Tuberculosis (TB) Contact Investigation and Contact Evaluation

I. AUTHORITY: Florida Statute Chapter 392.54 - TB Control - Contact Investigation. "The department and its authorized agents may counsel and interview, or cause to be counseled and interviewed, any person who has active tuberculosis, who is reasonably suspected of having active tuberculosis, or who is reasonably suspected of having been exposed to active tuberculosis, in order to investigate the source and spread of the disease and in order to require such person to submit to examination and treatment to cure as necessary".

II. TITLE: Protocol for TB Contact, Source Case Investigations and Contact Evaluation

III. TYPE OF STANDARD: Service

IV. OUTCOME: Containment of TB through prevention of secondary TB cases by interrupting the progressive cycle of exposure to infection and potential for progression to disease and further transmission.

V. PERSONNEL: Medical Doctor (M.D.), Doctor of Osteopathy (D.O.), Advanced Registered Nurse Practitioner (A.R.N.P.), Physician Assistant (P.A.), Registered Nurse (R.N.), Licensed Practical Nurse (L.P.N.), Health Services Supervisor (H.S.S.), Health Services Representative (H.S.R.)

Each discipline will perform activities within the constraints of their respective practice acts, job descriptions, and protocols.

VI. PRIORITY OF CONTACT INVESTIGATIONS AMONG TB CONTROL AND PREVENTION ACTIVITIES

The four prioritized strategies critical to the control and prevention of TB in Florida, are below in order of importance to TB control programs:

A. Priority 1: Identify and treat, until completion, all persons who have active TB disease.

B. Priority 2: Perform contact investigation around infectious TB cases.

C. Priority 3: Provide targeted TB testing and complete treatment for latent TB Infection (LTBI) among populations at high-risk for TB.

D. Priority 4: Identify settings at high-risk for increased transmission of TB and apply effective infection control measures to reduce risk.

VII. GOALS AND OBJECTIVES

A. Contact Investigations:

Effective contact investigations identify, examine, and evaluate all persons who are at risk for latent TB infection (LTBI) due to recent exposure to a suspected or confirmed index TB case. Recent contacts of active TB cases have a significantly increased risk of developing active disease. Contact investigations allow for the early detection and treatment of recently acquired latent TB infection, and represent an active TB case finding process that can allow for the initiation of early treatment of new, previously untreated cases of active TB disease. In some instances, contact investigations may actually prevent latent TB infection from occurring.

B. Source Case Investigations:

Source case investigations seek to identify infectious, previously undetected sources to cases of newly acquired TB infection and/or disease, usually in young children. TB disease in children <5 years of age typically indicates that the infection occurred recently. Young children usually do not transmit TB to others thus their contacts are unlikely to be infected because of exposure to them. A source case investigation moves in the opposite direction of contact investigation, even though the principles used in contact investigations apply.

VIII. COMPETENCIES

A. County Health Department (CHD) TB health care providers listed in Section V above must have demonstrated knowledge of the basic principles and concepts related to effective contact investigation for **all community clients**, with suspected or confirmed TB disease, regardless of the source of medical care.

B. CHD TB health care providers must have demonstrated knowledge of the factors that can affect the probability of TB transmission from a suspected or confirmed index case to other persons in the community. These factors include: infectiousness of the index client, duration of exposure, environmental conditions, and susceptibility of host contacts to infection.

C. CHD TB health care providers must have demonstrated knowledge of TB case reporting requirements, the TB client status classification system, and how to contact and conduct appropriate client and provider interviews. Effective client and provider interviews are necessary to collect and validate pertinent information related to the identification of contacts, symptomatology, and home, work/school and leisure environments.

D. CHD TB care providers must have demonstrated knowledge of the activities and required processes to ensure prompt and appropriate medical evaluation of identified contacts. These include, but are not limited to, the TB symptom review, the administration, reading, and interpretation of the Mantoux tuberculin skin test (TST), chest x-ray, and the rationale behind the use of treatment for latent TB infection.

IX. BASIC PRINCIPLES

A. High-priority contacts of TB cases who have smear and culture positive pulmonary or pleural or laryngeal TB are much more likely to become infected with *M. tuberculosis* than are contacts of TB cases who have smear negative or culture negative pulmonary TB. However, contact investigations should be initiated for most pulmonary or pleural or laryngeal TB cases based on acid-fast bacillus (AFB) smear positive and positive *Mycobacterium Tuberculosis Direct Test (MTD)* (nucleic acid amplification test). In certain instances, limited contact investigations may be initiated by TB clinicians based on symptom and/or x-ray evidence. (See Initial Client Interview, decision/logic tables for prioritizing contact investigations, page 10).

B. Contact evaluation is not routinely necessary for clients with **ONLY** extrapulmonary TB disease. Contacts of clients with extrapulmonary TB disease *should only be routinely evaluated* if the index client has concurrent pulmonary or pleural or laryngeal TB disease.

X. SPECIFIC AREAS OF RESPONSIBILITY

Florida Statute 392.51 documents the responsibility of the Department of Health and the respective county health departments for the control and prevention of TB in the community. Consistent with this legal framework, CHD personnel have specific responsibilities associated with TB contact investigations.

A. The CHD Director or Designee is responsible for:

1. Directly assigning an appropriately licensed, registered nurse to serve as the case manager for each client with suspected or confirmed TB reported within their health jurisdiction. **This responsibility includes those clients in the community who are under the medical supervision of non-health department health care providers.**

2. Providing supervision of TB nurse case managers and other health department staff to ensure the appropriate implementation of effective contact investigation, source case investigation and contact evaluation practices.

B. The Nurse Case Manager is responsible for:

1. Assessing each report of suspected or confirmed active TB disease for the potential to transmit TB infection to other persons in the community.

2. Prioritizing the implementation of contact and source case investigations is based on individual assessments. Prioritization should also be influenced by the possible consequences of infection (especially for HIV-infected contacts, other immunosuppressed individuals, including those persons who have had

organ transplants, are under anti-cancer chemotherapy, or contacts who are very young children) and balanced by the availability of appropriate staff.

3. Ensuring close contacts identified during the investigation are fully evaluated for TB disease and TB infection.

4. Ensuring TB-infected contacts are fully evaluated for the purpose of appropriate treatment for latent TB infection and, if placed on treatment for LTBI, ensure the completion of treatment.

5. Providing technical assistance to other health care providers within the community to ensure that all contacts are identified and evaluated for appropriate treatment for LTBI.

6. **The Nurse Case manager may delegate to other *qualified, appropriately trained individuals* to assist her/him in conducting these activities.**

XI. CONTACT INVESTIGATION AND CONTACT EVALUATION PROTOCOLS

A. Collection of Pertinent Information (Pre-interview Analysis)

Prior to the interview of the client with suspected or confirmed active TB disease, the following information should be collected by the nurse case manager within 48 working hours of the suspect/case report to the CHD. A field visit or a phone call to the client within this time period should be attempted to assist in obtaining the following information:

1. Site of disease;

2. Type and date of onset of symptoms;

3. Chest x-ray result(s);

4. Mantoux tuberculin skin test (TST) results;

5. Specific TB medications and their start dates;

6. Pertinent laboratory results (nucleic acid amplification (e.g., MTD)/smear/culture), whenever possible; nucleic acid amplification should be performed on smear positive cases to confirm *Mycobacterium tuberculosis*;

7. Other medical conditions;

8. Employment history, including work site information such as location, shift, and duties;

9. If student, information related to classes, school related activities, and

transportation (buses, etc.); and

10. Living situation, emergency contact information, social and cultural factors.

B. Contact Investigations and MTD Results

1. Currently, the *Mycobacterium Tuberculosis Direct Test (MTD)*, a FDA-approved nucleic acid amplification test, is provided by the State of Florida Bureau of Laboratories. This test is performed on all new clients with positive AFB smears from pulmonary or pleural or laryngeal specimens. The results of the test determine if there is genetic material for TB in the specimen, but the test should be confirmed by culture for the specimen to be reported as positive for *M. tuberculosis (M.tb)*. However, one should not delay reporting of an MTD positive result because the culture result is not yet known.

2. The *MTD* has been confirmed by culture in over 90% of specimens referred to the Bureau of Laboratories. As results for this test are routinely available within 48 hours, the bureau recommends that most contact investigations be limited or postponed until the *MTD* results are known, in order to ensure that a positive AFB smear truly represents *M.tb*. and not a non-tuberculous mycobacterium (NTM). This is particularly the case for extended, high profile investigations such as schools and other facilities involving children, nursing homes or other congregate facilities, and work sites. However, it may be appropriate to provide immediate TSTs and symptom assessments for close family contacts and/or certain other high-priority contacts for TB cases with, e.g. cavitary disease, noticeably symptomatic close contacts, typical gross x-ray presentations, etc.

3. Contact investigation for cases with 2 negative *MTD* tests should usually be postponed until culture results are known, as these cases, if they are TB disease, tend to be less infectious. The Bureau recommends that *MTD* testing be offered to cases managed by non-health department health care providers for appropriate TB suspects.

Please contact the TB Physicians Network at 1-800-4TB-INFO (1-800-482-4636) or the Bureau of TB and Refugee Health at 850-245-4350 or SC 205-4350 for consultation if there are questions or concerns.

C. Initial Client Interview

1. The initial contact interview, should be conducted **within three working days** of the determination of risk for all TB cases/suspects identified at high-risk or potentially at high-risk for TB transmission (infectious or potentially infectious TB cases). Such cases include the following:

   a. Pulmonary or pleural or laryngeal AFB smear and culture positive clients;

b. Pulmonary or pleural or laryngeal AFB smear positive clients who also have positive MTD results;

c. Pulmonary or pleural or laryngeal AFB smear positive clients, culture unknown, when MTD is not done (an additional specimen should be obtained and submitted to the Bureau of Laboratories for the MTD assay.);

d. Pulmonary or pleural or laryngeal smear negative, culture positive clients; and

e. Pulmonary or pleural or laryngeal cases with significant symptoms, gross x-ray evidence (cavitary disease), etc. as directed by TB clinician.

2. The designated nurse case manager for the client or their *trained* designee should conduct the initial interview, using the Tuberculosis Contact Investigation Report, DH 2109 (available on the TB website: http://www.doh.state.fl.us/disease_ctrl/tb/TBForms/DOHpdfforms/TBFormslist.htm). The interview should be performed in person, and is optimally conducted in the client's home environment, but may be conducted in a hospital or clinic setting for clients/suspects at high-risk for transmission to expedite contact investigations. **A home visit must be made by the nurse case manager for all infectious or potentially infectious TB cases** to assist in validating the interviewer's assessment of the client's environment, and to assist in the safe and expedient discharge of the client from the hospital.

3. If the client is receiving treatment from a non-health department health care provider, **the health care provider will be informed that a contact interview will be conducted**. The health care provider should also be informed of the purpose of the contact interview and that the information obtained from the contact interview will be kept strictly confidential. In addition, the interviewer will review all documentation pertinent to the client's TB disease to determine the client's infectious period.

4. If the client is unavailable for the interview for reasons such as the client was dead at the time of diagnosis or is unable to be located, a proxy interview should be conducted. Those individuals most familiar with the client's life-style, work/school, and recreational habits should be interviewed to assist in the identification of contacts and determination of risk for those contacts. Although the client's confidentiality may be compromised by the use of a proxy interview, it is important to protect the public by using this disease intervention strategy.

5. During the client interview, the interviewer will display official identification and explain the county health department's role in the contact investigation and the purpose of the interview.

a. The interviewer should stress to the client that all information obtained will be kept confidential and how confidentiality is maintained.

b. The interviewer should review all previous information with the client to ensure that this information is correct and ensure that the necessary information has been obtained to complete the required Report of Verified Case of Tuberculosis (RVCT) form. *(It is also recommended that the Cluster Interview Form be filled out at this time and kept with the Contact Investigation Record.)* Contact your local area TB manager/coordinator if you are unfamiliar with these forms.

c. The interviewer should allocate sufficient time to conduct the interview.

d. The interviewer should repeatedly assess the client's ability to comprehend the information being presented. If there are any concerns regarding the client's ability to understand because of cultural, language or other barriers, the interviewer should immediately obtain assistance from other members of the case management team. If language is the barrier, the interviewer should obtain assistance from a medical interpreter, either in person or telephonically.

e. The interviewer should repeatedly assess the client's understanding of TB and how it is transmitted.

f. The interviewer should determine the client's infectious period. The infectious period begins on the date of TB symptom onset (consider an earlier date if the client is a poor historian and/or highly infectious) and ends when the following have occurred: the client has shown clinical improvement, has been on adequate TB treatment for at least 14 days, and has had 3 consecutive smears negative for AFB. If the client is asymptomatic or is a poor historian, the infectious period begins at least 12 weeks prior to the date of the TB diagnosis.

g. Obtain information concerning the client's contacts:

    1) Collect information concerning contacts in the client's home environment, school and/or work settings, and in leisure and/or social settings during the client's estimated infectious period. In order to ensure that all appropriate contacts from the different settings are named, open-ended questions should be used. For example, How do you spend your time during a typical day? What do you do and where do you go on the weekends?

    2) The interviewer should ask for names of contacts and the approximate types, frequencies, and duration of exposure. Ask for full name, aliases, nicknames, a physical description, addresses and telephone numbers, etc.

3) Use the social networking approach, which entails, asking the client where and how he/she spends their time. This may be particularly useful when interviewing a client who is homeless or claiming not to have any contacts. Find out where he/she has been staying or hanging out, and for high-priority, highly infectious clients consider conducting targeted testing in these areas.

4) **Always re-interview the client several times to ensure that all appropriate contacts are identified.** Consider every interaction with the client as an opportunity for a re-interview, i.e. DOT visits, drawing blood, health department appointments, etc.

5) **A contact investigation is an ongoing process.** TB clients will be receiving care for a minimum of six months and the case management team should **continue efforts to identify additional contacts throughout the treatment period**.

6) When possible, re-interviews should be conducted by different, trained staff in an effort to elicit the most complete information.

   a) Have the client sign an Acknowledgement of Tuberculosis Counseling Form, DH 1179.

   b) Determine the priority (high, medium, low) status for each contact identified.

   c) Review the infectious potential of the index case including factors such as AFB smear, MTD, culture, and chest x-ray results.

   d) Review the environmental conditions of exposure to the index client.

   e) Assess contacts for medical risk factors and medical history.

Note: *The tables on the following page should be used to assign priority status to contacts identified during the interview. Recognizing that initial prioritization may be made with imperfect information, reclassification of priority status should be revisited as the investigation develops.*

Pulmonary/Pleural/Laryngeal AFB Smear (+), MTD(+), or Cavitary TB

High-Priority Contacts	Medium-Priority Contacts	Low Priority-Contacts
All household members	Contacts 5 to 15 years of age	Contacts not listed in another category and exposure time can be explained as extremely minimal that any transmission would not reasonably be suspected
Contacts < 5 years of age	Contacts not listed as high-priority with significant exposure***	
Contacts with a medical risk factor*		
Contacts exposed during a medical procedure**		
Contacts in a congregate setting		
Contacts with significant exposure time		

Pulmonary/Pleural/Laryngeal AFB Smear (-),culture (+), abnormal chest x-ray consistent with TB

High-Priority Contacts	Medium-Priority Contacts	Low Priority-Contacts
Contacts <5 years of age	Household members	Contacts not listed in another category and exposure time can be explained as extremely minimal that any transmission would not reasonably be suspected
Contacts with a medical risk factor*	Contacts in a congregate setting	
Contacts exposed during a medical procedure**	Contacts with significant exposure time***	

Suspected Pulmonary/Pleural/Laryngeal TB AFB smear (-), MTD (-), culture (-), abnormal chest radiograph not consistent with TB

High-Priority Contacts	Medium-Priority Contacts	Low-Priority Contacts
	Household members.	Any contact not listed in another category and exposure time can be explained as extremely minimal that any transmission would not reasonably be suspected
	Contacts <5 years of age	
	Contacts with a medical risk factor*	
	Contacts exposed during a medical procedure**	

Medical Risk Factors associated with increased risk of infection include:
HIV+, diabetes, silicosis, individuals receiving ≥15mg of prednisone or its equivalent for ≥4 weeks, other immune suppressing medications such as anti-cancer chemotherapy and transplant rejection inhibitors, post gastrectomy or jejunoileal bypass surgery.

Medical Procedures: Bronchoscopy, sputum induction, irrigation of a wound, or autopsy.

****Consider expert consultation if there are questions or concerns related to specific exposure conditions/circumstances. Contact the Bureau of TB and Refugee Health at (850) 245-4350/SC 205-4350 or the TB Physicians Network at 1-800-4TB-INFO (1-800-482-4636).***

D. Initiate Contact Follow-up Activities

1. Examination of high-priority contacts for TB infection and disease should be performed by the Nurse Case Manager or by a *trained* designee under the supervision of the Nurse Case Manager **within 7 working days** and medical assessment of high-priority contacts should be completed **within 10 working days**, of identification.

2. Contacts should be questioned concerning:

   a. Previous exposure to TB and

   b. Previous **documented** Mantoux tuberculin skin test results.

3. Symptoms of TB; and risk factors for progressing to active TB disease [for risk factors, see TA-TB 3: Tuberculosis Targeted Testing and Treatment of Latent TB Infection (LTBI), p. 8-9.]

   a. A Mantoux TST should be provided **unless**:

      1) There is a **documented** history of TB disease;

      2) There is a **documented** history of a previous positive Mantoux TST with a reading in millimeters (mm); and/or

      3) There is a **documented** history of an adverse reaction to a TST in the past.

   Note: Two step tuberculin skin testing should *not* be used for testing contacts. A contact whose second skin test is positive after an initial negative result should be classified as recently infected.

4. HIV testing is suggested for all high-priority contacts to active, infectious or potentially infectious TB cases.

   Note: For high-priority contacts to active TB cases that are at high-risk for HIV, *HIV tests should always be provided*. (Orasure can be provided to TB programs for field HIV testing of contacts. Appropriate training of persons who will administer Orasure tests must be provided to ensure that specimens are properly collected and handled and that the contact receives appropriate pre- and post-test counseling. To obtain Orasure, consult the CHD's HIV Early Intervention Consultant or the HIV/AIDS Program Office).

5. All contacts to TB cases, who have documented HIV infection, are at high-risk for HIV infection or are otherwise immunosuppressed (including those with organ transplants):

    a. Should be evaluated for active TB disease **immediately** by:

        1) Providing a chest x-ray as soon as possible;

        2) Evaluating for symptoms suggestive of TB (i.e., chronic productive cough, hoarseness of 3 or more weeks, weight loss, etc); and

        3) Three sputum smears should also be **immediately** collected on 3 consecutive days or at least 8-24 hours apart for symptomatic contacts.

    b. If active TB is ruled out, provide appropriate education and recommend treatment of LTBI until completion regardless of TST results.

    c. If there is a question that the HIV infected (or other significantly immunocompromised) client possibly has active TB disease, begin therapy with four drugs until active disease is ruled out.

6. A chest x-ray should also be provided immediately (prior to TST results) for the following contacts to infectious or potentially infectious TB cases:

    a. Children less than 5 years of age and

    b. Those with symptoms suggestive of TB (i.e., chronic productive cough, weight loss, etc.). Three sputum specimens should also be immediately collected on 3 consecutive days or at least 8-24 hours apart for symptomatic contacts.

7. For all other (non-immunosuppressed) high-priority contacts to an infectious pulmonary or pleural or laryngeal TB case that have a Mantoux TST reading of 5 mm or more. (Also see section XII. "Important Considerations for Treatment of Latent TB Infection"):

    a. Arrange for a chest x-ray.

        1) If the chest x-ray is normal and the contact is asymptomatic, evaluate the contact for LTBI treatment. If treatment is recommended, ensure completion of treatment.

        2) If the chest x-ray is abnormal and/or the contact is symptomatic, evaluate as a TB suspect.

8. For all other (non-immunosuppressed) high-priority contacts to infectious or

potentially infectious pulmonary or pleural or laryngeal TB cases with a Mantoux TST of 0-4 mm, see below:

a. For those contacts less than 5 years of age:

1) Arrange for a chest x-ray.

2) If the chest x-ray is normal, recommend treatment for LTBI ("window period" prophylaxis) and continue until the follow-up Mantoux TST is placed and read.

3) Repeat the Mantoux TST. **In general, follow-up testing for TB infection in a contact investigation ("window period testing") should be performed 10 weeks (and no sooner than 8 weeks) after the last contact with the client, while she/he was still considered infectious. Recognize that each situation may be handled differently depending on the clinical scenario and as such, consultation with a physician expert in contact investigations should be sought.** If the repeat Mantoux TST remains less than 5mm, discontinue treatment for LTBI and discharge from supervision if the index case is non-infectious and/or contact has been broken with the index client.

4) If the Mantoux TST has converted to 5 mm or larger, continue with treatment for LTBI to completion.

b. For those contacts 5 years of age or older:

1) If the initial Mantoux TST is 0-4 mm, repeat the TST. **In general, follow-up testing for TB infection in a contact investigation should be performed 10 weeks (and no sooner than 8 weeks) after the last contact with the client, while she/he was still considered infectious. Recognize that each situation may be handled differently depending on the clinical scenario and as such, consultation with a physician expert in contact investigations should be sought.**

2) If repeat TST remains 0-4 mm, discharge from follow-up.

3) If the Mantoux TST converts to 5 mm or larger, provide a chest x-ray.

4) If the chest x-ray is normal, and if the client is asymptomatic, evaluate for LTBI treatment. If treatment is recommended, ensure completion of treatment.

5) If the chest x-ray is abnormal or the contact is symptomatic, evaluate as a TB suspect.

Contact the Bureau of TB and Refugee Health at (850) 245-4350/ SC 205-4350 or the TB Physicians Network at 1-800-4TB-INFO (1-800-482-4636) for expert consultation.

9. For management of all contacts with a previously **documented** positive Mantoux TST: (See section XII. "Important Considerations for Treatment of LTBI")

    a. Screen carefully for TB symptoms.

    b. If symptomatic, provide a chest x-ray and manage as a TB suspect.

    c. If asymptomatic, with no other medical or other risk factors, and no previous LTBI treatment completion, medically and epidemiologically evaluate for the need for an x-ray and treatment for LTBI.

    d. If **not** immunocompromised, asymptomatic, and the client has completed a documented adequate course of treatment for LTBI, further follow-up is not usually recommended.

    e. If immunocompromised, asymptomatic and no previous history of LTBI treatment, obtain a chest x-ray, ensure that active TB is ruled out and if this chest x-ray is normal, recommend treatment for LTBI and assure completion. If the chest x-ray is abnormal, manage as a TB suspect.

    f. If immunocompromised, asymptomatic, and the client has completed an adequate course of LTBI treatment, arrange for a chest x-ray and refer for medical evaluation to review the possible need for a repeat course of treatment for LTBI. If active TB disease is not ruled out, manage as a TB suspect.

    g. Educate the contact regarding signs and symptoms of TB disease and advise to see their health care provider **immediately** if signs and symptoms occur.

10. For management of INH resistant TB contacts:
    a. Evaluate contacts as per risk.
    b. Contact the Bureau of TB and Refugee Health at (850) 245-4350/SC 205-4350 or the TB Physicians Network at 1-800-4TB-INFO (1-800-482-4636) for expert consultation prior to initiating a regimen for treatment of LTBI.

11. For management of contacts to INH and rifampin resistant TB (MDR-TB):

    a. Evaluate contacts as per risk.

b. Always obtain expert consultation prior to initiating a regimen for treatment of latent TB infection for contacts to clients with multi-drug resistant or extensively-drug resistant TB disease. For expert consultation contact the Bureau of TB and Refugee Health at (850) 245-4350/SC 205-4350 or the TB Physicians Network at 1-800-4TB-INFO (1-800-482-4636).

12. Management of contacts by health care providers other than CHDs:

    a. For contacts located in municipal or county jails, refer to TA-TB 7: Guidelines - "Prevention and Control of Tuberculosis (TB) in Short-Term Correctional Facilities (Municipal and County Jails)".

    b. Contacts followed by non-health department care providers are subject to the same follow-up guidelines as contacts followed by CHDs.

    c. The nurse case manager must obtain from the health care provider information concerning Mantoux TST results, chest x-ray results, and monthly status reports of treatment for LTBI contacts.

    d. If the contact is receiving medication for treatment for latent TB infection from the CHD, the private health care provider must provide a prescription and a monthly status report for each contact.

13. For contacts who move or are returning home either out of state or to another county within Florida (e.g., migrants, visitors) and require either an initial or a follow-up TST or further evaluation:

    a. Find out where that person's next stop will be or their home location. Obtain address, telephone numbers, and local CHD and/or private provider name, address, and telephone numbers.

    b. Provide a letter for the person to take with her/him on CHD letterhead stating the person is a contact to a TB case, including testing results, if available, when the next TST is needed, and a contact person at your CHD for the provider or CHD to contact for more information.

    c. Advise the contact of the importance of following through with the testing process until active disease or LTBI is ruled out.

    d. If during the initial testing the person has a positive Mantoux TST or if the person has a documented previous positive, advise the person of the importance of taking a full course treatment for LTBI.

E. Evaluation of Contact Investigation Outcomes

1. Concentric Circles of Investigation

a. The extent of a contact investigation will be determined utilizing the concentric circle approach. Contact investigations are initiated by examining high- and medium-priority contacts, that is, those who have had the greatest risk of exposure to the index case in the home, work/school, or leisure/social settings.

b. Evaluate the results of the high-and medium-priority contacts. If there is evidence of transmission in high-priority contacts (e.g., a higher than expected number or percentage of positive Mantoux TSTs, and/or converters, or secondary active TB cases), initiate follow-up to the next priority of contacts whose exposure places them in a lower priority status.

It is essential that the case management team carefully review each infectious TB client to determine if the contact investigation should be extended.

Consider expert consultation if concerns are identified related to specific population groups or other unusual circumstances. Contact the Bureau of TB and Refugee Health at (850) 245-4350/SC 205-4350 or the TB Physicians Network at 1-800-4TB-INFO (1-800-482-4636).

F. On-going Evaluation

1. The progress of the contact investigation and follow-up should be reviewed by the case management team and/or nurse case manager at several intervals. These include:

   a. After assessment and determination of contact priority status;

   b. After or near completion of the initial contact investigation;

   c. After completion of all contact follow-up activities including completion of treatment for LTBI; and

   d. At any time problems occur, which could delay the contact investigation.

Note: Completion of treatment for latent TB infection for identified high-risk contacts is absolutely critical. If this treatment is not completed, previously related contact follow-up efforts to identify, test, and implement therapy are essentially in vain as there is little or no resulting public health benefit to the community. Strategies including the use of incentives and enablers, education and re-education of the client, and directly observed treatment regimens should be used to improve completion of treatment outcomes.

XII. IMPORTANT CONSIDERATIONS FOR TREATMENT OF LATENT TB INFECTION (LTBI)

A. Treatment of LTBI for HIV Infected and Other Severely Immunosuppressed Individuals

1. All HIV infected and other severely immunosuppressed individuals who require treatment for LTBI should be ***strongly*** considered for Isoniazid (INH) Directly Observed Therapy (DOT) for 9 months. This can be given either daily or biweekly, but biweekly administration ***must*** be given by DOT.

2. Daily and biweekly short course treatment ***must*** be given by DOT and expert consultation should be considered before beginning such regimens.

   Limitations of the regimen include:

   a. Exclusion of active disease ***prior*** to implementing short course treatment;

   b. Rifampin may not be used concurrently with some protease inhibitors or some non-nucleoside transcriptase inhibitors (NNRTI);

   c. Rifampin may interfere with the metabolism of certain drugs, such as methadone and birth control pills, which causes them to be less effective;

   d. These regimens have not been tested in groups outside of HIV positive individuals, however, their effectiveness in other groups is expected to be comparable; and

   e. This regimen has not been tested in children.

   Prior to administering a short-course regimen for treatment of latent TB infection, consult with the TB Physicians Network, at 1-800-4TB-INFO (1-800-482-4636) and refer to the specific recommendations issued by the Florida Department of Health Bureau of TB and Refugee Health for this therapy.

   Also see TB-TA 3: Tuberculosis Targeted Testing and Treatment of Latent TB Infection (LTBI) for further information.

XIII. SOURCE CASE INVESTIGATIONS

Source case investigations should currently be implemented only in populations determined to be at particular high-risk for TB after a thorough assessment of potential risk is conducted. In addition, source case investigations should not be given preference over higher priority activities (e.g., treatment of active TB clients, contact investigations, and targeted testing and treatment of latent TB infection in populations documented to be at high-risk for disease and/or high-risk for progression from infection to disease.)

A. Purpose:

1. A source case investigation determines the recent source of TB infection or newly diagnosed TB disease in a child or adult. Although these cases are not in themselves sources of infection for others, additional new cases and a high yield of infected individuals may be found originating from a common source of infection. Examination of the closest **associates**‡ is usually all that is necessary, but the investigation may be expanded if more persons with LTBI are found and the source case is not immediately identified.

   (‡In a source case investigation, **associate** refers to those individuals who have had the closest association or contact with the infected child or converter, similar to a contact in a TB case investigation.)

B. Priority of Investigation:

1. Source case investigations are of lower priority than the critical TB core activities such as, treatment to completion of active TB cases, contact follow-up and treatment of contacts with LTBI, and targeted testing and related LTBI treatment. If resources are available and these core activities are being effectively managed, the first priority for source case investigation is a child under the age of 5 with active TB disease. If resources allow, source case finding can be attempted for children less than 2 years of age with latent TB infection.

2. Employing the concentric circle of epidemiological investigation, begin the investigation by examining the closest associates to the child, expanding the circle only if it clearly appears a source of infection must be close by and yet unidentified.

C. Medical Management of Associates to a Source Case:

1. Conduct a clinical evaluation of associates.

2. Place Mantoux TST.

   a. If the associate is symptomatic, obtain a chest x-ray and sputum specimens.

3. Provide Mantoux TST reading.

   a. If the Mantoux TST is negative and the associate is asymptomatic, discharge associate from follow-up.

   b. If the Mantoux TST is 10 mm or more, provide a chest x-ray and, if the x-ray is normal, evaluate for LTBI treatment. If the chest x-ray is abnormal, follow as a TB suspect.

XIV. REFERENCES

Centers for Disease Control and Prevention. “Contact Investigations for Tuberculosis: Self-Study Modules on Tuberculosis,” October, 1999.

Centers for Disease Control and Prevention. “Controlling Tuberculosis in the United States”. MMWR November 4, 2005/Vol. 54/No. RR-12.

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,” MMWR December 16, 2005;54 (No. RR-15).

Centers for Disease Control and Prevention. “Treatment of Tuberculosis”. MMWR June 20, 2003/Vol. 52/No. RR-11.