Assigning Priorities to Contacts

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TB Contact Investigation (Pilot)
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Lori Eitelbach, BSN, RN has the following disclosures to make:

- No conflict of interests
- No relevant financial relationships with any commercial companies pertaining to this educational activity

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Assigning Priorities to Contacts

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OBJECTIVES

- Identify contacts.
- Assign priority status to contacts.
- Consider additional factors of transmission.
- Determine transmission sites and when field visits are warranted.

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Systematic Approach to TB Contact Investigation

1. Collect and evaluate existing information about Index Case
2. Interview Index Case
3. Determine infectious period.
4. Review information and develop plan for investigation
5. Prioritize contacts
6. Conduct and evaluate sites of transmission (field visits)
7. Conduct contact assessments (screening, testing)
8. Determine whether to expand or conclude investigation
9. Evaluate CI activities

- *These steps may not always be done in sequential order*

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Developing a TB Contact Investigation Plan

Review information and develop plan for investigation.

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Characteristics of Index Patient

- Infectiousness
  - Clinically
  - Radiographically
  - Microbiologically
- Factors Associated with Infectiousness
  - Was he/she coughing? Productive? Hemoptysis? Sneezing? Singing?
  - Were there a cavities on imaging?
  - What was the smear positivity rate?

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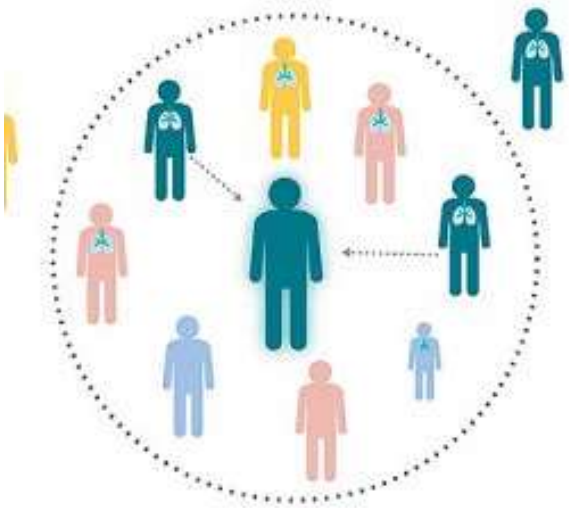
Who are TB Contacts?

- Persons who have shared airspace with an infectious TB patient (index case).
- Family members
- Friends
- Coworkers
- Church-family
- Club members
- Classmates



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Eliciting Contact Information

Ask TB case, "During infectious period…":

- Who do you live with?
- Where do you work?
- Do you sit/work in close proximity with any of your coworkers?
- Do you have any close friends? How much time do you spend with them? Where?
- Do you belong to any clubs? What hobbies do you have? Do you go to church?
- What are the settings in which you're meeting these people, i.e. outside, in car, well-ventilated auditorium, cubicles at work, etc?

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Prioritizing Contacts

- **If we're trying to eradicate TB, why don't we just assess <u>all</u> TB contacts, no matter how much time, frequency or intensity of the exposure?**
  - Balancing / allocating scarce resources
  - Likelihood of infection

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Goals of Prioritizing Contacts

- Identify likelihood of infection and the potential risks to the individual contact if infected.
- Distinguish all recently infected contacts from those who are not infected.
- Prevent future TB disease by treating those infected with LTBI or active TB disease.

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Highest Priority Contacts

- **Contacts most likely to be infected:**
  - People with close regular and prolonged contact with TB patient
  - Contact in small, poor ventilated places
- **Contacts at high risk of developing disease if infected (vulnerability):**
  - **Age** – children <5yrs of age
  - **Immune status** - HIV infected, on high doses of steroids
  - **Immunosuppressed** - certain types of cancer, on biologics
  - **Other medical conditions** – diabetes, silicosis, status after gastrectomy
  - **Injection of Illicit drugs**
  - **Low body weight** - 10% or more below ideal

Priority should be given to contacts exhibiting symptoms of active TB disease.

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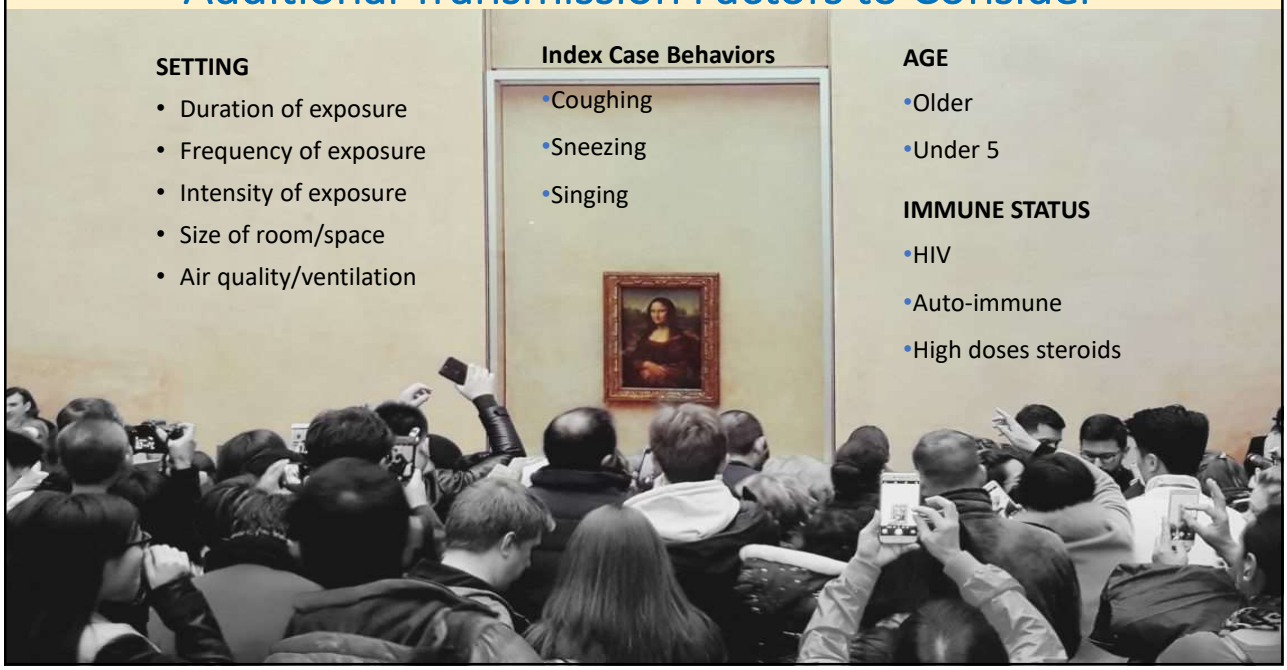
Additional Transmission Factors to Consider



SETTING

- Duration of exposure
- Frequency of exposure
- Intensity of exposure
- Size of room/space
- Air quality/ventilation

Index Case Behaviors

- Coughing
- Sneezing
- Singing

AGE

- Older
- Under 5

IMMUNE STATUS

- HIV
- Auto-immune
- High doses steroids

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Field/Site Visits

- Visiting TB patient's residence and other places where index case spent time while infectious.
- Follow infection control precautions at all locations.
- View and assess site characteristics, i.e. size of room, ventilation, crowding, etc.
- Look for signs of other contacts not yet identified, i.e. children's shoes on floor, yet no children have been listed as contacts.

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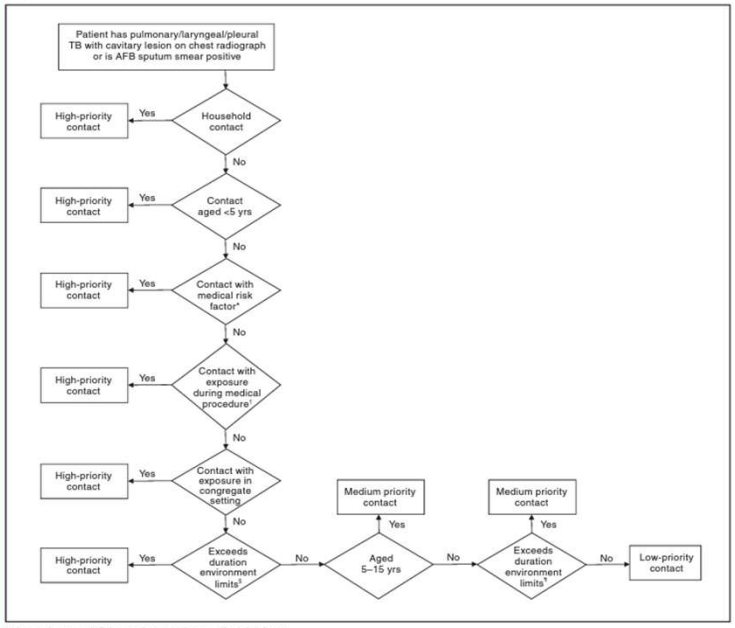
FIGURE 2. Prioritization of contacts exposed to persons with acid-fast bacilli (AFB) sputum smear-positive or cavitary tuberculosis (TB) cases



* Human immunodeficiency virus or other medical risk factor.
† Bronchoscopy, sputum induction, or autopsy.
§ Exposure exceeds duration/environment limits per unit time established by the health department for high-priority contacts.
¶ Exposure exceeds duration/environment limits per unit time established by the health department for medium-priority contacts.

www.cdc.gov/mmwr/pdf/rr/rr5415.pdf

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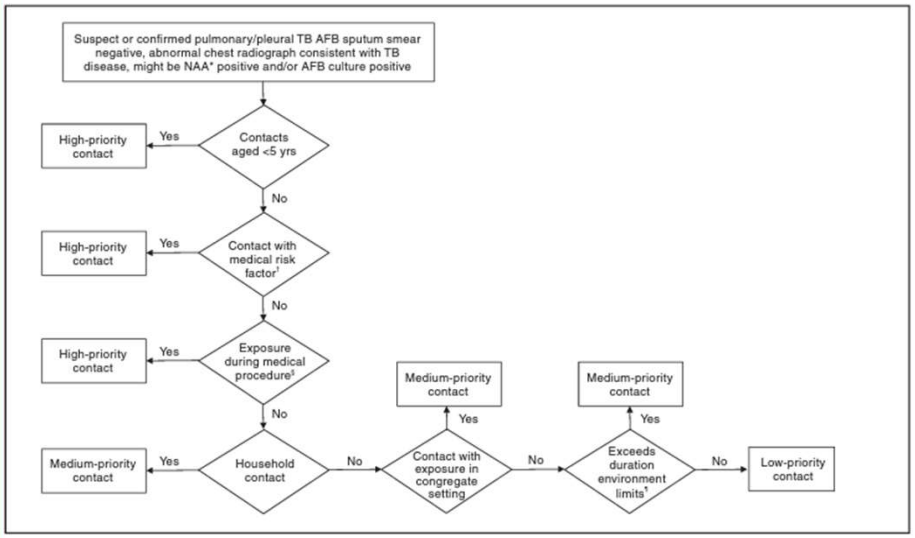
FIGURE 3. Priority assignments for contacts exposed to persons with acid-fast bacilli (AFB) sputum smear-negative tuberculosis (TB) cases



* Nucleic acid assay.
† Human immunodeficiency virus or other medical risk factor.
§ Bronchoscopy, sputum induction, or autopsy.
¶ Exposure exceeds duration/environment limits per unit time established by local TB control program for medium-priority contacts.

www.cdc.gov/mmwr/pdf/rr/rr5415.pdf

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Table 1

Assignment of Contact Evaluation Priority Based on Case Characteristics			
Case Characteristics	**Investigation and Evaluation Priority**		
Pulmonary, pleural or laryngeal	**High Priority**	**Medium Priority**	**Low Priority**
Any of the following scenarios: • AFB smear positive • Cavitary lesion or CXR or CT regardless of smear status	• Household contacts • Anyone under 5 yrs old • Contacts with Medical Risk Factors: HIV, TNF alpha blockers, ESRD, long-term steroid use, cancer treatments or other immune compromising condition • Contacts exposed during a medical procedure: Bronchoscopy, sputum induction or autopsy • Contacts in a congregate setting (LTC, Detention facility) **OR** • Contacts exceeding environmental exposure limits for high priority contacts (See Table 2)	• Anyone 5-15 yrs old who does not meet one of the high priority criteria **OR** • Contacts exceeding environment exposure limits for medium priority contacts (See Table 2)	Anyone other than those listed; only considered if expansion is warranted
• Smear negative • ABN CXR or CT consistent with TB and non-cavitary • Might be NAA and/or AFB culture positive	• Anyone under 5 yrs old • Contacts with Medical Risk Factors: HIV, TNF alpha blockers, ESRD, long-term steroid use, cancer treatments or other immune compromising condition • Contacts exposed during a medical procedure: Bronchoscopy, sputum induction or autopsy	• Household contacts • Contacts in a congregate setting (LTC, Detention facility) **OR** • Contacts exceeding environmental exposure limits for medium priority contacts (See Table 2)	Anyone other than those listed; only considered if expansion is warranted
Any of the following scenarios: • Suspected TB with Abn CXR or CT, not consistent with TB • AFB neg., rapid test neg., culture neg.	None	• Household contacts • Anyone under 5 years old • Contacts with Medical Risk Factors: see above • Contacts exposed during a medical procedure	Anyone other than those listed; only considered if expansion is warranted
Extra-pulmonary	**High Priority**	**Medium Priority**	**Low Priority**
• Non-pulmonary TB with pulmonary disease ruled out	None	None	None

Source: MMWR 2005;54 (No. RR-15)

www.vdh.virginia.gov/content/uploads/sites/112/2016/10/Contact-Priorities_062617.pdf

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Table 2

VDH recommendations for the cumulative time needed during the infectious period to assign the priority of contact based on environmental exposure				
Space size	**Example**	**High Priority**	**Medium Priority**	**Low Priority**
Very small	Car, small office, 150 sq. ft.	8 or more hours	4 to less than 8 hours	Less than 4 hours
Small/medium	Classroom, meeting room	24 or more hours	8 to less than 24 hours	Less than 8 hours
Medium/large	Cafeteria, small church	50 or more hours	24 to less than 50 hours	Less than 24 hours
Large	Gymnasium, auditorium	100 or more hours	50 to less than 100 hours	Less than 50 hours
The less time exposed → the lower the potential for transmission → the lower the priority for evaluation of the contact				

VDH:DTBNH: Tuberculosis Contact Investigation Guidelines
6/26/2017

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Reflection

- A contact investigation plan should be coordinated.
- Contacts need to be identified and prioritized.
- The determination of field visits must be made.
- It's crucial that high priority contacts are assessed and tested expediently.

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Thank you

Contact investigations are an essential component to TB control and prevention.

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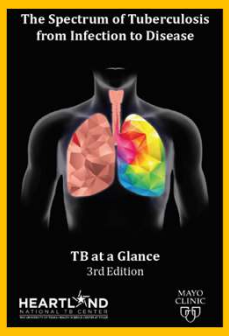

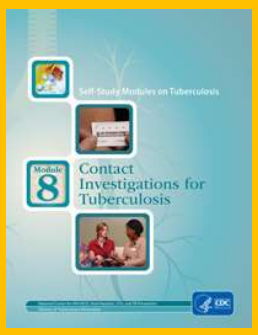

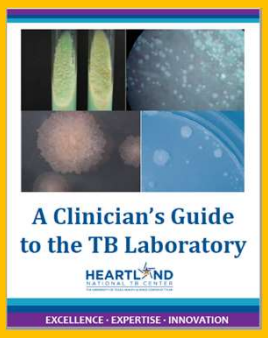

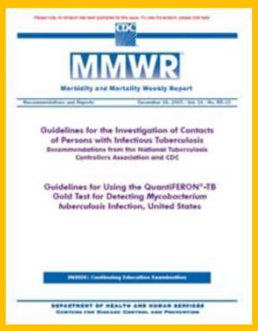

Resources

- Centers for Disease Control and Prevention. Guidelines for the investigation of contacts of persons with infectious tuberculosis: Recommendations from the National Tuberculosis Controllers Association and CDC. 2005; 54(No. RR-15):1-56. Available online at:

http://www.cdc.gov/tb/publications/guidelines/contactinvestigations.htm

- Centers for Disease Control and Prevention. Self-Study Modules on Tuberculosis. Available online at:

https://www.cdc.gov/tb/education/ssmodules/default.htm

- Heartland National TB Center Products. Available online at:

https://www.heartlandntbc.org/products/

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References

Centers for Disease Control and Prevention. (2021). *Core curriculum on Tuberculosis: What the clinician should know*, 7th ed. Atlanta, GA: US Department of Health and Human Services, CDC. Retrieved from https://www.cdc.gov/tb/education/corecurr/pdf/CoreCurriculumTB-508.pdf

Centers for Disease Control and Prevention. *Guidelines for the Investigation of Contacts of Persons with Infectious Tuberculosis: Recommendations from the National Tuberculosis Controllers Association and CDC*, United States. MMWR 2005a; 54 (No. RR-15). Retrieved from https://www.cdc.gov/mmwr/pdf/rr/rr5415.pdf

Nahid, P., Dorman, S.E., Alipanah, N., Barry, P.M., Brozek, J.L., Cattamanchi, A., Chaisson, L.H., Chaisson, R.E., Daley, C.L., Grzemska, M., Higashi, J.M., Ho, C.S., Hopewell, P.C., Keshavjee, S.A., Lienhardt, C., Menzies, R., Merrifield, C., Narita, M., O'Brien, R., Peloquin, C.A., Raftery, A., Saukkonen, J., Schaaf, H.S., Sotgiu, G., Starke, J.R., Migliori, G.B., Vernon, A.; *Executive Summary: Official American Thoracic Society/Centers for Disease Control and Prevention/Infectious Diseases Society of America Clinical Practice Guidelines: Treatment of Drug-Susceptible Tuberculosis*. Clin Infect Dis 2016; 63 (7): 853-867. doi: 10.1093/cid/ciw566

Centers for Disease Control and Prevention. (2016). Targeted Tuberculosis (TB) Testing and Treatment of Latent TB Infection. PowerPoint file. Retrieved from https://www.cdc.gov/tb/publications/slidesets/ltbi/ltbi.pptx

Virginia Department of Health. (2017). www.vdh.virginia.gov/content/uploads/sites/112/2016/10/Contact-Priorities_062617.pdf

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