>For contacts to sputum AFB smear-positive TB cases who have started treatment for latent TB infection, increase the proportion who complete treatment.</td>
</tr>
</tbody>
</table>

Calculating the Infection Rate

The infection rate is defined as: The percentage of contacts with SIMILAR exposure who have a newly identified positive skin test (5mm or larger) OR IGRA.
Here are the steps...

- Determine the total number of contacts evaluated.
  - Do not include previous positive TST or refusals

- Determine the infection rate.
  - Divide the number of contacts with a new +TST documented (numerator) by total number of contacts evaluated (denominator)
  - Multiply by 100 the resulting percentage is the infection rate.

Example

10 contacts were identified for a TB case
1 contact had a previous + TST
6 were positive
3 were negative

\[
\frac{6 \text{ contacts +TST}}{9 \text{ contacts tested}} \times 100 = 67\%
\]
So, Now Let's Try

<table>
<thead>
<tr>
<th>Result</th>
<th>Contact</th>
<th>Result</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>10mm</td>
<td>Johnny Depp</td>
<td>00mm</td>
<td>Kate Winslet</td>
</tr>
<tr>
<td>Previous +</td>
<td>Arnold Schwarzenegger</td>
<td>00mm</td>
<td>Tom Hanks</td>
</tr>
<tr>
<td>15mm</td>
<td>Harrison Ford</td>
<td>00mm</td>
<td>Matt Damon</td>
</tr>
<tr>
<td>00mm</td>
<td>Emma Watson</td>
<td>8mm</td>
<td>Cameron Diaz</td>
</tr>
<tr>
<td>Refused</td>
<td>Leonardo DiCaprio</td>
<td>00mm</td>
<td>Anne Hathaway</td>
</tr>
<tr>
<td>20mm</td>
<td>Brad Pitt</td>
<td>Previous +</td>
<td>Jessica Alba</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4mm</td>
<td>Jimmy Fallon</td>
</tr>
</tbody>
</table>

Total Contacts id'd 14
Previous + 2
Refused 1
Total screened 11
Total positive 4

Do the Math

Total Contacts id'd 14
Previous + 2
Refused 1
Total screened 11
Total positive 4

Of 11 tested 4 were +

4 contacts +TST
11 contacts tested

$\frac{4}{11} \times 100 = 36\%$
Confidentiality and Consent in a CI

- Essential to maintain credibility
- It’s the law
- Make it a partnership
- Role play
- Make it clear

Data Management

- Management of care and follow up for contacts
- Epidemiologic analysis of an investigation
- Program evaluation using performance indicators.
  - Cohort review
Staffing and Training

• Should be conducted by a TRAINED staff member
  – What does that mean?
    • No guidelines on training requirements.

• What are program guidelines for training

Put This in Perspective

• 2015 Arkansas Board of Cosmetology License Requirements
• COSMETOLOGIST LICENSE: 1500 Hours
• BARBER LICENSE: 1500 Hours
• NAIL TECHNICIAN LICENSE: 600 Hours
• ESTHETICIAN LICENSE: 600 Hours
• ELECTROLOGIST LICENSE: 600 Hours, or Cosmetology License + 350 Hours
• PERMANENT MAKEUP LICENSE: Demonstrator License
• MASSAGE THERAPIST LICENSE: 500 Hours
• COSMETOLOGY INSTRUCTOR LICENSE: Valid Cosmetology License + 600 Hours
Seek Training Opportunities

• CDC Self Study Modules 1-5 & 6-9
• Interviewing video
• Relevant webinars
• Relevant in person training
• Materials
  – Interviewing
  – CI in corrections

Other Considerations

• Media
• Proxy Interview
• Source Case Investigation
• Special Circumstances
Media

- Provide education to the community
- Illustrate a public health presence
- Increase public anxiety
- Contribute to spread of misinformation
- Have a clear and consistent message
- Coordination between parties
- Get ahead of the game
- Involve PR department

Proxy Interviews

- Patient unavailable for interview
- Who makes a good proxy?
- Guidelines
- Confidentiality Risk
What about a source case investigation?

• Source Case Investigation is conducted to find the source of transmission when recent transmission is likely.
  – Used when a child under the age of 5 has TB disease.
  – Not recommended for LTBI patients and should be limited to children younger than 2.

• Reverse of contact investigation

• Only recommended when all infectious case investigation objectives are being met including treatment completion of contacts.

Congregate Settings

• Incomplete information
• Confidentiality
• Collaboration
• Legal implications
• Media coverage
Special Settings

- Correctional Facilities
- Health Care Facilities
- Schools
- Shelters

In Contact Investigation!