Evaluation and Treatment of TB Contacts
Tyler, Texas
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Contact Investigation: Where do we begin?
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• No conflict of interests
• No relevant financial relationships with any commercial companies pertaining to this educational activity
What is a Contact Investigation?

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  - Systematic process to identify, evaluate, and treat persons exposed to a person with infectious TB disease.

- The goal of a contact investigation are to successfully stop TB transmission and prevent future cases and outbreaks of TB disease.
Why is contact investigation important?

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  - Approximately 1% of all TB contacts have TB disease at the time of the contact investigation and are in need of treatment. Additionally, about 20%-30% of TB contacts are infected with M. tuberculosis and are at risk for developing TB disease if not diagnosed and treated for LTBI.

  - Every case of TB started as a contact!

Who is responsible for contact investigation?

- Who is responsible for contact investigation?
  - You are!

  - Health departments are accountable for ensuring contact investigations are performed for TB cases reported in their jurisdictions, even when patients are receiving care outside the health department.

  - Whenever contact investigation activities are delegated, the health department should work with those involved to ensure that the local policies and procedures are followed.
### Overview

- Initiation of a Contact Investigation
- Interviewing the index patient
- Prioritizing contacts
- Data management and community communications
- Confidentiality
- Special Settings and source case investigation

### What Characteristics Should We Consider in Our Decision to Initiate an Investigation?

**Initiate**

- **Site of disease**
  - Pulmonary

- **Smear results**
  - + AFB Smears
  - - AFB or (not performed)
    - Cavitary
  - +NAA (not performed)

**Do not initiate**

- **Site of disease**
  - Extrapulmonary

- **Smear results**
  - - AFB or (not performed)
    - Abnormal CXR not consistent with TB
How Do We Prepare for An Interview?

- Medical records
- Attending RN or MD
- Characteristics of a contact
- Know what you need
Questions & Answers: Know Your Stuff

- Who do you live with?
- How many children in the home?
- Where and with whom do you spend your free time?
- Are you married? Do you have a boy/girl friend?
- Where do you work? Who do you work with, eat your lunch with, drive to work with?
- Do you work with children?
- When was your last vacation? Where did you go, who did you stay with, was there any children there, how did you get there?
- Who comes into your home on a regular basis?
- Have you ever know anyone with TB?

Conducting an Interview

- MMWR Guidelines
- Establish rapport
- Information exchange
- Contact info
- Follow up
How Can We Establish Rapport?

• Identify yourself

• Identify your role

• Approach

• Know when to step away!

Spend the First 15 -20 Minutes,
Inquiring About the Patients Health and Well-being

• How do you feel?

• Have all of your questions been answered?

• What type of worries do you have?
What Factors Affect Information Exchange??

- Communication Skills
- Cultural factors
- Language
- Using interpreters
- Knowledge

Interviewing ..........
No, Communication Techniques

- Use of open ended questions
- Active listening
- Offer options not directives
- Give information simply
### What Is an Open Ended Question?

<table>
<thead>
<tr>
<th>Open ended</th>
<th>Close Ended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who else lives in the home with you?</td>
<td>Do you live alone?</td>
</tr>
<tr>
<td>How do you spend your free time?</td>
<td>Do you go bowling, or to church?</td>
</tr>
<tr>
<td>What number can you best be reached at?</td>
<td>Do you have a cell phone?</td>
</tr>
</tbody>
</table>

### How Can I Show That I am Actively Listening?

- **Verbal**
  - Paraphrasing and summarizing
  - Reflection

- **Nonverbal**
  - Silence
  - Body language
Cross-Cultural Communication

1. Awareness of one’s own cultural values
   – Are you attentive to your own preconceived notions of other cultural groups?

2. Awareness and acceptance of cultural differences
   – Do you look for opportunities to meet and interact with individuals who are from cultures other than your own?

3. Development of cultural knowledge
   – Are you familiar with the worldviews of cultural groups other than your own?

4. Ability to adapt practice skills to fit the cultural context of the case
   – Do you have the know-how to navigate cross-cultural case interactions?

45 Million People in the United States Speak a Language Other Than English at Home

- Less likely to receive care
- Less likely to understand care
- Increased risk of medical errors
- Reduced quality of care
- Increased risk of unethical care
- Less satisfied with care
Understanding the Interpretation Process

- The interview should be conducted in the primary language of the interviewee
- What is the role of the interpreter?
- Who should interpret?
- Interpreter etiquette

What Should Be Covered During the Initial Visit

- Provide resources
- Explain Confidentiality
- Infectious period
- Contact Investigation Process
Educational Resources

**Simply Put**
A guide for creating easy-to-understand materials


Pictures provide a lot of information without a lot of words and are understood as a common language.

Keeping It Confidential

- It’s the law
- Make it a partnership
- Role play
- Make it clear
- Essential to maintain credibility
What is the Infectious Period?

- **Open**
  - 3 months before diagnosis
  - Earlier w/ known symptoms

- **Close**
  - Effective treatment for ≥ 2 weeks
  - Diminished symptoms
  - Mycobacteriologic response

Why do We Establish an Infectious Period?

- Focuses investigation on contacts most at risk for infection
- Sets time frame for testing contacts
- The infectious period is an estimate
Most Practical System for Grading Exposure Settings is to Categorize Them By Size

- "1" being the size of a vehicle or car
- "2" the size of a bedroom
- "3" the size of a house
- "4" a size larger than a house

Minimum of Two Interviews Should Be Conducted

- First interview should be conducted
  — ≤1 business day of reporting for symptomatic patients
  — ≤3 business days for others
- Second interview conducted 1–2 weeks later
What is a Field Investigation?

- Visiting the patient’s home shelter, workplace (if any), and the other places where the patient said he/she spent time while infectious.
- The purpose of the field investigation is to identify contacts and evaluate the environmental characteristics of the place in which exposure occurred.
- Should be conducted ≤ 3 business days of initial interview

What Do We Do with this Information?
Post-Interview

- Assigning priorities to contacts
- Investigation plan
- Follow up
- Data Reporting
Factors for Assigning Priorities to Contacts

- Characteristics of the index case
- Characteristics of contacts
  - Age
  - Immune status
  - Other medical conditions
- Prioritization identified as high, medium, or low based on:
  - Likelihood of infection
  - Potential hazard to the individual contact if infected.

Characteristics of Contact Include

- Age
- Medical Condition
- Exposure
  - Intensity
  - Frequency
  - Duration
Testing of Identified Contacts

- Evaluation
  - Symptoms review
  - Face to face assessment
  - TST or IGRA
  - HIV testing recommended

Interpreting Skin Test Reaction

- ≥5 mm induration is positive for any contact
- Do not use two-step testing
- A positive BIC TST should be classified as recently infected
- Expectant mothers okay to test
Evaluation and Follow-up of Children <5 Years

- Always assigned a high priority
- Full diagnostic medical evaluation
- If TST <5 mm of induration and last exposure <8 weeks, Window-Period Prophylaxis recommended
- Second TST 8–10 weeks after exposure; decision to treat is reconsidered
  - Negative TST – treatment discontinued
  - Positive TST – treatment continued

Treatment of Contacts

- Window-Period Prophylaxis
  - Used for children with negative TST
- LTBI
  - Used for positive reactors with normal CXR and no symptoms
    AND
  - Used for patients with HIV infection
  - Taking immunosuppressive therapy for organ transplant
  - Taking anti-tumor necrosis factor alpha (TNF-α) agents
What Have WE Accomplished So Far?

- Identified contacts
- Prioritized them
- Evaluated patients
- Treated as appropriate
- Anything else?

Data Collection

- Management of care and follow-up
- Epidemiologic analysis
- Program evaluation
- Collected on standardized forms
- Electronic storage recommended
When Should We Expand an Investigation?

• Unexpected large positivity rate.
  – >10% community rate

• Evidence of secondary transmission

• Program objectives achieved

Expand to low priority contacts 8-10 weeks after last exposure.

Other Considerations

• Cultural Competency

• Social Network Analysis

• Proxy Interviews

• Congregate Settings

• Special Settings
TB Genotyping

- TB Genotyping or “fingerprinting”: is a laboratory-based method that can determine the genetic pattern of the strain of *M. tuberculosis* that caused TB disease in a person.
  - Identify unsuspected relationships between patients
  - Locate unusual transmission settings
  - Uncover transmission between jurisdictions
  - Evaluate completeness of contact investigation
  - Promptly identify false-positive cultures
  - Detect and investigate outbreaks sooner

Proxy Interviews

- Build on information
- Patient unavailable for interview
- Who makes a good proxy
- Guidelines
- Confidentiality Risk
Source Case Investigation

• Source case investigation: A method used to identify a source case; usually done when a young child is found to have TB disease.

• Considered when
  – Child < 5 has been diagnosed with TBD
  – An infant ≤ 2 has been diagnosed with LTBI
  – Healthcare setting where serial TB testing indicates recent infection
  – Correctional facilities where TB testing indicates an increase in M. TB infection among inmates and staff.

• A source case investigation moves in the opposite direction of a CI but the same principles apply.

Congregate Settings

• Correctional Facilities
• Shelters
• Work places
• Health Care Facilities
• Schools
Not all contacts with substantial exposure are identified during the contact investigation!

Every case began as a contact!

They always come back!
CDC Self Study Modules on Tuberculosis

Module 8:
Contact Investigations for Tuberculosis

Objectives:
1. Define a TB contact investigation
2. State the goal of a TB contact investigation
3. Describe the systematic approach to TB contact investigations.
4. Define a TB source case investigation.