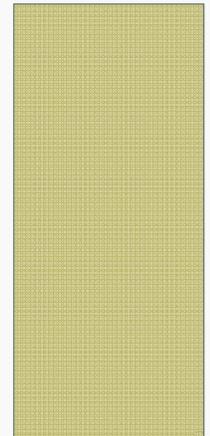


CONTACT INVESTIGATION

LANA JONES, MPH
CONTACT INVESTIGATION COORDINATOR
DEPARTMENT OF STATE HEALTH SERVICES



DECIDING TO INITIATE A CONTACT INVESTIGATION

- Anatomical Site of Disease
 - Pulmonary
 - Laryngeal
- Sputum Bacteriology
 - Positive smear or culture
- Radiographic Findings
 - Lung cavities

DETERMINING TRANSMISSION FACTORS

- Behaviors that increase aerosolization of respiratory secretions
 - Cough frequency and severity are not predictive of contagiousness
 - Singing is associated with TB transmission
 - Sociability of the index case, increased number of contacts

DETERMINING TRANSMISSION FACTORS

- Age
 - Transmission from children aged <10 years is unusual but has been reported
 - Source case investigation is called for
- HIV status
 - With pulmonary or laryngeal disease, are as contagious as those without HIV infection
- Administration of Effective Treatment
 - TB patients rapidly become less contagious after starting effective chemotherapy but exact rate of decrease cannot be predicted

DECIDING TO INITIATE A CONTACT INVESTIGATION

- Consider if the patient
 - Has pulmonary, laryngeal or pleural TB
 - Smear positive: highest priority
 - If chest radiograph suggests cavities
 - Positive result from an approved NAA test
- Generally do not consider if
 - Suspected TB disease and minimal findings in support of a diagnosis of pulmonary TB
 - Exceptions can be justified during outbreak investigations, especially when vulnerable or susceptible contacts are identified or during a source-case investigation

INVESTIGATING THE INDEX PATIENT AND SITES OF TRANSMISSION

Pre-interview phase

- Collect background information about the patient and the circumstances of the illness
- Review the medical record
- Speak to physician or case manager
- Match patient's name to prior TB registries
- Demographic information
- Chemotherapy regimen
- Concurrent medical conditions
- Language spoken

DETERMINING THE INFECTIOUS PERIOD

- Focuses investigation on contacts most likely to be at risk of infection
- A patient (or associate) might be aware of protracted illness (in extreme cases >1 year)
- Three months before the onset of first symptom

DETERMINING THE INFECTIOUS PERIOD

- Close the infectious period when following criteria are satisfied
 - Effective treatment for equal to or greater than 2 weeks
 - Diminished symptoms
 - Mycobacteriologic response (decrease in grade of sputum smear positivity)
 - Multidrug resistant TB extends infectiousness if the treatment regimen is ineffective
 - Any index patient with signs of extended infectiousness should be continually reassessed for recent contacts
 - Patient returning to a congregate living setting should have 3 consecutive negative sputum AFB smear results

INTERVIEWING THE PATIENT

- 1st interview should be in 1 business day of reporting for infectious persons and <3 business days for others
- Face to face in the hospital, TB clinic, home
- 2 interviews are recommended, the second one 1-2 weeks after the first
- Establish rapport and respect, assure privacy
- Information exchange
- Information regarding transmission settings
 - Ask specifically about congregate settings

INTERVIEWING THE PATIENT

- List of contacts
 - List for each setting
 - Get full name and alias
- Closure
- Follow-up interviews
 - Preferably in the patient's residence
- Proxy interview if the patient cannot be interviewed
 - Challenge confidentiality
 - Last resort

FIELD INVESTIGATIONS

- Site visits are complementary to interviewing
- Visit should be made within 3 days of the interview
- Interview and test contacts
- Collect diagnostic sputum specimens
- Schedule clinic visits
- Provide education
- Environmental clues may create new directions for an investigation
- Physical conditions: room size, ventilation system, airflow patterns

ASSIGNING PRIORITIES TO CONTACTS

- Characteristics of Contacts

- Age: after infection, disease is more likely to occur in younger children
- Age <5: high priority, window prophylaxis; more prone to disseminated disease
- Immune status
 - HIV infection: progresses from infection to disease more frequently and rapidly than any other known factor
 - Contacts receiving >15 mg. of prednisone or its equivalent for 4 weeks are also high priority
 - Multiple cancer chemotherapy agents
 - Tumor necrosis-alpha antagonists

ASSIGNING PRIORITIES TO CONTACTS

- Other medical conditions
 - Being underweight for height
 - Silicosis
 - Diabetes mellitus
 - Gastrectomy
 - Jejunioileal bypass surgery
- Exposure
 - Air volume, exhaust rate, and circulation predict the likelihood of transmission in an enclosed space
 - Proximity of contact to index case

ASSIGNING PRIORITIES TO CONTACTS

- Exposure
 - 1: size of a vehicle or car
 - 2: size of a bedroom
 - 3: size of a house
 - 4: larger than a house
- Intensity, frequency, duration of exposure
 - Airline passengers seated for 8 or more hours in the same or adjoining row are more likely infected
- Patient without cavities: cut-off of 120 hours of exposure/month

CLASSIFYING CONTACTS

- Based on characteristics of the index patient, susceptibility and vulnerability of contacts, and circumstances of the exposures
 - High
 - Medium
 - Low
- These classifications are approximations and should be re-evaluated during the contact investigation as findings are analyzed

EVALUATING CONTACTS

- Evaluation should include
 - Previous TB infection and treatment
 - Previous TST/IGRA results
 - Current symptoms of illness
 - Medical conditions or risk factors making TB more likely
 - Psychiatric illness and substance abuse disorders
 - Type, duration and intensity of exposure
 - Socio-demographic factors, including country of birth
 - Voluntary HIV counseling, testing and referral: approximately 9% of TB patients in the U. S. have HIV infection at the time of diagnosis, with 16% of TB patients aged 25-44 having HIV infection

EVALUATING CONTACTS

- All contacts classified as high or medium priority without a previous positive TST/IGRA result or previous TB disease should receive a skin test or IGRA at the initial encounter
- The DSHS Expert Physician Panel has recommended that the IGRA be the TB test of choice
- Contacts with a positive IGRA or TST result of 5 or more mm should be evaluated by a chest X-ray and a symptom screen. If symptomatic, the contact should provide sputum specimens

EVALUATING SPECIFIC GROUPS

- Children <5 years old should receive a TST, CXR and a directed medical evaluation
- If the initial skin test is 5 mm or more, window prophylaxis is recommended after TB disease is excluded
- After a second skin test 8-10 weeks post exposure, the decision to treat is reconsidered
 - If the 2nd test is negative, treatment can be D/C
 - If the 2nd result is positive, give a full course of treatment for TBI

EVALUATING SPECIFIC GROUPS

- Immunocompromised individuals (such as those with HIV infection) should receive similar care as young children
 - IGRA draw, CXR and directed medical evaluation
- Even if a TB test administered 8-10 weeks post exposure is negative, a full course of treatment for TBI is recommended

TREATING CONTACTS WITH TBI

- Benefits of contact investigations include
 - Finding additional TB disease cases, thus interrupting disease transmission by treatment
 - Finding and treating persons with TBI
- National health objective for 2010: complete treatment in 85% of contacts who have LTBI
 - Rates of treatment initiation and completion have fallen short
 - Invest in efforts to focus resources on the contacts most in need of treatment
 - Monitor treatment
 - Provide DOT, incentives and enablers

EXPANDING A CONTACT INVESTIGATION

- Consider expanding the scope of an investigation if any one or more of the following criteria exist
 - Unexpectedly large rate of infection or TB disease in high-priority contacts
 - Evidence of second-generation transmission
 - TB disease in any contacts who had been assigned low priority
 - Infection in any contacts under 5 years of age
 - Contacts with change in skin test status from negative to positive

EXPANDING A CONTACT INVESTIGATION

- After reviewing the results of high and medium priority contacts, select the additional contacts by extrapolating the risks for infection as shown by the data
- When results from an investigation indicate that it should be expanded, but resources are insufficient, seeking assistance from the next higher public health administrative level is recommended

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”. United States. MMWR 2005;54(No. RR-15), pp. 1-47
- Lana Jones: (512)533-3159
- TB forms: texastb.org