Fundamentals of Large Scale TB Contact Investigations

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A congregate setting is an environment where a number of people meet or gather and share the same space for either a *limited* or *extended* period of time.
Common Congregate Setting Sites

- Schools
  - Elementary
  - Secondary
  - Colleges and universities

- Day care centers

- Houses of worship

- Hospitals and other health care settings

- Shelters

- Correctional facilities

- Workplace settings

- Social settings
Information collected from the medical record review and index case interview is necessary in determining the level of infectiousness of the patient:

- Decision based on review of bacteriology/pathology results, radiographic findings, and symptom history.

Infectious period:

- Estimates the period of time that index case is presumed to be infectious.
  - Not determined with precision.
  - Establishes start and end point of probable transmission.
- Allows HCW to focus questions to patient for purposes of identifying contacts at all exposure sites.
- Unable to conduct a quality investigation without it.
• If sufficient program resources are available, the on-site assessment of the congregate setting should be initiated if index case is diagnosed with suspected or confirmed pulmonary, laryngeal, or pleural TB and presents with
  – Smear positive respiratory specimen and/or
  – Cavitary disease with cough or laryngitis

• Current CDC guidelines recommend that all potential settings for transmission should be visited within 5 business days of initiating the contact investigation or upon identification of setting
• Transmission should not be regarded as an isolated incident confined to a limited area such as the household

• Transmission is an event that can occur in various sites such as household, social and recreational, workplace, and school
## Congregate Settings of Interest by Age Group

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<tr>
<th>Adolescents</th>
<th>Adults</th>
<th>Elderly</th>
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<td>House of Worship</td>
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Interaction with Index Case -1

- Patient informed of the need to conduct congregate setting investigation
  - HCW explains necessity of investigation
  - Explains purpose of meeting with site management

- Revealing index case identity
  - Dependent upon individual program standards of practice index case to sign consent form authorizing disclosure of confidential information including identity and diagnosis to site management on a *need to know* basis
  - If index case refuses to consent to disclosure, TB program must either comply or breach confidentiality if refusal threatens the health of the public
  - If identity revealed, a signed agreement to maintain patient confidentiality should be considered to be obtained from management
Site Management -1

- Management notification
  - Highest ranking manager/administrator notified
  - Notification should ideally occur 1-2 business days after HCW informed of congregate setting exposure
• Method of notification
  – Telephone notification preferred method to notify management and schedule appointment for face-to-face meeting
    • Mail too slow, impersonal, and unreliable
    • Unscheduled visits or emails generally inappropriate
  – Providing patient’s identity and diagnosis over telephone risks violating medical privacy
    • Telephone is inappropriate means to provide necessary TB education
Site Management -3

• Initial telephone call allows for the opportunity to begin the process of building trust and rapport with management
  – In a very brief period of time on the telephone, HCW must project a sense of professionalism, sensitivity, and expertise
  – How much information is shared over the telephone is dependent upon local program standards of practice
Site Management - 4

– Agenda for initial management meeting

• Allows for orderly discussion focusing on relevant issues
  – Purpose of meeting
  – Confidentiality issues
  – Potential media interest
  – Basic TB education
  – Site tour
  – Overview and discussion of specific patient information
    » Basis of diagnosis
    » Current medical status
    » Level of infectiousness prior to diagnosis
(Agenda cont’d)

- Explanation of the infectious period and its role in contact identification
- Out-patient use of DOT to help insure adherence to treatment when patient is cleared to return to setting
- If applicable, legal ramifications of index case and contact non-adherence
• General discussion with management focusing on
  – Environment of congregate setting - confirmed by site tour
  – Total number of individuals associated with setting
  – Local health department standards of practice for identifying and testing high and low priority contacts
    – Discussion of initial and post exposure testing
    – Explanation of on-site and off-site testing
      » Which test will be offered (TST or QFT)
      » Follow-up testing
• Determine potential for exposure and transmission
  – Assessment ideally should include accurate and detailed drawings and or photographs with emphasis on:
    • Room design(s)
    • Room size(s) in sq. feet
    • Ceiling height
    • Type of ventilation
    • Proximity of individuals in relation to index case
Restaurant
Daycare Center

- Kitchen Area
- Counter Top
- Play Area
- Shelves

Dimensions:
- Ceiling height: 6'5"
- No windows
- 17' x 22'
- 17' x 23'
Coat Manufacturer
On-Site - 2

• Allows HCW to accurately recall the setting for review at a later date

• Based on information gathered during the assessment, HCW can provide recommendations regarding the identification and testing of high priority contacts
• Transmission probability assessment
  – Identifies contact tracing priorities within the infectious period based on the following characteristics
    • Person
    • Place
    • Time
    • Contact
• Current CDC guidelines indicate that in a congregate setting, contacts should be categorized as high priority if they have been exposed to a suspected or confirmed pulmonary, laryngeal or pleural TB case who is diagnosed with a positive smear or cavitary disease
  – Low priority contacts reserved for possible expansion of investigation
Concentric Circle Principle in TB Control
Identifying Contacts at Risk of Exposure

Less Time + Greater Distance = Lower Risk
Problems and Challenges

- Depending on the setting, the following can be associated with large-scale contact investigations
  - Potential for a large number of identified contacts
  - Potential for vague information for determining contact priorities
  - Potential for incomplete identity and locating information
  - Challenges in maintaining patient confidentiality
  - Collaboration with officials and administrators who are unfamiliar with TB
  - Media coverage
• Consideration should be given to notify all high priority contacts and others associated with the congregate setting regarding potential exposure
  – Information letter
  – Notification letter

• Scheduling of testing
  – Time, date, and location of testing for all contacts should be scheduled in advance
• Testing of high priority contacts
  – Testing and medical evaluations for contacts should take place within a time frame consistent with current CDC recommendations

• Range of 7-17 business days depending upon index case smear and chest x-ray results
Education Sessions - 1

- Allows individuals at congregate setting to become better informed about TB exposure, transmission and treatment
- Effective education sessions held prior to testing appears to help reduce anxiety for those identified as high as well as low priority contacts
Provision of basic TB education to management may include:

- How TB is and is not transmitted
- Factors influencing transmission
- Difference between infection and disease
- Treatment for infection and disease and the importance of adherence
- Directly observed therapy (DOT)
- Legal mandates for evaluation of contacts, if applicable
Provision of basic TB education to all individuals associated with congregate setting includes

- Same information provided to management
- Visual component
  - PowerPoint slides
  - Printed educational materials
Consideration of the following factors is recommended

- Achievement of program objectives with high and medium priority contacts

- Extent of recent transmission in identified contacts
  - Unexpected high rate of positive TSTs or
  - Evidence of secondary cases or
  - Transmission to contacts aged <5 or
  - Documented TST conversions or
  - Change in TST status from negative to positive

- In absence of recent transmission investigation should not be expanded
Closure of Investigation

- Consistent with local health department standards of practice for closing a contact investigation
  - Dependent upon completion of initial and post exposure testing and medical evaluations of all identified contacts
While some large scale investigations are considered uncomplicated others can be complex and require careful thought. Regardless of the size and focus all investigations should be the result of comprehensive planning.