New Jersey Department of Health and Senior Services
Practice Standard for Contact and Source Case Investigations

INTRODUCTION

Justification

The primary responsibility and highest priority of any effective TB control effort is the identification of individuals with tuberculosis (TB) disease, prompt initiation of appropriate treatment and the completion of therapy. The second highest priority is the identification of contacts with sufficient exposure to a suspected or confirmed infectious or potentially infectious TB case to increase the likelihood of acquisition of latent TB infection (LTBI).

Once identified, these contacts must be evaluated and treated as indicated by this Practice Standard. Newly identified LTBI in contacts to suspected or confirmed infectious or potentially infectious TB must be assumed to be recently acquired.

One-half of all individuals who will eventually develop disease will do so within two years of infection, so completion of treatment for LTBI in contacts is essential to eventual TB elimination. A contact investigation or source case investigation may also result in the identification of individuals with previously undiagnosed and untreated infectious or potentially infectious TB disease, thus interrupting transmission in the community.

These Standards of Practice assign responsibility for every aspect of contact and source case investigation to the nurse case manager. The nurse case manager may delegate these responsibilities to field staff or others, but retains responsibility for adherence to these Standards. The Standards represent the minimum expected of each nurse case manager conducting contact and/or source case investigations. The effort required **may** be exceeded, but **must** be met.

Objectives of this Practice Standard

This Practice Standard is designed to:

1. Serve as a guide for effective contact investigation and source case investigation throughout New Jersey and

2. Standardize the practice of these investigations statewide.

This document is not an acceptable substitute for training in the specific skills essential to perform this vital public health activity.

Definitions

"Clinically confirmed infectious or potentially infectious TB disease" is pulmonary or laryngeal TB disease for which no culture was identified as *M.tb* or *M.tb* complex, but whose symptoms or chest x-ray findings improved while on anti-TB medications.

"Congregate site" or **"congregate setting"** is defined as an environment where a number of people meet or gather and share the same space for either a limited or extended period of time. Congregate sites include, but are not limited to, a residential

living or treatment facility, nursing home, hospice, jail, prison, shelter, bar, church, workplace, daycare center or school.

"Contacts" are individuals identified by the public health department who have had exposure to a person with suspected or confirmed potentially infectious TB disease sufficient in both duration and proximity to make him or her at risk for recent acquisition of latent TB infection (LTBI). The likelihood for transmission is also impacted by the environment in which the exposure occurs and the potential infectiousness of the index case.

"Contact investigation" is the identification, evaluation and treatment (as appropriate) of contacts to suspected or confirmed infectious or potentially infectious TB disease. Its primary objective is to treat persons with recently acquired LTBI to reduce the risk of progression to active disease which is significant within the first two years post-infection.

"Exposure" occurs when an individual shares air with an infectious or potentially infectious TB suspect or case, but exposure **does not** necessarily indicate that an individual will be classified or evaluated as a contact (see "Contacts" above).

"Exposure Period" is the period of time during which an individual is exposed to a potentially infectious index case. The exposure period pertains **ONLY** to a potential contact, **NOT** the index case. The exposure period of a potential contact may be identical to the infectious period of the index case, but cannot exceed the infectious period of the index case.

"Extra-pulmonary TB" is TB disease that is suspected or confirmed to be present outside the respiratory tract. With the exception of TB of the larynx or laryngeal TB, extra-pulmonary TB disease is not typically infectious or potentially infectious to others.

"Index case" is the person with **suspected or confirmed** infectious or potentially infectious TB disease for whom a contact investigation is initiated.

"Infectious Period" is the period of time when a potentially infectious index case is most likely capable of transmitting TB to others. The infectious period pertains **ONLY** to the index case and **NOT** to potential contacts.

"Latent TB infection (LTBI)" is the presence of *Mycobacterium tuberculosis* (*M.tb*) bacteria in the body as evidenced by a significant reaction to a Mantoux tuberculin skin test or positive QuantiFERON®-TB Gold blood assay. A person with a final diagnosis of latent TB infection is not diseased, nor are they infectious.

"Source case" is the TB case that is most likely to have been the original source of transmission. Generally the index case is the source case, however, if a contact or source case investigation identifies an individual with previously undiagnosed and untreated infectious or potentially infectious TB disease who is more likely to have been the original source of transmission, this new case may be determined to be the source case.

"Source case investigation" is an investigation that is routinely performed surrounding TB disease diagnosed in children < five (5) years old. Its primary purpose is to identify the source of the child's disease. This source is typically an adult with previously undiagnosed and untreated infectious or potentially infectious TB disease that had contact with the child of sufficient duration and/or proximity to make them the likely source case.

"Suspected or confirmed potentially infectious TB" is defined by one or more of the following:

1. A person with a smear positive for acid fast bacilli and/or nucleic acid amplification test positive for *M.tb* and/or a culture positive for *M.tb* or *M.tb* complex. This applies only to specimens from sputum, brochioalveolar lavage, gastric aspirate, lung tissue or other tissue of the respiratory tract such as the larynx or epiglottis.

2. A person with a chest radiograph or clinical findings indicative of pulmonary tuberculosis sufficient to prescribe treatment with anti-tuberculosis medications.

3. A person whose chest radiograph or respiratory symptoms improve on anti-tuberculosis medication.

4. A person with respiratory symptoms indicative of pulmonary tuberculosis until a diagnostic evaluation is completed to rule out TB as a cause of these symptoms.

"TB case" is an individual with confirmed TB disease, either clinically or by positive culture identified as *M.tb*.

"TB suspect" is an individual who is believed to have TB disease to a sufficient degree for a licensed physician to initiate anti-TB treatment.

"Vulnerable population" consists of persons who are at risk for rapid progression to TB disease once infected. These populations would include, but are not limited to persons;

- With HIV infection,
- On corticosteroid therapy (equivalent of ≥ 15 mg/day of prednisone for ≥ 1 mo),
- On tumor necrosis factor (TNF) alpha blocker therapy,
- On renal dialysis (end-stage renal disease),
- With cancer of the head or neck,
- On cancer chemotherapy, or
- Children under the age of five years.

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Structure of the Document

Effective investigations consist of multiple steps. Each of these steps will be discussed in one or more of the eight chapters in this Practice Standard. These chapters are:

Chapter 1: Assessing the Infectiousness of the Index Case
Chapter 2: Interview Process
Chapter 3: Infectious Period
Chapter 4: Exposure Assessment
Chapter 5: Congregate Site Assessments
Chapter 6: Evaluation of Contacts
Chapter 7: Treatment and Monitoring
Chapter 8: Source Case Investigations

Appendix 1: TB Index Case Assessment Form
Appendix 2: TB-41 Record of Contact Interview
Appendix 3: Instructions for completing the TB-41 Record of Contact Interview
Appendix 4: Pre-Interview Chart Audit Tool
Appendix 5: Patient Assessment Form (PAF)
Appendix 6: Notification of Precautions Required to Protect the Public Health
Appendix 7: Exposure Assessment Worksheet
Appendix 8: Guidelines for Completing the Exposure Assessment Worksheet
Appendix 9: Exposure Assessment Process (algorithm)
Appendix 10: Public Health Incident Report
Appendix 11: Permission Slip for Testing for Latent TB Infection
Appendix 12: First Testing Letter
Appendix 13: Second Testing Letter
Appendix 14: General Information Letter
Appendix 15: Congregate Setting Appreciation Letter
Appendix 16: Template - Public Health Warning Notice for Diagnostic Evaluation
Appendix 17: Template - Health Officer Order for Diagnostic Evaluation
Appendix 18: Contact Investigation Checklist

Training and Mentoring

Many of these essential steps require specialized skills. These skills include;

- Rapport building,
- Interviewing skills/technique,
- Exposure assessment/analysis,
- Testing for LTBI/medical evaluation/treatment recommendations, and
- Nurse case management through completion of treatment for LTBI.

Periodic training is available for each of these skills and individuals conducting contact investigations must be adequately trained for the potential of these activities to be fully realized. On-site mentoring and/or consultation for direct patient care staff members in clinics performing contact investigation locally is also available through the NJDHSS TB Program at (609) 588-7522.

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CHAPTER 1: ASSESSING THE INFECTIOUSNESS OF THE INDEX CASE

The importance of any contact investigation is directly proportional to the potential infectiousness of the index case. The potential infectiousness of the index case is determined by four factors independent of environment. These factors are:

1. **Site of disease**

All suspected or confirmed cases of pulmonary TB are potentially infectious. Extra-pulmonary TB is not typically infectious, with the exception of TB of the larynx which is infectious.

2. **Sputum smear results**

Pulmonary TB suspects or cases with sputum smears positive for acid fast bacilli (AFB) have a higher potential for infectiousness than those whose sputum smears are negative for AFB. The significance of positive smear results from respiratory sources other than sputum in determining the infectiousness of the index case is not currently known, but may be assumed to somewhat less significant than a sputum smear positive for AFB.

Collection or induction of sputum is essential for every suspected or confirmed pulmonary TB case, regardless of other respiratory specimens submitted for smear and culture (see *Standards of Care for Tuberculosis Disease and Latent TB Infection*, Standard #4: Collection and Evaluation of Sputum and Other Specimens)**. Sputum must be collected or induced as soon as possible after TB is suspected.**

3. **Chest radiograph or CT scan**

Pulmonary TB suspects or cases with cavitary lesions on chest radiograph or CT scan have a higher potential for infectiousness than those without cavitary lesions.

4. **Symptoms**

Pulmonary TB suspects or cases with an abnormal chest film consistent with TB and a history of cough and/or hemoptysis have a higher potential for infectiousness than those without these symptoms. The presence or absence of these symptoms, however, cannot generally be determined without a medical record review and/or direct observation and patient interview. It is generally the most subjective of the four measures of infectiousness.

Assessment of Infectiousness

NJDHSS has developed a method to assist with the assessment of the potential infectiousness of an index case. It is based on a combination of the four factors above and results in a designation of high or low risk for transmission. These risk designations for the index case will facilitate an exposure assessment for all potential contacts (see Chapter 4). The system begins by assigning a numerical value to specific characteristics of the index case related to risk for transmission. These numerical values are then totaled and cut-points are used to assign a risk for transmission to each potentially infectious index case (see page 6).

Characteristics of the Index Case

Bacteriology, if done (choose the highest scoring applicable option only)	
Suspected or confirmed laryngeal TB	10
Sputum smear (+) for AFB	10
Smear (+) for AFB from other respiratory source	8
Smear (-), culture positive for *M.tb* from any respiratory source	3
Smear (-), culture pending or culture negative from any respiratory source	0
Clinical case definition, pulmonary TB	0

Radiology (choose applicable option only)	
Cavities on CXR or CT scan	5
Non-cavitary, abnormal CXR consistent with TB	2

Symptoms (choose applicable option only)	
History of cough and/or hemoptysis	5
No history of respiratory symptoms	0

Total for applicable index case characteristics
(Add all values above that are applicable to the index case in question)

Total score 10-20 = Index case presents **high risk** for transmission
Total score 03-09 = Index case presents **low risk** for transmission
Total score 00-02 = Risk for transmission so low contact investigation is **not** warranted

See Attachment 1: TB Index Case Assessment Form

Refer to Table 1, page 9 to determine if and when a contact investigation is mandatory, may be delayed or is unnecessary based on these index case characteristics.

Mandatory Contact Investigations
While contact investigations are not mandatory for all index cases residing in New Jersey, an initial interview is **mandatory** for **all** patients reported as having suspected or confirmed pulmonary or laryngeal TB disease to determine if a contact investigation is necessary.

A contact investigation and submission of a TB-41 Record of Contact Interview (see Appendix 1) is mandatory in New Jersey for all patients with one or a combination of the following characteristics:

1. **Suspected or confirmed** TB disease of the larynx, regardless of age.

2. **Suspected or confirmed** pulmonary TB disease as evidenced by a smear positive for AFB from any respiratory source, regardless of age.

3. **Suspected or Confirmed** pulmonary TB disease with cavitary lesions on chest radiograph or CT scan, regardless of age, smear/culture results or symptoms.

4. **Suspected or Confirmed** pulmonary TB disease with an abnormal radiograph consistent with TB and a history of cough or hemoptysis, regardless of age or smear/culture results.

5. **Confirmed** pulmonary TB disease as evidenced by a:
    - Sputum smear negative and culture positive for *M.tb* or *M.tb* complex, regardless of age, chest x-ray findings or symptoms **OR**
    - Smear negative and culture positive for *M.tb* or *M.tb* complex from a respiratory source other than sputum, regardless of age, chest x-ray findings or symptoms **OR**
    - Clinical or x-ray improvement while on anti-TB medications (clinical case definition for TB), despite negative smear and culture results or the lack of bacteriology.

Focus of the Investigation:
Every contact investigation will initially focus on persons sharing the residence of the index case and frequent social associates. Contact investigations will rarely expand beyond these individuals for index cases with the following characteristics:

- Sputum smears negative for AFB and sputum culture positive for *M.tb* or *M.tb* complex, **OR**
- Smear negative and culture positive for *M.tb* or *M.tb* complex from respiratory sources other than sputum, **AND**
- No cavitary lesions on chest radiograph or CT scan, **AND**
- No history of cough and/or hemoptysis.

The investigation may expand beyond persons sharing a residence and frequent social associates to congregate settings for index cases with any of the following characteristics:

- Laryngeal TB, **OR**
- Sputum smear and culture positive pulmonary TB, **OR**
- Smear and culture positive from respiratory sources other than sputum **OR**
- Pulmonary TB with cavitary lesions on chest radiograph or CT scan, **OR**
- Pulmonary TB with an abnormal radiograph consistent with TB and a history of cough and/or hemoptysis.

Required Documentation
The TB-41 (see Appendix 2) must be used to document the findings of a contact investigation and be submitted to the TB Program on the schedule prescribed by the form's instructions (see Appendix 3). If an undiagnosed and untreated pulmonary or laryngeal TB case is identified as a result of another contact investigation, a new contact investigation for the newly identified index case must be initiated. The TB-41 for this new index case, however, must not list either the original index case or any contacts in common with those listed on the TB-41 for the original index case. The contacts listed

on the TB-41 for the new index case must be limited to **only** contacts identified as unique to the new index case and contact investigation. If contacts were identified, but were not listed because they were evaluated as a result of another contact investigation, this fact should be indicated on the TB-41 before it is submitted to the TB Program.

Unnecessary Contact Investigations

1. All pulmonary TB cases not meeting any of the criteria under mandatory contact investigations (see Table 1, page 9).

2. All extra-pulmonary TB cases ≥ five (5) years of age for which pulmonary and/or laryngeal disease has been ruled out.

TABLE 1

CONTACT OR SOURCE CASE INVESTIGATION BY INDEX CASE CHARACTERISTICS				
Nature of Disease	Radiology Results and Symptoms			
	Cavitation on chest X-ray or CT scan with or without cough	History of an abnormal CXR consistent with TB and cough and/or hemoptysis	NO cavitation on chest X-ray or CT scan	NO history of cough or hemoptysis
Suspected or confirmed laryngeal TB disease	Contact Investigation Mandatory	Contact Investigation Mandatory	Contact Investigation Mandatory	Contact Investigation Mandatory
Smear positive from any respiratory source, including sputum Suspected pulmonary TB	Contact Investigation Mandatory	Contact Investigation Mandatory	Contact Investigation Mandatory	Contact Investigation Mandatory
Positive culture from any respiratory source, including sputum Pulmonary TB	Contact Investigation Mandatory	Contact Investigation Mandatory	Contact Investigation Mandatory	Contact Investigation Mandatory
Smear negative from any respiratory source, including sputum (culture pending) Suspected TB disease	Contact Investigation Mandatory	Contact Investigation Mandatory	Only if Culture Results are Positive	Only if Culture Results are Positive
Clinical TB case or suspect (all cultures negative or bacteriology not done)	Contact Investigation Mandatory	Contact Investigation Mandatory	No Investigation Necessary	No Investigation Necessary
Pulmonary or Extra-pulmonary TB (<5 years old)	Source Case Investigation Mandatory	Source Case Investigation Mandatory	Source Case Investigation Mandatory	Source Case Investigation Mandatory

Extra-pulmonary TB in a person ≥ 5 years old: No investigation necessary

CHAPTER 2: INTERVIEW PROCESS

Insights into Effective Interviewing

The following insights will assist to enhance the effectiveness of any interview of an index case conducted to identify potential contacts:

1. A minimum of two interviews is recommended. This series of interviews is recommended to allow the index case the opportunity to overcome the social stresses associated with the illness (fear of disability, death or social stigma) and allow the health department the opportunity to build rapport with the patient.

2. During the interview process never become so obsessed by the information you are trying to gather to create a perception that the index case's questions and concerns are not equally important. Such a mistake can make the task of building rapport and, therefore, your objectives unachievable.

3. Always express appreciation for the opportunity to speak with the index case, even if he or she has not provided the information you seek. It's always better to interview another day than to damage rapport.

4. The first priority in any effective TB prevention and control program is treatment completion of an individual with active disease. Nothing should be done in the pursuit of contacts or their evaluation that reduces the likelihood that this primary objective is achieved.

Responsibilities of Nurse Case Managers when an Index Case is Hospitalized Outside the Health Jurisdiction of Residence

If a suspected or confirmed TB case is hospitalized outside the jurisdiction of residence or the coverage area of a specific clinic, the nurse case manager or appropriately trained designee in the health jurisdiction where the **hospital** is located is responsible for conducting the pre-interview and initial interview information gathering activities. This nurse case manager is also responsible for relaying the information to the nurse case manager in the index case's health jurisdiction of residence. A patient assessment form or PAF (see Appendix 4), a TB-41, phone calls and/or e-mails will be used to relay information acquired during hospitalization.

The nurse case manger in the health jurisdiction where the hospital is located is responsible for **all** aspects of case management while the index case is hospitalized, including but not limited to;

- Obtain and field check TB-70
- Conducting the pre-interview hospital record review,
- Conducting the initial interview,
- Correcting an inappropriate treatment regimen,
- Delivering the Notification of Precautions Necessary to Protect the Public Health,
- Issuing public health warning notices (as required),

- Notifying the local health officer of the need for health officer orders (as required),
- Monitoring the progress of the patient during the course of hospitalization and
- Ensuring an appropriate discharge plan (in coordination with the nurse care manager in the index case's health jurisdiction of residence).

The nurse case manager in the index case's health jurisdiction of residence is responsible for the execution of field services such as;

- Conducting home visits to verify a stable residence,
- Testing of contacts sharing a residence with the index case,
- Relaying the findings to the nurse case manager in the health jurisdiction in which the hospital is located,
- Securing motel placement or housing assistance through the TB Program for the index case if it is determined that these needs exist, and
- Communicating when these arrangements are made to the nurse case manager in the health jurisdiction where the hospital is located.

These activities are essential to facilitate a timely and appropriate hospital discharge.

The nurse case manager in the index case's health jurisdiction of residence **may** call the index case, attending physicians, hospital case managers and/or the ICP during hospitalization for the purpose of building rapport and gathering, clarifying or verifying information that is essential to promoting the continuity of medical management and treatment in the community.

Objectives of the Interview Process in Contact Investigation

A record review and initial interview is required for all patients reported as having suspected or confirmed laryngeal and/or pulmonary TB disease. This process is necessary to assess the presence or absence of a cough and/or hemoptysis. In the absence of laboratory findings and cavitation on chest radiograph or CT scan, the presence and date of onset of these symptoms are essential to determine:

- The necessity for a contact investigation (see Table 1, page 9) and/or
- The beginning of the infectious period (see Table 2, page 20).

If a contact investigation is required, the interview process identifies potential contacts for evaluation and treatment.

General Interview Process

The interview process consists of two steps. The first is the pre-interview phase (see page 12) which is essential to:

1. Gather information vital to an effective interview,
2. Provide TB education specific to the index case's circumstances, and

3. Address questions or concerns that may be raised by the index case during the interview.

The second is the interview phase which consists of at least two interviews of the index case.

Pre-Interview Phase

This phase allows the gathering of background information regarding the patient and nature of the illness essential to a more effective interview and the determination of the infectious period. Some of this information may also assist in the continuity of care if the patient is lost to medical supervision at a later date. Sources of information include; the current medical record, the managing physician and (if hospitalized) the infection control practitioner. The information sought should include:

- History of previous exposure to TB
- History of previous TB disease and treatment
- Anatomical site of disease
- Symptoms of the illness & date of onset
- Mantoux tuberculin skin test (PPD) or QuantiFERON®TB-Gold (QFT) results
- Chest X-ray/CT scan results
- Results of other diagnostic imaging studies
- Diagnostic specimens sent for histologic or mycobacteriologic analysis (including dates collected, specimen tracking numbers and reference labs utilized)
- Current mycobacteriology laboratory results
- Anti-TB treatment regimen (including date started, medications and dosages)
- HIV test results
- Weight
- Liver function test (LFT) results
- Concurrent medical conditions (e.g., renal failure implies that a renal dialysis center may be a site to identify high risk contacts)
- Barriers to care such as mental illness, substance abuse or dementia that may impact on the interview process or could impact on continuity of care
- Demographic information, such as address of residence, place of employment, first language, street names or aliases, date of birth, telephone numbers of case, next-of-kin and/or others to identify in case of emergency.

A pre-interview chart audit tool has been developed to assist with this element of the interview process (see Appendix 4).

The record review phase of the interview process may be postponed if it will prevent the completion of the initial interview within three (3) working days after the first report of a TB suspect or case. This is most commonly an issue when the patient is not hospitalized and is medically managed by a private physician.

Initial Interview

Information from the initial interview should be collected using and documented on the Patient Assessment Form or PAF (see Appendix 5).

Most TB cases in New Jersey are hospitalized when initially diagnosed; therefore, most initial interviews will take place in a hospital.

The objectives of the first interview are to:

1. Provide education in the context of medical information collected during the record review. Answer any questions and address any concerns raised by the index case.

2. Confirm, clarify or resolve any discrepancies in the demographic information gathered during the record review (such as address of residence, place of employment, first language, street names or aliases, date of birth, telephone numbers of case, next-of-kin, others to identify in case of emergency and/or hang-outs) and collect additional information as needed to promote effective follow-up.

3. Assess for the presence of a cough or hemoptysis and inquire about a history of such symptoms and their onset. Determining when symptoms began will assist in assigning a beginning date for the infectious period (see Chapter 3).

4. Determine if the index case will be managed by a private physician (secure name and number if possible) or the public health chest clinic. If the index case will be managed publicly, provide the location of the public health clinic along with names and phone numbers of appropriate staff.

5. Provide information on what can be expected to occur with community-based care, including;

    - Role and responsibilities of the public health department in on-going care and monitoring of individuals with TB disease and identification and evaluation of their contacts,

    - The need for a visit to their residence and testing for LTBI and evaluation of household contacts prior to hospital discharge (if the patient is hospitalized at the time of the initial interview),

    - Infection control measures that will be required to minimize the risk of transmission in the facility (if hospitalized) and the community (if discharged while potentially infectious) see Notification (page 15 & Appendix 6),

    - Importance of adherence with prescribed treatment and scheduled clinical appointments, and

- Utilization of directly observed therapy (DOT) and how it will work.

6. Assess the need for additional support services, including; housing, incentives and/or enablers, transportation to the public health chest clinic and identification of additional potential barriers to care.

7. Determine if the index case is or has been an employee, resident, patient or student in a congregate setting during his or her infectious period (see Chapter 3). Determine when and where.

8. Make it as comfortable as possible for the index case to provide the names and contact/locating information for potential contacts by:

    - Explaining how assessments at potential sites of transmission are conducted and the steps that are taken to protect anonymity and confidentiality.

    - Discussing topics such as where the index case spent nights, met with friends, spent leisure time, worked, ate, visited and sought health care during the infectious period (see Chapter 3).

        - Inquiries should be made regarding time spent in congregate settings during the infectious period.

        - Inquiries should also be made into routine (such as carpools, school buses, etc.) and non-routine (airplane) travel during the infectious period.

9. Based on the information gathered above, tentatively identify sites providing the highest risk for transmission. Most effective interviews will yield far too many potential sites for transmission than available staff time to investigate. **Prioritizing potential sites for transmission is essential to effective contact investigation.**

10. For each potential transmission site identified in #8 above and those determined to be at highest risk for transmission in #9 above, begin the completion of a TB-41 by eliciting the names and contact/locating information of potential contacts that the index case is willing to reveal.

If the index case with potentially infectious TB disease is reported at death, a "proxy" interview of a person or persons familiar with the individual's living arrangements, social circles and work history must be conducted. The purpose of this interview or interviews is to gather the names of potential contacts as outlined in this chapter. Since the index case is deceased, confidentiality is not an issue.

Timetables for the Initial Interview

For the purpose of this timetable, the report received may be a TB-70 report, a verbal report or a laboratory report of a smear positive for AFB or culture positive for *M.tb* or *M.tb* complex from a respiratory source, including the larynx or epiglottis, whichever is received first.

1. Each patient with pulmonary and/or laryngeal TB disease must be interviewed within three (3) working days of the receipt of the first report of their diagnosis, whether TB is suspected or confirmed at the time of this report.

2. An initial interview is typically unnecessary for extra-pulmonary TB cases greater than five (5) years of age for which pulmonary and/or laryngeal disease has been ruled out.

Notification of Precautions Required to Protect the Public Health

N.J.A.C. 8:57-5.7 requires the delivery of a "Notification" (see Appendix 6) to every person with suspected or confirmed potentially infectious TB disease at the time of the initial interview. If the patient is hospitalized outside his or her health jurisdiction of residence, the nurse case manager or designee in the health jurisdiction where the patient is hospitalized shall deliver the "Notification" and conduct the initial interview.

The "Notification" shall list all infection control precautions applicable to the patient and request the patient to observe these precautions until no longer necessary to protect the public health. Upon meeting the criteria below for non-infectiousness, the patient must be advised that precautions in the "Notification" are no longer necessary.

Infection control precautions will no longer be necessary for a patient with **documented sputum smears positive for AFB** when any of the following conditions are met:

1. Three sputum smears collected at least eight (8) hours apart are reported negative for AFB, **OR**

2. A nucleic acid amplification test is reported negative for *M.tuberculosis*, **OR**

3. At least one sputum culture is reported negative for *M.tuberculosis*, **OR**

4. TB is ruled out as a cause of disease by a health care provider.

For patients with:

- No sputum smears collected **OR**

- Sputum smears negative for AFB **AND**

- Cavitation on chest radiograph or CT scan **AND/OR**

- A cough and/or hemoptysis.

Infection control precautions are no longer necessary when either of the following conditions is met:

1. The patient has taken at least two weeks of appropriate treatment **AND** no current respiratory symptoms are observed or reported **OR**

2. TB has been ruled out as a cause of disease by a health care provider.

The nurse case manager or designee must inform the patient served with a "Notification" that the infection control precautions are no longer required within one business day of the time that achievement of the criteria above has been confirmed.

Necessity of a Visit to the Index Case's Residence during the Interview Process
N.J.A.C. 8:57-5.5 "Hospital Discharge" requires the health department to verify the validity, stability and circumstances of housing for hospitalized patients with suspected or confirmed infectious or potentially infectious TB prior to discharge. Meeting the conditions of this regulation requires a home visit for the purpose of:

1. Confirming that the patient lived at the residence prior to hospitalization,

2. Determining the nature of the residence (single family, extended family, residence occupied by multiple families or individuals, congregate living facility, etc.)

3. Confirming that the patient will be allowed to live at the residence post hospital discharge (a diagnosis of TB can often change informal or non-familial living arrangements), **AND**

4. Screening and evaluation of the household contacts for latent TB infection prior to hospital discharge. (Expediting these evaluations will provide valuable information regarding when the patient should be discharged, especially if vulnerable populations are identified in the household.)

Also, for patients hospitalized at the time of the initial interview a home visit prior to discharge will facilitate the achievement of three additional objectives:

1. Verification of the household contacts provided by the patient during the initial interview in the hospital,

2. Identification of additional household and/or social contacts, not identified by the patient in the initial interview, and

3. Exposure assessment (see Chapter 4) of potential contacts by direct observation and interview.

If the patient is not hospitalized at the time of the initial interview, the residence of the patient is the recommended location for the initial patient interview. It will assist in the identification of household contacts and assessment of individual risk for acquisition of LTBI by direct observation.

Second Interview

The second interview shall be completed **within 15 working days of the initial interview or within 5 working days of hospital discharge** if hospitalization is prolonged beyond 15 days past the initial interview.

The second interview is generally conducted in the public health chest clinic, if managed by the health department or the patient's home if privately managed **or** if no visit to the index case's residence has previously been made.

The objectives of the second interview are to:

1. Continue building trust and rapport,
2. Provide additional TB education as needed,
3. Ensure a visit to the index case's residence if none has been conducted previously,
4. Clarify any information provided by the index case during the initial interview that appears contradictory to the findings of the on-going contact investigation **and/or** any issues with location of potential contacts identified by the index case in the initial interview,
5. Address any elements of the initial interview that the index case was unwilling or unable to discuss when initially interviewed (see Initial Interview, beginning on page 12),
6. Elicit the names and contact/locating information for any additional potential contacts and document on TB-41, **AND**
7. Address any additional questions from the patient.

CHAPTER 3: INFECTIOUS PERIOD

Determining the appropriate infectious period is essential to the identification of all contacts to a suspected or confirmed infectious or potentially infectious index TB case.

Beginning of the Infectious Period

The infectious period of the index case begins three (3) months prior to the first abnormal chest radiograph consistent with TB **or** onset of cough and/or hemoptysis, whichever is earlier for:

1. An index case with confirmed or suspected laryngeal TB, **OR**

2. An index case with a smear positive for AFB from any respiratory source including sputum, **OR**

3. An index case with
   - A culture positive for *M.tb* or *M.tb* complex from any respiratory source including sputum, **AND**
   - A cavitary lesion on chest radiograph or CT scan, **AND/OR**
   - A history of cough and/or hemoptysis.

The infectious period of the index case begins one (1) month prior to the collection date of the first specimen identified as *M.tb* or *M.tb* complex for:

A pulmonary index case with:
- A culture positive for *M.tb* or *M.tb* complex from any respiratory source, including sputum, **AND**
- No smear positive for AFB from a respiratory source, including sputum **AND**
- No history of productive cough or hemoptysis **AND**
- No cavitary lesions on chest radiograph or CT scan

The infectious period of the index case begins one (1) month prior to the first abnormal chest radiograph consistent with TB **or** onset of cough and/or hemoptysis, whichever is earlier for:

A clinically confirmed TB case with:
- A history of cough and/or hemoptysis, **AND/OR**
- A cavitary lesion on chest radiograph or CT scan **AND**
- No history of a smear or culture positive for AFB from a respiratory source including sputum.

It is essential to identify the actual onset date of cough (if it occurred) during the interview of the index case (see Chapter 2). **This effort will allow assignment of the most accurate date for the beginning of the infectious period.**

Table 2 on page 20 provides a guide to determine the beginning of the infectious period for laryngeal and pulmonary TB cases with varying characteristics.

Regardless the beginning of the infectious period, no contact investigation should include testing of individuals who have not been exposed within the six months immediately prior to the diagnosis of the index case.

End of the Infectious Period
For most laryngeal and pulmonary index cases, the infectious period ends when the following criteria are met:

- Effective treatment for ≥ 2 weeks, **AND**
- Significantly diminished cough (if initially symptomatic), **OR**
- Three sputum smears negative for AFB collected ≥ 8 hours apart (if initial smear from sputum or another respiratory source was positive for AFB).

Exposure Period
For all potential contacts, the exposure period:

- **Begins** whenever an individual is exposed to an index case during the infectious period, **AND**
- **Ends** whenever exposure to the index case is broken and not resumed during the infectious period. If exposure is resumed, then the exposure period is resumed.

TABLE 2

DETERMINING THE BEGINNING OF THE INFECTIOUS PERIOD BY INDEX CASE CHARACTERISTICS					
Characteristic					Minimum Beginning Date for Infectious Period
AFB* Smear Positive Sputum or Other Respiratory Source	Culture (+) for *M.tb*, Sputum or Other Respiratory Source	Cavitation on CXR or CT scan, with or without cough	Non-cavitary CXR consistent with TB and Cough and/or Hemoptysis	Clinical TB Case, No Cavitation, Respiratory Symptoms or positive bacteriology	
Yes					3 months before symptom onset or first positive finding** consistent with TB, whichever is earlier†
No	Yes	Yes	Yes	No	3 months before symptom onset or first positive finding** consistent with TB, whichever is earlier†
No	Yes	Yes	No	No	3 months before first positive finding** consistent with TB
No	Yes	No	No	No	1 month before the collection date of the first specimen identified as *M.tb* or *M.tb* complex
No	No	Yes	Yes	Yes	1 month before symptom onset or first positive finding** consistent with TB, whichever is earlier
No	No	Yes	No	Yes	1 month before first positive finding** consistent with TB
No	No	No	Yes	Yes	1 month before symptom onset
No	No	No	No	Yes	No infectious period, no contact investigation required

* Acid fast bacilli
** Abnormal chest x-ray
† Applies to laryngeal TB as well

CHAPTER 4: EXPOSURE ASSESSMENT

As discussed in Chapter 1, every index case with suspected or confirmed pulmonary TB disease is **NOT** equally infectious. Information including the following must be collected and evaluated to assess the potential infectiousness (high or low) of each index case using the TB Index Case Assessment Form (see Appendix 1);

- AFB smear results,
- Final culture results,
- Findings of chest radiographs and/or CT scans, and
- History of cough and/or hemoptysis

As with each index case, an assessment of individuals exposed to potentially infectious TB disease is necessary to appropriately classify someone as a contact and determine his or her risk for acquisition of LTBI. This assessment is completed during the interview(s) with the index case. Information is collected from the index case regarding those exposed, whether individuals or groups with a common exposure. This information is then used to determine which exposed individuals should be classified as contacts and their risk for acquisition of LTBI (high or low).

Three important points must be made at this time.

1. Typically, every person exposed to a potentially infectious index case should NOT be classified as a contact.

2. Every person classified as a contact is NOT at equal risk for acquisition of LTBI.

3. An effective contact investigation does NOT necessarily test every identified contact for the presence of LTBI. This is especially true in congregate settings.

Three important characteristics of each exposure must be assessed to determine if an individual exposed to potentially infectious TB disease is a contact. This assessment will also assist in assigning a risk for acquisition of LTBI (high or low) to each individual contact OR group of contacts with similar exposure characteristics. The risk assigned will determine which contacts are priorities for testing. The findings of the testing of high risk contacts will determine if testing of low risk contacts is necessary. The three characteristics of every exposure that are essential to determining the risk of the exposure and the quality of the exposure assessment are:

1. Duration of exposure (time),

2. Proximity of exposure (distance), and

3. Environment in which the exposure occurred (ventilation or crowding).

These three characteristics of each exposure are interdependent. A person with a short duration of exposure in a small poorly ventilated or crowded space may be at **equal or even greater** risk for transmission compared to an individual with a prolonged duration of exposure in a larger better ventilated or less crowded space. Assessment of individual risk for acquisition of LTBI can get complicated, especially in a congregate setting.

To complicate the exposure assessment process further is the impact of the assessment of the potential infectiousness of the index case. There is an inverse relationship between the risk the index case poses for transmission of TB and the criteria that represent an exposure significant enough to classify an individual as a contact. For example, if the index case poses a high risk for transmission, the duration of exposure may be less, the proximity of exposure more remote and the environment better ventilated or less crowded and yet a threat for acquisition of LTBI persists. Conversely, if the index case poses a low risk for transmission, the duration of exposure must be longer, the proximity of exposure much closer and the environment more poorly ventilated or more densely crowded in order to present a significant risk for acquisition of LTBI to exposed individuals. As a result, contact investigations surrounding an index case that poses a high risk for transmission of LTBI will generally result in a higher number of contacts than an index case posing a low risk for transmission.

Any person who shares a non-congregate residence with a potentially infectious index case must be classified as a contact, if a contact investigation is warranted (see Table 1, page 9 to determine if a contact investigation is warranted). **These individuals are also assigned a designation as high risk for acquisition for LTBI without further assessment of their exposure, regardless the risk for transmission (high or low) posed by the index case.**

For **all** other individuals exposed to a potentially infectious index case, an exposure assessment is necessary to determine if the designation of contact is appropriate and if so, their appropriate assignment of risk.

Steps in an Exposure Assessment of Persons Exposed to Potentially Infectious TB
This process consists of three distinct steps as follows:

STEP 1: Determine the Infectiousness of the Index Case
This is discussed in Chapter 1 and the assessment tool is Appendix 1 of this document.

STEP 2: Determine which of the Persons Exposed to the Index Case should be Classified as Contacts
The quality of this assessment is important for two reasons:

1. **The increased likelihood of a misdiagnosis of LTBI**

With a classification of contact, the criterion for a diagnosis of LTBI is a ≥ 5mm induration in response to a Mantoux tuberculin skin test. If an individual is exposed insufficiently to warrant the classification of contact, but is incorrectly classified, then the potential for a false positive reaction and misdiagnosis increases. The use of a

QuantiFERON®TB-Gold blood assay for the presence of LTBI decreases this risk, but this test, like the Mantoux tuberculin skin test is not recommended for use in persons with low risk for LTBI.

2. Potential for unnecessary treatment with hepatotoxic medication

The risk for adverse reactions and liver toxicity due to treatment for LTBI is enhanced in older individuals. For contacts, however, the benefit of treatment is generally perceived by physicians to outweigh the risk of these adverse reactions. Contacts are suspected to have recently acquired LTBI and up to 50 percent of all TB cases develop active disease within two years after initial infection.

Inappropriately classifying an individual exposed to a potentially infectious index case as a contact may have serious negative consequences. Thorough assessment of exposed individuals and determination of who among them are actually contacts will minimize misdiagnosis and allow a valid risk to benefit analysis when considering the prescription of treatment for LTBI.

Exposure Assessment Worksheet

NJDHSS has developed an Exposure Assessment Worksheet (see Appendix 7) to assist in determining if an exposed individual is a contact based on the risk for transmission by the index case **and** specific characteristics of the exposure. The Worksheet is mandatory for use in congregate settings, but may be used to assess the exposure of all contacts who do not share a residence with the index case.

In order for the Worksheet to perform its function appropriately, it is imperative that the facts surrounding the duration and proximity of the exposure and the environment in which it occurred be accurately known.

1. **The most common source of such information is the interview of the index case,** but other strategies are also important**.**

2. Site assessments in congregate settings can yield information essential to both the identification of contacts and appropriate risk category to assign to each contact.

3. Visits to the index case's residence can be valuable in the identification of individuals sharing the residence or entering the home to socialize that may not have been disclosed during the interview of the index case.

4. Interviewing skills, rapport building and personal observation are essential to determine the identity and assess the risk of contacts. All these strategies are essential to effective contact investigation.

The Worksheet assigns a numerical value based on each characteristic of the exposure to each individual OR group of individuals with a common exposure for the purpose of assessing that individual's OR group's risk for acquisition of LTBI compared to others that were exposed. Increasing numerical values are assigned to each exposure

characteristic consistent with increasing risk for acquisition of LTBI. These values are then added together to assign a numerical total to each individual OR group exposed to a potentially infectious index case. If the total for any individual or group of individuals exceeds a pre-determined minimum threshold **that** individual or group of individuals is appropriately classified as a contact.

The Worksheet should be used to document what the individual conducting the contact investigation perceives to be the **riskiest exposure** of each individual contact or group of contacts with a common exposure during the index case's infectious period. The assessment should always begin with an exposure of long duration **and/or** within close proximity **and/or** occurring in a poorly ventilated **and/or** crowded environment. All these variables represent increased risk for acquisition of LTBI. Not all these variables must be present for an exposed individual to be appropriately classified as a contact or for a contact to be at high risk for acquisition of LTBI, but the more of these factors that are present, the more likely the exposed individual will be a true contact at high risk for acquisition of LTBI.

It is **essential** to use the Exposure Assessment Worksheet (see Appendix 7) **in combination with** the findings of the TB Index Case Assessment Form (see Appendix 1) to appropriately classify contacts and assign their risk for acquisition of LTBI due to the exposure.

Guidelines to assist with the accurate completion of the Exposure Assessment Worksheet are provided in Appendix 8 of this document.

CAVEAT: This worksheet is intended to provide public health officials with a systematic and standardized method by which to distinguish between high and low risk contacts in a congregate setting. It is **not** intended to limit the availability of testing for LTBI to any additional individuals that a public health official with experience in contact investigations in congregate settings may deem at high risk for infection due to the exposure.

The following is a brief summation of the Exposure Assessment Worksheet

Characteristics of the Exposure

Duration of Exposure	**Value**
Average exposure ≥ 40 hours/week during the infectious period	10
Average exposure ≥ 20, but <40 hours/week during the infectious period	8
Average exposure ≥ 5, but <20 hours/week during the infectious period	5
Average exposure ≥ 1, but <5 hours/week during the infectious period	2
Average exposure < 1 hour/week during the infectious period	0

Proximity of Exposure	**Value**
0-25 square feet	10
26-99 square feet	8
100-249 square feet	7
250-599 square feet	5
600-999 square feet	4
1,000-1,500 square feet	2
Larger than 1,500 square feet	0

Environment of the Exposure	**Value**
Ventilation poor or crowded environment	10
Ventilation moderate	5
Ventilation good	1
Outdoor exposure only	0

A total exposure score is then calculated by adding the numeric values assigned to all 3 characteristics of the exposure.

Anyone exposed is appropriately classified as a "contact" if:
Exposed to an index case at **high** risk for transmission with a total exposure score ≥ **12**
Exposed to an index case at **low** risk for transmission with a total exposure score ≥ **25**

STEP 3: Initial Assignment of High or Low Risk Designation to Contacts Identified in Step 2

The third step in the exposure assessment process is to assign a risk category to each contact based on the unique characteristics of their exposure **compared** to other contacts to the index case. These risk categories will be high or low based on the risk for acquisition of LTBI due to the exposure.

Just as not all individuals exposed to a potentially infectious index case are classified as contacts, not all contacts exposed to a potentially infectious index case are at equal risk for acquiring LTBI.

The total exposure score yielded by completion of the Exposure Assessment Worksheet (see Appendix 7) is used to **BOTH** determine if an individual exposed to a potentially

infectious index case should be classified as a contact **AND** to assign a risk for acquisition of LTBI (high or low) due to the specific characteristics of the exposure. The assigned risk will determine the priority for testing of identified contacts to a common potentially infectious index case.

Cut points for assigning risk for acquisition of LTBI based on exposure are as follows:

1. **For contacts with exposure to an index case with high risk for transmission:**
   High risk for acquisition of LTBI = Total exposure score of 15 to 30 **OR**
   Total exposure score of ≥ 12 and <16 years of age
   Low risk for acquisition of LTBI = Total exposure score of 12 to 14

2. **For contacts with exposure to an index case with low risk for transmission:**
   High risk for acquisition of LTBI = Total exposure score of 27 to 30 **OR**
   Total exposure score of ≥ 25 and <5 years of age
   Low risk for acquisition of LTBI = Total exposure score of 25 or 26

Assigning Priority for Testing and Evaluation of Contacts

The final step in the assessment process is assigning a priority for the testing and evaluation of contacts, based on the risk assigned to each of them in Step 3. The assignment of priority is as follows for contacts to a common index case;

1. Contacts sharing a residence with the index case
2. Contacts at high risk for acquisition of LTBI
3. Contacts at low risk for acquisition of LTBI

Prioritization becomes more complicated and necessary when managing multiple contact investigations concurrently. The priority of contact testing and evaluation in such a situation is as follows:

1. All persons sharing a non-congregate household with the index case, regardless the infectiousness of the index case (high or low). These individuals are designated as contacts and considered at high risk for acquisition of LTBI because they share a household with the index case and should be tested and evaluated as soon as possible after identification.
2. High risk contacts to an index case at high risk for transmission living outside the residence of the index case.
3. High risk contacts to an index case at low risk for transmission living outside the residence of the index case.

4. Low risk contacts to an index case at high risk for transmission.

5. Low risk contacts to an index case at low risk for transmission.

Contacts designated at low risk for acquisition of LTBI should not be tested until and unless the results of testing contacts at higher risk are known and indicate that expanded testing to low risk contacts is warranted (see page 26).

CHAPTER 5: CONGREGATE SITE ASSESSMENT

Definition

Congregate sites for the purpose of this document are defined as an environment where a number of people meet or gather and share the same space for either a limited or extended period of time. Congregate sites include, but are not limited to; a residential living or treatment facility, nursing home, hospice, jail, prison, shelter, workplace, childcare center or school.

Consideration of the Index Case

Congregate site assessments can be valuable in identifying additional potential contacts at risk for acquiring latent TB infection (LTBI) due to exposure to the index case. Such assessments, however, commonly elicit fear in the index case. The fear of stigma (in a social, school or residential congregate setting) or loss of employment (in the workplace) can be real and should not be disregarded in the decision to perform congregate site assessments.

TB Cases that May Warrant a Congregate Site Assessment

Congregate site assessments should not be routine even for the TB cases listed below. These assessments should **ONLY be performed** if one or more of the conditions justifying a congregate site assessment (pages 29 and 30) are met. Many of these conditions require the evaluation of household and social contacts (if identified) be completed before the need for a congregate site assessment can be determined. Congregate site assessments should **ONLY be considered** surrounding persons with suspected or confirmed potentially infectious TB in a congregate setting at any time during their infectious period with a single or combination of the following characteristics:

1. Laryngeal TB,
2. Sputum smear positive pulmonary TB,
3. Cavities on chest radiograph or CT scan,
4. History of cough or hemoptysis, **OR**
5. Pulmonary or extra-pulmonary TB in children aged less than 5 years for the purpose of source case identification (see Chapter 8).

In #5 above, adults are the group generally targeted for testing. Children in this age group generally pose no risk of transmission to their contacts unless the child manifests characteristics of TB disease present in adults (see page 29). If any of these characteristics exist, testing of children in the congregate setting is warranted. Of course, if an adult source case is identified through this investigation, testing of the other children is warranted as contacts to this source case.

Congregate Settings where Site Assessments are Immediately Justified

In these cases, notification (see page 31) should occur as soon as any of the circumstances below are determined to be true:

1. **Child care or school settings** serving infants and/or children <5 years of age whenever the index case with potentially infectious TB;
    a. Is an adult,
    b. Is a child or adolescent with adult-like disease characteristics as evidenced by one or more of the following:
        1. Sputum smears positive for AFB,
        2. Sputum cultures positive for *M.tb* or *M.tb* complex,
        3. Nucleic acid amplification test positive for *M.tb* from sputum,
        4. Cavitary chest x-ray
        5. History of cough or hemoptysis

    A congregate site assessment must occur regardless the risk for transmission of the index case.

2. **Schools**, elementary and secondary, whenever the index case is at high risk for transmission.

3. **Local jails** whenever the index case is a current or former inmate or employee who was incarcerated or employed at any time during his or her infectious period and is deemed to be at high risk for transmission.

4. **Congregate living facilities** whenever the index case is or was a resident at any time during his or her infectious period, regardless of risk for transmission.

5. **Congregate living facilities** whenever the index case is or was an employee or volunteer during his or her infectious period **AND** the facility serves a vulnerable resident population (see definition of vulnerable population, page 3), regardless the risk for transmission.

Additional Justifications for a Congregate Site Assessment

Congregate site assessments are also justified when at least one of the following criteria is met during the testing and evaluation of household and social contacts:

1. Additional suspected or confirmed TB cases are identified among household or social contacts, regardless the risk for transmission of the index case.

2. The rate of infection among household and social contacts is above 10 percent for U.S. born contacts or 35 percent for foreign-born contacts, regardless the risk for transmission of the index case.

3. LTBI in any U.S. born child sharing a residence with a foreign-born index case so long as this child has no history of previous exposure to a person with TB or travel outside the U.S., regardless the risk for transmission of the index case.

4. No contacts are identified outside the congregate setting, regardless the risk for transmission of the index case.

5. A child aged less than 5 years with suspected or confirmed pulmonary or extra-pulmonary TB disease with no potential source case identified in the household or immediate family who is cared for by a licensed or unlicensed daycare center.

Indications for Expanded Testing to Low Risk Contacts

Testing should be expanded to low risk contacts if there is evidence of transmission in high risk contacts as evidenced by:

1. Conversion from negative to positive of a Mantoux tuberculin skin test or QuantiFERON®TB-Gold blood assay for identification of LTBI is documented among high risk contacts **OR**

2. Previously undiagnosed suspected or confirmed active TB disease is identified among high risk contacts **OR**

3. LTBI among high risk contacts who are U.S. born children ≤ 5 years of age with no history of travel to countries where TB is indigenous and no family history of TB

See Appendix 9 for an algorithm of the Exposure Assessment Process.

Objectives of a Congregate Site Assessment

The objectives of a congregate site assessment are to:

1. Meet with appropriate authorities to identify potential contacts in the congregate setting.

2. Provide education to authorities and potential contacts in the congregate setting,

3. Minimize anxiety due to exposure in the congregate setting,

4. Assess contact status and individual risk for those individuals exposed in the congregate setting (see Chapter 4), and

5. Build credibility and maintain control over the evaluation process by identifying and evaluating only those individuals determined to be contacts at high risk and proceeding to low risk contacts **ONLY** if the results indicate the necessity to do so (see Chapter 4).

The decision to conduct a congregate site assessment is not a decision to test for LTBI in that setting. A decision regarding who, if anyone requires testing for LTBI in the congregate setting is made based on the findings of the Exposure Assessment Worksheet (see Appendix 6). Assistance in performing congregate site assessments and making decisions regarding who to test for LTBI based on these assessments is available through the NJDHSS TB Program at (609) 588-7522.

Confidentiality in the Congregate Setting

In most congregate setting situations, it is difficult to differentiate between those with high and low risk for acquisition of LTBI without the disclosure of the identity of the index case. Authorities within the congregate setting cannot assist in the identification of individuals with whom the index case shared time or space without knowing his or her identity. When these authorities are aware of the identity of the index case through other means, there is no breach of confidentiality.

The dilemma arises when authorities are unaware of the diagnosis of TB in the congregate setting prior to a visit to conduct a site assessment. If the need to expand the contact investigation to a congregate setting has been determined (see justifications for a congregate site assessment, pages 29 and 30), only two alternatives exist;

1. To test everyone for latent TB infection to maintain confidentiality **OR**

2. To disclose the identity of the index case to allow an individual exposure assessment for potential contacts.

In such a situation, it will be necessary to disclose the name of the index case **ONLY** to those authorities assisting with the site assessment.

The index case must be made aware of the potential need to disclose their identity before doing so. This should be done prior to any visit to the congregate site.

In addition, the person or persons to whom you make the identity of the index case known must be informed of their obligation to keep this information confidential from other persons in the congregate setting and from any inquiries by the media.

The process for congregate setting assessment includes four steps as follows:

STEP 1: NOTIFICATION

Notification should occur **ONLY after** the need for a congregate site assessment has been established (see justifications for a congregate site assessment, pages 29 and 30).

Under NO circumstances should the identity of the index case be revealed to authorities at a congregate setting during the notification process.

Methods for Notification of the Congregate Setting

1. The initial notification is generally delivered by phone call.

2. Notification should **ONLY** be delivered to management at the congregate site, **NOT** to a receptionist or secretary.

3. **NO** mention of the specific disease **OR** the identity of the index case should be disclosed over the phone when a congregate site assessment is required.

4. Indicate that individuals at the congregate site have potentially been exposed to a condition of public health significance **AND** the health department needs to meet with management to discuss the situation and assess the risk to individuals in the congregate setting.

Requirements for Notification of Authorities in the Congregate Setting
Notification does not necessarily indicate that ANY contacts will be identified among those individuals exposed to the index case in the congregate setting. The identification of contacts is based on the results of an exposure assessment for each exposed individual or groups with common exposure characteristics (see Chapter 4). Communication with authorities at congregate sites as soon as it is determined that a congregate site assessment is justified is essential to maintain control of the evaluation process, minimize anxiety and build credibility.

Requirements for Notification of the Local Health Officer
With the exception of state correctional facilities, when a congregate site assessment is deemed necessary the health officer or designee in the jurisdiction where the congregate setting is located must be informed of the situation and of the need to notify authorities at the congregate setting before such notification is made.

Requirements for Notification of the NJDHSS TB Program
The NJDHSS TB Program must be notified if a suspected or confirmed infectious or potentially infectious index case identifies a congregate setting as a potential site of transmission during his or her infectious period.

1. The TB Program must be notified by the local health department or regional specialty chest clinic by telephone at the time it is decided to meet with authorities at the congregate setting.

2. Written notification on a Public Health Incident Report form (see Appendix 10) must be submitted when the anticipated number of identified contacts to be tested and the date(s) that the testing will occur are known and can be reported.

Surveillance staff at the TB Program will assist with the completion of the Public Health Incident Report whenever submission is required.

3. The TB Program must be updated with the aggregate results of any testing and medical evaluation of identified contacts in any congregate setting.

This information will be used to make the State Epidemiologist and other NJDHSS officials aware of the potential for media inquiries inherent in any contact investigation in a congregate setting.

Employees or Inmates of State Correctional Facilities or Local Jails

State correctional facilities test their employees and inmates annually for LTBI, but TB disease may develop in a state correctional employee or inmate who previously tested positive for LTBI and is no longer subject to annual testing. The Department of Corrections will work directly with the NJDHSS TB Program if an inmate is identified with suspected or confirmed infectious or potentially infectious TB. If, however, a local TB nurse case manager determines that such a case is an employee of a state correctional facility, be certain to determine the state correctional facility where the index case is currently employed and notify the NJDHSS TB Program at (609) 588-7522. The TB Program will notify and consult with the Department of Corrections to facilitate appropriate follow-up in the facility.

STEP 2: PLANNING

Value of Planning

Planning provides the following benefits for the local health jurisdiction:

1. Builds credibility through the disclosure of an employee, resident, student, inmate or other person with suspected or confirmed potentially infectious TB disease,

2. Provides an opportunity to initially educate officials at the congregate site to reduce anxiety over the exposure,

3. Reduces anxiety which will assist in maintaining control over the identification of contacts and the strategy for testing for LTBI, **AND**

4. Provides an opportunity to schedule a meeting to perform a site assessment and collaboratively develop an effective action plan.

Discovery & Planning Meeting

A meeting with authorities at the congregate setting should be scheduled as soon as it is determined that a congregate site assessment is needed. The meeting should occur in conjunction with an assessment of the congregate setting in which the exposure occurred. The meeting should be scheduled at the time of notification (see page 31 above).

The meeting should begin with education and addressing the concerns of on-site authorities regarding the exposure, followed by a congregate site assessment and identification of contacts for testing (see Chapter 4). If it is determined that testing is not warranted, explain the justification for this decision to authorities at the congregate setting.

If testing of specific individuals in the congregate setting is deemed necessary, these individuals should be identified to authorities at the congregate setting. The meeting should be used as an opportunity to develop an action plan for contact testing and evaluation in collaboration with authorities in the congregate setting (see page 34 for essential elements of the action plan).

Guidance for an Effective Congregate Site Assessment

Site assessment skills include the ability to differentiate risk categories (high or low) among individuals in the congregate setting based on:

- Potential infectiousness of the index case (see Chapter 1),
- Duration of exposure (see Chapter 4),
- Proximity of exposure (see Chapter 4), **AND**
- Environment in which the exposure occurred (see Chapter 4).

To perform an effective site assessment generally requires both observation of the physical space in which the exposure occurred and information provided by authorities as to which employees, residents, inmates, students or others occupied the same space or most commonly interacted spatially with the index case.

Transportation, such as buses, vans and/or carpools can present significant risks for transmission and must also be considered in a congregate site assessment. Break rooms, lunch rooms and other settings within the congregate setting presenting a potential for interaction and shared space must also be considered. While the potential duration of exposure is less in these locations, the proximity of exposure may be more significant, increasing the likelihood of transmission.

The index case's membership in social cliques, workgroups or committees inside the congregate setting may also translate into increased risk for transmission and must be explored. The requirement to maintain confidentiality will often limit your ability to accurately assess such variables. The knowledge gained will be limited to what authorities in the congregate setting are aware of as these authorities are the only individuals who know the identity of the index case.

Sometimes the findings of a site assessment can create additional questions for the index case upon re-interview. For example, if it is ascertained through the site assessment that the lunchroom is small and poorly ventilated, an inquiry about companions with whom the index case often shares lunch in this space would be appropriate. The same may be true of carpools and social cliques inside the congregate setting.

Once the information is gathered from the site assessment and re-interview of the index case (if necessary), the Exposure Assessment Worksheet (see Appendix 7) **must** be used to determine which of the individuals exposed to the index case in the congregate setting are contacts and to assign each contact or group of contacts with a common exposure a risk (high or low) for acquisition of LTBI.

Elements of an Effective Collaborative Action Plan

The action plan should be tailored to the particular congregate setting where the exposure occurred and include the following:

1. Date(s) and time(s) of testing for latent TB infection.
   Make certain that the date(s) and time(s) chosen for testing are convenient to the "contacts" being tested and allow for sufficient time to inform them of the availability of testing.

2. Who will perform the testing (i.e., local or county health department personnel, regional specialty chest clinic personnel or licensed professionals at the congregate setting).
   - Ensure that whoever is performing testing is proficient.
   - Make certain the plan allows for the reading of the test or transportation of the blood sample within prescribed timelines (see Chapter 6).
   - Stress the necessity of documenting the result of the test for LTBI appropriately (see Chapter 6).

3. Assign responsibility for informing those who have been identified as high risk contacts and required to be tested of the date, time and location of testing. In the case of minor students in a school situation, a parental consent form (see Appendix 11) must accompany each Testing Letter (see Appendix 12 and Appendix 13).

4. Assign responsibility for informing those who are not contacts **or** have been identified as low risk contacts and will not be tested (at least initially) through the distribution of a General Information Letter (see Appendix 14).

5. It is preferred that these letters be sent out under the letterhead of the congregate setting where the contact investigation is being performed. If this is not acceptable to authorities in the congregate setting, the letters should be distributed under the letterhead of the local health jurisdiction in which the congregate setting is located. The third and last option is for distribution under the Department of Health and Senior Services letterhead through the TB Program.

6. Identify the place and time of medical evaluation for contacts, including chest x-rays and treatment for LTBI, if appropriate.
   - While **not** recommended, if it is decided that testing and/or evaluations will be done for the "worried well," a discussion **must** be held to determine who will pay for these tests and evaluations.
   - Health services grant funding awarded through NJDHSS **may not** be used to pay for testing or diagnostic procedures for the "worried well."

7. Establish the dates for the second test (at the end of the "window" period, see Chapter 6), when circumstances indicate it is required to rule out recently acquired LTBI.

8. Establish the dates and times for educational sessions (see Step 3: Education).

9. Assign responsibility for informing "contacts" or other interested parties (i.e., parents of minor students in a school related exposure) of the date and time of the educational session.

10. Infection control precautions are appropriate in health care, most residential and correctional congregate settings. If the exposure was the result of inadequate infection control precautions in the congregate setting, corrective action should be included in the action plan. This will decrease the likelihood of a similar situation occurring in the future. Authorities in the congregate setting may never be more receptive to changing operational protocols than during a congregate site assessment due to exposure to a potentially infectious TB case.

STEP 3: EDUCATION

Education is Essential

Congregate site assessments can cause anxiety for persons in a position of authority in these settings when they are notified that others have been exposed to a person with suspected or confirmed potentially infectious TB. While it is imperative to disclose this fact during a congregate site assessment, the resulting anxiety can be minimized with effective education. **Education regarding the transmission of TB and the contact investigation process must be provided during any congregate site assessment and is an integral part of every contact investigation that is expanded to a congregate setting.** Education is essential not only for those in authority in the congregate setting, but for all interested individuals in the exposure environment. If the setting is a school, education of teachers, parents or legal guardians is generally imperative to minimize anxiety and prevent over-reaction.

Educational sessions should be held at times convenient to the targeted populations. In certain circumstances multiple sessions may be required (i.e., shift workers) or outside normal business hours (i.e., parents of school students or children in day care).

Each educational session should be convened and chaired by authorities from the congregate setting and include a licensed professional knowledgeable in TB from the local health jurisdiction or regional TB clinic. The health officer from the local health jurisdiction should be aware of the educational session and consider attendance as well. The NJDHSS TB Program will send a representative upon request of the local health jurisdiction or regional TB clinic so long as they are accompanied by a knowledgeable licensed professional as indicated above. Educational sessions should be conducted using the powerpoint presentation developed by the Global TB Institute and NJDHSS TB Program and posted on the website at www.state.nj.us/health/cd/tbhome.htm.

Education provided during contact investigations should include at least all the following:

1. Difference between potentially infectious and non-infectious TB disease and LTBI,

2. Explanation of how TB is transmitted,

3. Factors that increase the likelihood of transmission (see Chapter 4),

4. The assignment of individual risk (see Chapter 4) to exposed individuals to determine those who will be tested first, and

5. The evaluation process (see Chapter 6) and how the outcome of the testing of those contacts at greatest risk will determine the necessity to evaluate those at lower risk.

Make certain it is understood that anyone who is targeted for testing as a contact in New Jersey must be fully evaluated or they are eligible for legal intervention by regulation. Failure to submit to a complete evaluation may result in a court order for evaluation (N.J.A.C. 8:57-5.10) at the discretion of public health authorities.

Assistance in providing education to interested parties in congregate settings is available through the NJDHSS TB Program at (609) 588-7522.

STEP 4: EVALUATION AND REVISION OF THE ACTION PLAN
There are two reasons why a revision of the initial action plan may be required.

1. The primary reason for a revision to the initial action plan is the need to expand testing to low risk contacts based on the findings of the testing and evaluation of high risk contacts in the congregate setting (see page 26 for indications to expand testing to low risk contacts). The possibility for the need to expand testing should be addressed during development of the initial action plan.

2. If the action plan included corrective measures to strengthen infection control precautions, progress should be monitored to ensure implementation. If implementation issues arise, a revision of the initial action plan may be necessary.

STEP 5: APPRECIATION LETTER
After the completion of each congregate site assessment and/or contact testing at a congregate site, a letter of appreciation should be sent to the officials at the site who assisted the health department in fulfilling its responsibility for timely and thorough contact investigation. A template for this appreciation letter is Appendix 15.

Cross Jurisdictional Contact Investigations Involving Congregate Settings

Many suspected or confirmed potentially infectious TB cases are diagnosed in a different jurisdiction than the jurisdiction in which they reside, work or attend school. Such an incidence necessitates a cross jurisdictional contact investigation. These investigations may be within a single state, but in a separate health jurisdiction (intra-state) or across state lines (interstate). Both situations will be addressed below.

Intra-State Contact Investigation Involving a Congregate Setting

If the TB case or suspect is reported in one New Jersey health jurisdiction, but resides, works or is being educated in another New Jersey health jurisdiction, the contact investigation in the congregate setting is the responsibility of the TB nurse case manager in the jurisdiction where the congregate setting is located. **All communication between the congregate setting and the public health department must be from the TB nurse case manager in the health jurisdiction where the congregate setting is located.** The responsibilities of the TB nurse case manager in the health jurisdiction where the TB case or suspect is diagnosed and reported are to:

1. Forward the TB-70 to TB nurse case manager in the jurisdiction where the congregate setting is located,

2. Provide name, address, phone number and nature of the congregate setting (i.e., nursing home, worksite, school),

3. Conduct the initial interview of the index case, and

4. Provide a separate TB-41 complete with the names or partial names and any known addresses and/or phone numbers for any potential contacts at the congregate setting identified during the interview of the index case.

When the contacts are identified and evaluated, the TB-41 for the congregate setting should be returned to the nurse case manager in the jurisdiction where the index case resides. This nurse case manager is responsible for the timely submission of all TB-41s associated with the index case, regardless of where the contact identification and evaluations take place.

Interstate Contact Investigation Involving a Congregate Setting

In this instance, information regarding TB exposure at a congregate site outside New Jersey during the infectious period should be provided by the TB nurse case manager to the NJDHSS TB Program at (609) 588-7522. The information should include at least:

1. Name and address of the congregate setting,

2. Phone number of the congregate setting (if known by the index case), and

3. A separate TB-41 with the name(s) of any potential contacts in the out-of-state congregate setting identified by the index case.

The NJDHSS TB Program will forward the information to health authorities in the other state and provide the results of evaluations of any identified contacts in the congregate setting to the TB nurse case manager in the index case's health jurisdiction of residence.

CHAPTER 6: EVALUATION OF CONTACTS

Detection of Latent TB Infection (LTBI)

1. Mantoux Tuberculin Skin Testing

Mantoux tuberculin skin testing remains the predominant accepted methodology to identify latent TB infection (LTBI) in New Jersey. Unfortunately, a reaction to this test is not necessarily an indication of infection by *Mycobacterium tuberculosis*. A delayed hypersensitivity reaction to tuberculin solution may also result from previous BCG vaccination or infection by other mycobacterial species of no public health concern but prominent in the environment (e.g., *M.avium*, *M.gordonae*). Such infections generally only present a danger of active progressive disease to severely immune compromised individuals, are not transmissible person-to-person and are often resistant to the drug(s) used to treat LTBI.

The lack of specificity inherent in the Mantoux tuberculin skin test is a concern, but less so in the evaluation of high risk contacts to a suspected or confirmed infectious or potentially infectious TB case. The increased risk of recently acquired infection and progression to active disease in these individuals is sufficient to warrant a reduced cut point of only 5mm of induration as evidence of latent TB infection (LTBI).

Administering the Test

The proper administration of this test requires an intradermal injection of 0.1 ml of purified protein derivative (PPD) tuberculin containing five tuberculin units (TU) into the inner surface of the forearm. The injection should be made just beneath the surface of the skin using a disposable tuberculin syringe with the needle bevel facing upward. This should produce a discreet, pale elevation of the skin (a wheal) six to ten millimeters in diameter. Record the forearm (right or left) on which the Mantoux tuberculin skin test was administered.

Reading the Test

ONLY a trained health care worker is qualified to read a Mantoux tuberculin skin test. Tuberculin skin tests must **NEVER** be read by family members or other untrained persons. No one should be allowed to read and report their own tuberculin skin test reactions, **EVEN** an adequately trained health care worker. This includes non-reactive or negative tuberculin skin tests.

The area of induration (palpable raised hardened area) around the site of injection is the reaction to tuberculin. The diameter of the indurated area must be measured across the forearm (perpendicular to the long axis). Erythema (redness and/or swelling) must **not** be measured to determine the significance of the reaction.

The reaction to a Mantoux tuberculin skin test should be read 48 to 72 hours after administration. If a patient fails to appear for a scheduled reading, a significantly measurable reaction (in the case of contacts $\geq$ 5mm of induration) may be considered reliable up to seven days after the test was administered. A Mantoux tuberculin skin test

of a contact to suspected or confirmed infectious or potentially infectious TB with an induration measuring less than 5mm or no observable reaction must be repeated unless read within 72 hours of administration.

Recording the Reaction to the Test
All tuberculin skin test reactions must be recorded in millimeters of induration. If no induration is detected, "0 mm" must be recorded.

2. QuantiFERON-Gold (QFT-G) Test
The QFT-G test is a blood assay for *M.tb* which is available as an alternative in vitro test for the identification of LTBI. The CDC states that the QFT-G test may be used in all circumstances in which the Mantoux tuberculin skin test is currently used (MMWR, Dec 16, 2005, Vol. 54). The result of a QFT-G test is a valid and acceptable method for identifying LTBI in patients 5 years of age or older, regardless of HIV status whenever practical.

While addressing the specificity issues surrounding Mantoux tuberculin skin testing, the QFT-G test may present logistical and/or cost barriers that make it impractical in most clinical testing environments in New Jersey.

The Department of Health and Senior Services funds the offering of the QFT-G test in its regional TB specialty clinics only. These clinics are properly equipped and their staff trained to provide this test for contacts to suspected or confirmed infectious or potentially infectious TB disease. Other patients may also access this testing (as deemed necessary by the regional clinic physician or state TB Nurse Consultant).

It is strongly recommended that contacts with a history of BCG vaccination be tested for LTBI using the QFT-G test. If an identified contact is a resident of a county hosting a regional TB specialty clinic, then the QFT-G test may be done in lieu of a Mantoux tuberculin skin test. If the patient is a resident of another county, then a Mantoux tuberculin skin test should be administered initially. Contacts with a significant reaction to this test (≥ 5mm of induration) should be referred to a regional TB specialty clinic for QFT-G testing, a physician evaluation and treatment recommendations. The regional TB specialty clinic will draw and manage the blood for analysis and inform the referring jurisdiction of the results of the QFT-G test when available from the state laboratory.

A positive QFT-G test result is indicative of the presence of LTBI. A negative QFT-G test result indicates the absence of LTBI, but may need to be repeated for a contact (see "window" period, page 41). An indeterminate QFT-G test result is inconclusive and may require retesting with QFT-G or substitution of a Mantoux tuberculin skin test. Consult the regional chest clinic physician or the TB Program Nurse Consultant for how to proceed if an indeterminate QFT-G test result is reported.

Contacts Previously Testing Positive for LTBI
Contacts with a documented previous positive Mantoux tuberculin skin test or QuantiFERON®TB Gold test do **not** require testing due to exposure. These contacts

may be considered by a physician for treatment of LTBI, but cannot contribute to the determination of transmission due to the exposure.

Previous Bacille Calmette-Guerin (BCG) Vaccination

Prior vaccination with BCG is **NOT** a contraindication for Mantoux tuberculin skin testing or QFT-G testing in high risk contacts to index cases with suspected or confirmed infectious or potentially infectious TB. While a positive QFT-G will confirm LTBI, the risk for LTBI in this population is sufficient to minimize the likelihood of a false positive reaction to a Mantoux tuberculin skin test in contacts with a history of BCG vaccination.

Timeline for Initial Tuberculin Skin Testing or QFT-G

1. High Risk Contacts

High risk contacts should be administered a Mantoux tuberculin skin test **within 10 working days of identification**. Ideally, these contacts should be given a Mantoux tuberculin skin test at the time of their initial assessment. If a resident of a county hosting a regional TB specialty clinic, these contacts should be scheduled for QFT-G testing within this same timeframe.

2. Low Risk Contacts

Low risk contacts should be administered a Mantoux tuberculin skin test **within 10 working days of the identified need to expand the contact investigation to this group**. If a resident of a county hosting a regional TB specialty clinic, these contacts should be scheduled for QFT-G testing within this same timeframe.

"Window" Period

The ability of either a Mantoux tuberculin skin test or QFT-G blood assay to detect LTBI can be 8 to 10 weeks post-exposure. If an initial reaction to a Mantoux tuberculin skin test is not significant (< 5mm of induration) or an initial QFT-G test result is negative, it must be repeated to make a determination regarding the contact's true LTBI status.

The "window" period begins either;

1. At the end of exposure to the index case, or
2. In the case of on-going exposure to the index case, at the end of the infectious period for the index case.

The "window" period ends 8 to 10 weeks after it begins.

Special Circumstances Due to the "Window" Period

1. **For a contact whose exposure to the index case ended at least 8 weeks ago;** The initial Mantoux tuberculin skin test or QFT-G test result is considered valid, no repeat testing is required.

2. **For a contact whose exposure to the index case has ended;**

If the initial Mantoux tuberculin skin test result is not significant (<5mm of induration) or initial QFT-G test result is negative, a second test must be administered at least eight (8) weeks after the end of the exposure period.

3. **For a contact who is a member of a vulnerable population (see definitions, page 2) and whose exposure to the index case is on-going;**
   If the initial skin test result is not significant or QFT-G test result is negative, subsequent tuberculin skin tests are required every eight (8) weeks with the last being administered at least eight (8) weeks after the infectious period for the index case has ended.

4. **For a contact who is NOT a member of a vulnerable population and whose exposure to the index case is on-going;**
   If the initial skin test result is not significant or QFT-G test result is negative and exposure is on-going, a second tuberculin skin test is required at least eight (8) weeks after the infectious period for the index case has ended.

5. **If atypical mycobacterial cultures are identified and disease due to *M.tb* is ruled out during the "window" period;**
   A second tuberculin skin test or QFT-G test for contacts is not necessary regardless of risk category.

Evaluation and Treatment of Infants Less Than Three (3) Months of Age

If the mother has tuberculosis disease, the infant should be evaluated for congenital tuberculosis. A tuberculin skin test and chest x-ray should be obtained immediately. Further diagnostic tests are indicated to rule out TB disease. The tuberculin skin test result is usually negative in infants less than 3 months of age. If the chest x-ray is negative and congenital TB disease has been ruled out, treatment with INH should be initiated promptly for treatment of LTBI.

The infant should be tuberculin skin tested again at four months of age **OR** after the "window" period (8 weeks), whichever is later. If the tuberculin skin test is positive, the infant should be reassessed for tuberculosis disease. If tuberculosis disease is excluded, treatment with INH should continue for a total of 270 doses by DOT. If the TST is negative, treatment can be discontinued as long as the source case has been adherent to DOT and is clinically responding to treatment. The infant should be medically evaluated monthly while on treatment for LTBI.

If the source case is not the mother, it is recommended that the infant be medically evaluated as soon as possible, including a chest x-ray to rule out TB disease. If TB disease is ruled out, treatment with INH for LTBI by DOT should be initiated. The infant should be tuberculin skin tested again at four months of age **OR** after the "window" period (8 weeks), whichever is later.

If the tuberculin skin test is positive, the infant should be reassessed for tuberculosis disease. If tuberculosis disease is excluded, treatment with INH should continue for a total of 270 doses by DOT. If the TST is negative, treatment can be discontinued.

Chest Radiographs

Chest radiographs are required to distinguish between LTBI and active TB disease prior to prescription of a single drug to treat LTBI. Contacts to suspected or confirmed infectious or potentially infectious TB requiring a chest radiograph include;

1. All contacts with a significant reaction to a Mantoux tuberculin skin test or positive QFT-G test,

2. Any contact with TB-like symptoms regardless of Mantoux tuberculin skin test or QFT-G test result, and

3. Any contact with an induration of less than 5mm to a Mantoux tuberculin skin test or a negative result on a QFT-G test being considered for treatment during the "window" period (see Treatment During the "Window" Period, page 46).

HIV Testing

Any contact with HIV infection or AIDS is considered high risk for progression to active TB disease once infected. Knowing the HIV status of every contact with LTBI is essential to determine the appropriate effort required to promote completion of treatment for LTBI (see page 51 in Chapter 7).

The MMWR Recommendations and Reports, dated September 22, 2006 and titled, "Revised Recommendations for HIV Testing of Adults, Adolescents and Pregnant Women in Health Care Settings," significantly changes and simplifies the historic approach to HIV testing in these settings, including TB clinics. The CDC, NJDHSS Division of HIV/AIDS Services and NJDHSS TB Program support immediate implementation of these new recommendations.

The new recommendation is that HIV testing be universal in health care settings. **In TB clinics, HIV testing should be presented to the patient as a routine element of a thorough diagnostic evaluation, just like a Mantoux tuberculin skin test, QFT-G test or chest radiograph.**

The historic approach required the patient to accept HIV testing (opt-in), the revised approach forces the patient to refuse HIV testing (opt-out). The following are no longer required;

- Screening patients for HIV risk factors,
- Counseling prior to the administration of an HIV test,
- Separate consent form for HIV testing. and
- Post-test counseling for patients with negative HIV test results.

Post-test counseling for patients with positive HIV tests may be done in the TB clinic or by referral. The provision of HIV counseling for patients with positive HIV test results in the TB clinic is preferred, but not essential. What is essential is that the nurse case manager monitors, promotes and facilitates the success of all referrals for HIV follow-up. This includes securing the patient's consent to share positive HIV test results with the HIV service provider. The TB clinic must also satisfy regulations to report positive HIV test results to NJDHSS if the testing is done in the TB clinic. Reporting to NJDHSS does not require patient consent.

Intervention with Contacts Refusing Evaluation

The New Jersey Administrative Code, Title 57, Chapter 8, Subchapter 5, Section 10 (N.J.A.C. 8:57-5-10) presents the interventions prescribed to deal with individuals refusing a diagnostic evaluation, which may include initial or post-exposure testing and/or chest x-ray. These individuals include;

1. Contacts to suspected or confirmed infectious or potentially infectious TB,
2. Potential source case in a source case investigation, or
3. Anyone suspected of having infectious or potentially infectious TB.

The procedure is as follows and stops at whatever step the diagnostic evaluation is completed;
Step 1: Public Health Warning Notice for Diagnostic Evaluation
Step 2: Health Officer's Order for Diagnostic Evaluation
Step 3: Court Order for Diagnostic Evaluation

Step 1: Public Health Warning Notice for Diagnostic Evaluation

1. A Public Health Warning Notice for Diagnostic Evaluation (see Appendix 16) may be issued to any person in the classifications 1-3 above who;
    - Refuses to submit to a diagnostic evaluation or
    - Misses two consecutive scheduled appointments for diagnostic evaluation.

2. The Notice shall be issued by the designated TB nurse case manager or designee for the patient's health jurisdiction of residence within two working days after the occurrence of either of the two situations in 1 above.

3. The Notice shall state the issue as "failure to receive a diagnostic evaluation to determine current TB status." It shall also state the public health consequence of continued refusal or non-adherence as "potential threat to the public health." It shall continue to state the action required to remedy the situation as, "call to schedule an appointment for diagnostic evaluation within three working days of receipt of the Notice and keep the appointment as scheduled." The Notice will specify who is to be contacted to schedule the appointment for diagnostic evaluation. Lastly, it shall state the consequence of not scheduling or keeping the appointment for diagnostic evaluation, "a health officer's order for diagnostic evaluation will be issued."

4. The Notice may be served to the person by certified mail, return receipt requested, or hand delivered. Hand delivery is preferable and essential if the certified letter cannot be delivered. Successful hand delivery is defined as a face-to-face encounter with the intended recipient. Hand delivery is preferred because;
    - The receipt of the Notice is witnessed and
    - The conditions of the Notice can be discussed.

5. File a copy of the Notice in the person's medical record.

6. If the person schedules an appointment as instructed by the Notice and keeps that appointment, no further action is required. If no appointment is scheduled or the appointment is broken, the health officer in the patient's jurisdiction of residence must be notified by the nurse case manager or designee and a health officer order requested within two working days of the;
    - Deadline to schedule an appointment if no appointment is scheduled or
    - Missed appointment if an appointment is scheduled and not kept.

Step 2: Health Officer Order for Diagnostic Evaluation

1. A Health Officer Order for Diagnostic Evaluation (see Appendix 17) shall be issued within three working days of the request by the nurse case manager or designee.

2. The Order shall state the issue as "failure to receive a diagnostic evaluation to determine current TB status." It shall also state the public health consequence of continued refusal or non-adherence as "potential threat to the public health." It shall continue to state the action required to remedy the situation as, "call to schedule an appointment for diagnostic evaluation within three working days of receipt of the Order and keep the appointment as scheduled." The Order will specify who is to be contacted to schedule the appointment for diagnostic evaluation. Lastly, it shall state the consequence of not scheduling or keeping the appointment for diagnostic evaluation as, "seeking a court order for diagnostic evaluation."

3. The Order may be served to the person by certified mail, return receipt requested, or hand delivered. Hand delivery is preferable and essential if the certified letter cannot be delivered. Successful hand delivery is defined as a face-to-face encounter with the intended recipient. Hand delivery is preferred because;
    - The receipt of the Notice is witnessed and
    - The conditions of the Notice can be discussed.

4. Local law enforcement officers are authorized to assist the local health officer in delivering the Order upon request. This is encouraged in some instances to reinforce the importance of the diagnostic evaluation.

5. File a copy of the Notice in the person's medical record.

6. If the person schedules an appointment as instructed by the Order and keeps that appointment, no further action is required. If no appointment is scheduled or the appointment is broken see Step 3 below.

Step 3: Court Order for Diagnostic Evaluation

1. The health officer in the patient's jurisdiction of residence may petition the Superior Court for a hearing to obtain a court order for diagnostic evaluation.

2. Before the court is petitioned, consultation is required between the local health officer, TB nurse case manager, State Epidemiologist and/or TB Program Manager or designees. This consultation shall occur within two working days of either the deadline imposed by the health officer order to schedule an appointment if no appointment is scheduled by the patient or the date of the missed appointment if an appointment is scheduled and not kept.

3. If it is decided that seeking a court order for diagnostic evaluation is warranted and necessary to protect the public health, the health officer in the patient's jurisdiction of residence will work through local legal counsel to petition the court.

4. The TB clinic will generally be the site of the diagnostic evaluation, unless an acute care setting is required to complete the evaluation. In either case, the evaluation must be completed within seven (7) days of the court order.

CHAPTER 7: TREATMENT AND MONITORING

Treatment for Latent TB Infection (LTBI) in Contacts

Fifty percent of all persons who progress to active disease do so within two years of infection. **Treatment for LTBI is a HIGH PRIORITY for contacts to infectious or potentially infectious TB disease due to the high risk for progression to active disease for recently infected individuals.**

ONLY one month of medication for treatment of LTBI should be provided at a time. There will be the occasional exception to this rule, but exceptions should be rare to reduce the likelihood of the emergence of adverse reactions in the absence of monthly nursing assessments.

Prior BCG vaccination is **NOT** a contraindication for prescribing treatment for LTBI in contacts to suspected or confirmed infectious or potentially infectious TB.

Treatment with INH for LTBI is **NOT** contraindicated for pregnant women.

Treatment During the Contact's "Window" Period

The "window" period refers to the period between an initial negative tuberculin skin test result for a contact and the second test administered a minimum of eight weeks after the end of the infectious and/or exposure period, whichever comes first.

In this eight week "window" period, only contacts who are children <5 years of age AND adult contacts with HIV infection are recommended for treatment. If the second test is negative, treatment must be stopped.

Standard Treatment Regimen for Contacts

Contacts to pan-sensitive TB cases must be treated with a minimum **270 doses of INH** taken **within 12 months**. The minimum treatment time required to ingest the appropriate number of doses is nine (9) months.

If infection with an organism **resistant to only INH** is suspected or known, an acceptable regimen is **120 doses of RIF** taken **within six months** to ensure adequate treatment. The minimum time required to ingest the appropriate number of doses is four (4) months.

If infection with an organism **resistant to only RIF** is suspected, **270 doses of INH** must be taken **within 12 months** to ensure adequate treatment. The minimum time required to ingest the appropriate number of doses is nine (9) months.

If infection with an organism **resistant to both INH and RIF** is suspected, consult an expert in the management of contacts to multi-drug resistant (MDR) TB. .

A rifampin treatment regimen is not the first choice for HIV co-infected contacts and should be used with caution in persons who are taking either protease inhibitors or non-nucleoside reverse transcriptase inhibitors (NNRTI) due to drug interactions. Consultation with an expert is recommended.

To arrange for expert physician consultation, contact the NJDHSS TB Program at (609) 588-7522.

The four (4) month regimen for treatment of latent TB infection using rifampin may be considered for contacts to an INH-sensitive index case, but INH for nine (9) months is preferred due to its proven efficacy. Circumstances when the short-course rifampin regimen may be preferable would include;

- Past or present adverse reaction or intolerance to INH,
- Transient nature of the contact reducing the likelihood of completion of a nine month treatment regimen (i.e., migrant workers, homelessness, etc.) and
- A reduction in the number of visits for refills would increase the likelihood of treatment completion.

Table #1: Treatment Regimens for LTBI

Drugs	Months of Duration	Interval	Dosage	Minimum Doses and Timeframes for Completion
Isoniazid*	9	Daily	300 mg	270 within 12 months
	9	2X Weekly	900 mg	76 within 12 months
Rifampin	4	Daily	600 mg	120 within 6 months

*Preferred

Table #2: Appropriate Dosing for Treatment of LTBI

Medications	Dosages in mg/kg and maximum dosage (in parenthesis)			
	Daily		2 X Weekly	
	Child/Adolescent	Adults	Child/Adolescent	Adults
Isoniazid (INH)	10-15 mg/kg (300mg)	5 mg/kg (300mg)	20-30 mg/kg (900mg)	15 mg/kg (900mg)
Rifampin (RIF)	10-20 mg/kg (600mg)	10 mg/kg (600mg)		

Directly Observed Therapy (DOT) for Treatment of LTBI

DOT should be prescribed whenever;

- An intermittent (2X weekly) INH regimen is prescribed,
- Contacts to MDR-TB are placed on an unconventional treatment regimen **or**
- Treating infants and children < 5 years of age who are contacts to persons with infectious or potentially infectious TB disease,

LTBI Treatment Interruptions

A treatment interruption is defined as a **continuous lapse in therapy of at least 14 days**. In the interest of adequate treatment, it must be assumed that the doses missed were consecutive if the patient is delinquent by 14 days or more in picking up refill medication if on self-administered medication.

When the interruption of treatment for LTBI is **within the first three months** of initiating therapy, treatment must be **restarted from the beginning**.

If the interruption occurs **after the third month of treatment**, therapy should **resume completing the originally prescribed duration of therapy**.

When therapy is restored after an interruption of **more than two months, a clinical assessment to rule out active TB disease is indicated**, such an assessment is essential if symptoms consistent with TB exist.

Monthly Nursing Assessment

Patients with LTBI must be assessed monthly by a licensed registered nurse to monitor for both drug toxicity and adherence. This monitoring will typically take place at the time of the monthly refill of prescribed treatment for LTBI. The nurse will refer any complications to the physician for appropriate follow-up. Additional clinical sessions with the physician will be ordered as needed to appropriately medically manage the patient.

Special Considerations for LTBI associated with MDR-TB:

All contacts with LTBI suspected as a result of exposure to an active case with MDR-TB disease must be followed for at least two years, irrespective of treatment.

If Treatment is Prescribed

Patients do not require follow-up physician visits unless drug toxicity or adherence issues are identified by monthly nursing assessments while on treatment. Nursing staff assigned this responsibility must refer any complications to the physician for evaluation.

If Treatment is NOT Prescribed

Nursing assessments to review for the emergence of symptoms consistent with active TB disease must be conducted periodically as directed by a physician for two years post-

infection. If symptoms consistent with active TB disease are identified, the patient must be immediately referred to the physician for evaluation.

Laboratory Monitoring during Treatment for LTBI

Neither baseline nor routine laboratory testing is indicated for healthy individuals prior to the start or during treatment for LTBI. However, baseline and follow-up serum AST, ALT and total bilirubin are recommended for patients meeting any of the following criteria:

- A history of chronic liver disease (e.g., chronic hepatitis B and C, alcoholic hepatitis and cirrhosis),
- Chronic use of alcohol,
- HIV infection treated with HAART,
- Concomitant hepatotoxic medication(s),
- Pregnant women or women up to three months postpartum.

Baseline and follow-up monitoring of serum ALT should be considered for patients aged 35 years or older.

The frequency of routine monitoring may be monthly, every other month or at 1, 3 and 6 months for patients prescribed a 9-month INH treatment regimen depending on the perceived hepatotoxicity risk and the stability of ALT.

The decision to treat or defer treatment for LTBI should be carefully made on a case-by-case basis, weighing the risk of progression to active TB disease against the risk of isoniazid or rifampin related drug induced liver injury.
Factors influencing the latter include:

- Degree of baseline ALT elevation,
- Alcohol consumption,
- Age, **AND**
- Evidence of active replication of hepatitis virus.

If treatment for LTBI is started for these patients, measuring serum transaminases and bilirubin concentrations every 2 to 4 weeks for the first 2 to 3 months and as necessary is recommended.

Treatment for LTBI should be stopped if the serum AST and/or ALT are greater than:

1. Three times the upper limit of normal for patients with pre-existing liver disease or current symptoms of liver disease **OR**

2. Five times the upper limit of normal for patients currently asymptomatic for liver disease or with previously normal liver function values and no risk for liver disease

Consultation must be sought for an adjustment of treatment for LTBI if serum AST and/or ALT levels are elevated to the degree indicated above.

Alternative treatment regimens may be recommended for contacts with concurrent conditions that further increase their risk for progression to active disease, such as HIV infection, AIDS or other immunosuppressive conditions or treatments.

Non-Adherence to Prescribed Treatment for LTBI in Contacts

The completion of treatment for LTBI in contacts is the second highest priority of any effective TB program, but it still ranks below completion of treatment for TB cases. The appropriate follow-up for contacts delinquent for refills of their medication(s) will be dependent upon;

1. Adequate personnel to follow-up both delinquent TB cases and contacts **and**
2. The risk for progression to active disease if treatment is not completed.

Generally contacts should be contacted by phone at least once requesting they return to the clinic for refills **before** they can be closed to medical supervision. The phone contact **must** be made within one week of any lapse in treatment of at least 14 days. During this call the nurse case manager must promote continued treatment for LTBI and attempt to solicit the patient's response to resuming treatment. If the patient refuses, document this fact in the medical record and close the contact to further medical supervision. If the contact agrees, but does not pick up a refill within two weeks of the call, he or she may be closed to medical supervision.

If a contact has no phone or cannot be reached by phone after at least two attempts on separate days, a letter **must** be sent requesting they return to the clinic for a refill. The letter **must** be sent within one week of any lapse in treatment of at least 14 days or after two attempts to contact them by phone have failed. A second letter should be sent a week after the first letter if the contact does not pick up a refill in the interim. Both letters **must** fail to solicit a response within two weeks of its mailing **before** a contact may be closed to medical supervision.

If contacts are;

1. Members of a vulnerable population (see page 3) which places them at increased risk for progression to active disease **or**
2. Contacts to MDR-TB who are prescribed treatment for LTBI

a visit to their residence for the purpose of returning them to treatment is required **before** they can be closed to medical supervision.

Delivery of refills during this home visit may be considered if, and only if, the visit is made by a registered nurse who can perform a nursing assessment on-site before providing the patient the refill. Otherwise, the patient must be required to come to the clinic for a nursing assessment before receiving the refill. If the patient refuses to continue treatment for LTBI or agrees to come to the clinic for a refill and fails to do so within two weeks of the home visit, he or she may be closed to medical supervision.

Any contact should be allowed to restart medication(s) only once after a lapse in treatment of ≥2 months.

CHAPTER 8: SOURCE CASE INVESTIGATIONS

Source case investigations are **mandatory** in New Jersey for children < five (5) years of age with confirmed TB disease (pulmonary or extra-pulmonary) **unless** the child's disease was diagnosed as a result of a contact investigation surrounding a suspected or confirmed infectious or potentially infectious TB case. In such an instance, it may be safely assumed that the source case has already been identified and no source case investigation is required.

The objective of a source case investigation is to determine the source of a child's disease. The site of the child's disease (pulmonary or extra-pulmonary) is not relevant. The younger the child, the fewer existing associations and the more likely these investigations will be successful.

The record review and interview of the child/parents/guardians for a source case investigation seeks to gather information to identify an individual with undiagnosed infectious TB that was the source of the child's disease.

Focus of the Investigation

Source case investigations should focus on evaluation of members of the household and extended family and other persons **providing** child care services (e.g., close friends, neighbors, daycare workers or babysitters).

Timetable for the Interview

An interview of the child and parents or legal guardian(s) must occur **within three (3) working days** after receipt of the first report of **suspected or confirmed pulmonary or extra-pulmonary TB disease** for any child less than five (5) years of age for the purpose of source case investigation.

Evaluation of the Potential Source Cases

Persons with exposure to a child with suspected or confirmed active TB disease at any site within **three months prior** to the child's diagnosis should be evaluated as a potential source case.

Source case finding requires **only one test/evaluation** of each potential source case. There is **no** "window" period in a source case investigation.

Each evaluation should begin with a Mantoux tuberculin skin test or QuantiFERON®-Gold blood assay.

- If no evidence of LTBI exists and the potential source case is asymptomatic, no further evaluation is necessary.

- If evidence of LTBI exists or the potential source case is symptomatic of active TB disease, a chest x-ray **must** be performed and interpreted by a radiologist. If

the potential source case is able to produce sputum, a specimen **must** be collected and sent to the laboratory for AFB smear and culture.

- Contacts with a documented previous positive Mantoux tuberculin skin test or QuantiFERON®TB Gold test do **not** require testing during a source case investigation, but must receive a chest x-ray and medical evaluation if manifesting respiratory symptoms.

Treatment of the Potential Source Case

For appropriate treatment of a potential source case suspected or confirmed to have active disease, see Chapter 6 of the *NJDHSS Standards of Care for Tuberculosis Disease and Latent TB Infection*.

For appropriate treatment of a potential source case with latent TB infection, see Chapter 7 of this document.

Required Documentation

The TB-41 form must be used to document the findings of a source case investigation and be submitted to the TB Program on the schedule prescribed by the form's instructions. If an infectious or potentially infectious TB case is identified as a result of a source case investigation, the contacts listed on the TB-41 for this new index case should include **only** those contacts unique to the new index case and not those previously listed on the TB-41 associated with the source case investigation.

Alternately, if the child's pulmonary or extra-pulmonary TB is diagnosed as a result of a contact investigation surrounding another index case, no source case investigation is required but a TB-41 should be submitted for the child indicating that contacts were identified and already evaluated as a result of another investigation.

TB INDEX CASE ASSESSMENT FORM
RISK FOR TRANSMISSION

This form **must** be completed for each index case to determine the risk for transmission

Index Case Name (Last, First, MI) _____

Birth Date: _____ TB Case Number: _____

Characteristics of the Index Case

Bacteriology, if done (circle the highest scoring applicable option **only**)

Suspected or confirmed laryngeal TB	10
Sputum smear (+) for AFB	10
Smear (+) for AFB from respiratory source other than sputum	8
Smear (-), culture positive for *M.tb* from any respiratory source	3
Smear (-), culture pending or culture negative from any respiratory source	0
Clinical case definition, pulmonary TB	0

Radiology (circle **only** one applicable option)

Cavities on CXR or CT scan	5
Non-cavitary, abnormal CXR consistent with TB	2
Normal	0

Symptoms (circle **only** one applicable option)

History of cough and/or hemoptysis	5
No history of respiratory symptoms	0

Total for applicable index case characteristics _____
(Add all circled values above that are applicable to the index case in question)

Findings
(Check the box below that applies to this index case)

☐ High Risk for Transmission (Total 10 – 20)

☐ Low Risk for Transmission (Total 03 – 09)

☐ Risk Does Not Warrant Contact Investigation (Total <03)

Signature of staff completing assessment: _____ Date: _____

The findings of this assessment will be used to complete the Exposure Assessment Worksheet for persons exposed to this index case.

PLEASE PRINT OR TYPE ALL INFORMATION!

NJDHSS USE ONLY:	Date Counted: ____________	Final Dx (Check one): ☐ + Sputum Smear ☐ Neg. Sputum Smear/+ Sputum Culture ☐ Pulm-Other-Cul ☐ Pulm-Clinical ☐ Extra-Pulm

New Jersey Department of Health and Senior Services
TB Program
PO Box 369, Trenton, NJ 08625-0369

RECORD OF CONTACT INTERVIEW

☐ **Initial** ☐ **Interim** ☐ **Final**
☐ **No Contacts Identified** ☐ **Interview Not Done**

TB-70 #

Date Reported

Name: Last First MI			Street Address
City	County	Zip Code	Date of Birth / Telephone Number
Name of Employer/School/Congregate Setting			Address
Telephone Number of Employer/School/Congregate Setting			Occupation
Date of Interview	Date of Reinterview	Infectious Period: From: To:	Reason for Interview ☐Case ☐Suspect ☐Child <5 Years Old

CONTACT INFORMATION						**EXAMINATION RESULTS**					**Remarks**
Last Name, First Name Address/Telephone Number	**Nature of Contact (Codes 1-8)**	**DOB and/or Age**	**Sex**	**For-eign Born**	**Last Exposure Date**	**Date Done / Results**	**Date Done / Results**	**X-Ray Date / Results**	**Therapy Date / Meds (K-P)**	**Completed Rx Date or Incomplete Code A-G**	
			☐M ☐F	☐Y ☐N		☐QFT- ☐QFT+ mm	☐QFT- ☐QFT+ mm				
			☐M ☐F	☐Y ☐N		☐QFT- ☐QFT+ mm	☐QFT- ☐QFT+ mm				
			☐M ☐F	☐Y ☐N		☐QFT- ☐QFT+ mm	☐QFT- ☐QFT+ mm				
			☐M ☐F	☐Y ☐N		☐QFT- ☐QFT+ mm	☐QFT- ☐QFT+ mm				

Name and Title of Interviewer		Agency Name	
Signature	Date Submitted	Agency Telephone Number	Reviewed by NJDHSS (Initials and Date)

NATURE OF CONTACT: 1-Household 2-Worksite 3-School 4-Jail/Prison 5-Health Care Facility 6-Social 7-Shelter 8-Other
MEDS: K-INH L-RIF M-INH or RIF Intermittent N-Special Regimen (MDR) O-Other LTBI Rx P-Rx for TB Case/Suspect
RX INCOMPLETE: A-Death B-Moved, Records Referred C-Active TB D-Adverse Effects E-Refused F-Lost G-Provider Decision

RECORD OF CONTACT INTERVIEW, Continued

TB-70 #

Name: Last	First	MI	County

CONTACT INFORMATION						EXAMINATION RESULTS					
Last Name, First Name Address/Telephone Number	**Nature of Contact (Codes 1-8)**	**DOB and/or Age**	**Sex**	**For-eign Born**	**Last Exposure Date**	**Date Done / Results**	**Date Done / Results**	**X-Ray Date / Results**	**Therapy Date / Meds (K-P)**	**Completed Rx Date or Incomplete Code A-G**	**Remarks**
	☐☐☐☐		☐M ☐F	☐Y ☐N		☐QFT- ☐QFT+ mm	☐QFT- ☐QFT+ mm				
	☐☐☐☐		☐M ☐F	☐Y ☐N		☐QFT- ☐QFT+ mm	☐QFT- ☐QFT+ mm				
	☐☐☐☐		☐M ☐F	☐Y ☐N		☐QFT- ☐QFT+ mm	☐QFT- ☐QFT+ mm				
	☐☐☐☐		☐M ☐F	☐Y ☐N		☐QFT- ☐QFT+ mm	☐QFT- ☐QFT+ mm				
	☐☐☐☐		☐M ☐F	☐Y ☐N		☐QFT- ☐QFT+ mm	☐QFT- ☐QFT+ mm				
	☐☐☐☐		☐M ☐F	☐Y ☐N		☐QFT- ☐QFT+ mm	☐QFT- ☐QFT+ mm				
	☐☐☐☐		☐M ☐F	☐Y ☐N		☐QFT- ☐QFT+ mm	☐QFT- ☐QFT+ mm				
	☐☐☐☐		☐M ☐F	☐Y ☐N		☐QFT- ☐QFT+ mm	☐QFT- ☐QFT+ mm				

NATURE OF CONTACT: 1-Household 2-Worksite 3-School 4-Jail/Prison 5-Health Care Facility 6-Social 7-Shelter 8-Other

MEDS: K-INH L-RIF M-INH or RIF Intermittent N-Special Regimen (MDR) O-Other LTBI Rx P-Rx for TB Case/Suspect

RX INCOMPLETE: A-Death B-Moved, Records Referred C-Active TB D-Adverse Effects E-Refused F-Lost G-Provider Decision

New Jersey Department of Health and Senior Services
TB Program

Instructions for Completing the RECORD OF CONTACT INTERVIEW (TB-41)

PURPOSE:
To provide a form to document the examination of individuals identified as contacts of a new case/suspect of tuberculosis.

OFFICE MECHANICS AND FILING:
This form is completed and kept current by local and state TB personnel as the examinations are completed. The form must be submitted to NJDHSS TB program within the established timeframes.

EXPLANATIONS AND DEFINITIONS:
This form will be used by county, district, and state TB personnel to summarize the results of contact examinations during the epidemiological investigation of cases/suspects of tuberculosis. Contact examinations may consist of tuberculin skin testing (TST) or QuantiFERON (QFT), chest x-ray, review of signs and symptoms, medical evaluation and initiation of treatment for latent tuberculosis infection (LTBI), if indicated.

Tuberculin skin test = TST
QuantiFERON = QFT

ITEM-BY-ITEM INSTRUCTIONS:

PLEASE PRINT OR TYPE ALL INFORMATION

Record of Contact Interview: Enter an (**X**) to indicate:

Initial: - **Due in the Trenton office within thirty (30) days after the submission of the TB-70.**
When submitted must include: listing of all contacts with identifying and locating info, the initial testing results (TST or QFT) date and results, chest x-ray date and results and any starting dates of treatment for LTBI, along with the medications codes (indicated at the bottom of the TB-41).

Interim: - **Due in the Trenton office within three (3) months after the submission of the TB-70.**
When submitted must include: listing of all contacts with identifying and locating info, both the initial and second testing (TST or QFT) date and results, chest x-ray dates and results and any starting dates of treatment for LTBI, along with the medications codes (indicated at the bottom of the TB-41).

Final: - **Due in the Trenton office within (1) year from the initiation of treatment of contacts for LTBI.**
When submitted must be complete with all contacts final dispositions indicated: treatment completion dates **or** codes for incomplete treatment

No contacts Identified:
Check this box when an interview and reinterview have been completed and no contacts have been identified. Also check "Final" to indicate that this is the "Final" TB-41.

Interview not done:
Check this box if an interview was not done and then write in the "contact information" area why the interview was not done and submit it as the "Final" TB-41.

TB-70 #: Enter the patient identification number of the case/suspect assigned on the TB-70 form.

Date Reported: Enter the date the case/suspect was reported on the initial TB-70

Name: Enter the name (Last, First, Middle initial) of the case/suspect of tuberculosis.

Street Address: Enter the street address of the index case/suspect.

City: Enter city in which the index case/suspect resides.

County: Enter County in which the index case/ suspect resides.

Instructions for Completing the RECORD OF CONTACT INTERVIEW (TB-41)

Zip Code: Enter zip code in which the index case/suspect resides.

Date of Birth: Enter the date of birth of the index case/suspect.

Telephone Number: Enter the phone number of the index case/suspect.

Name of Employer/School/Congregate Setting: Enter the name of the employer, school or congregate setting that was identified as part of the investigation.

Address: Enter the address of the employer, school or congregate setting that was identified as part of the investigation.

Telephone Number of Employer/School/ Congregate Setting: Enter the telephone number of the employer, school or congregate setting which was identified as part of the investigation.

Occupation: Enter the occupation of the index case/suspect.

Date of Interview: Enter the date that the TB case/suspect was interviewed.

Date of Reinterview: Enter the date that the reinterview was completed.

Infectious Period: Document the start and end points of the investigation and probable transmission period. Refer to the "Practice Standards for Contact and Source Case Investigations" for definitions. If the end of the infectious period is pending due to the infectiousness of the patient, indicate that in this area when submitting the form to the state and revise as appropriate.

Reason for Interview: Enter an (X) to indicate the reason for the interview (case, suspect, child less than 5 years old).

Contact Information:

Enter the contact's name (last, first, middle initial), address, and telephone number in the box.

Nature of the contact: Enter the nature of contact using codes 1-8. Codes may be found at the bottom of the form. Multiple codes may be used. This includes all contacts identified **within the infectious period** in the:

1. **Household**: includes all family and non-family members residing in the household
2. **Worksite**: contacts identified at the work place
3. **School**: all contacts identified at the pre-school/day care, school, college or university setting
4. **Jail / Prison**: all contacts identified in the jail or prison that the patient resided in during the infectious period
5. **Health Care Facility:** all contacts identified in a hospital, nursing home or other health care facility
6. **Social:** all contacts identified in social settings- including friends, leisure and recreational activities
7. **Shelters:** all contacts identified in homeless shelters
8. **Others:** those contacts that do not fall into one of the above categories. Please specify in the "remarks" area

DOB and/or Age: Enter contact's date of birth. Contact's age (or approximate age) may be entered **if** date of birth is unknown.

Sex: Enter an (**X**) to indicate the sex of the contact.
M = Male
F = Female

Foreign Born: Enter an (**X**) to indicate if the contact is foreign-born
Y=Yes
N=No

Instructions for Completing the RECORD OF CONTACT INTERVIEW (TB-41)

Last Exposure: Enter the date of the contact's last exposure to the case during the infectious period (i.e., the point in time where the case and contact cease to share air in an environment conducive to transmission or when the index case is no longer infectious).

Examination Results

TST or QFT Date Done/Results: Enter the date the initial TST was administered with reading in millimeters (mm) or the QFT test date and results as "+" (positive) or "-" (negative). If the contact has a documented positive TST or QFT prior to this investigation indicate by writing "Prev + TST **or** QFT" in this section. This must be a documented positive, not just via patient history. If the contact does not receive an x-ray, indicate the date the symptom assessment was done by writing the date and "sx none" in the remarks section. A symptom assessment **must** be completed on all previously positive TST and QFT contacts.

TST or QFT Date Done/Results: Enter the date and results of the repeat TST (must be recorded in mm) or the QFT test date and results (recorded as "+" or "-").

Chest X-Ray Date/Results: Enter the date of the initial chest x-ray and the results:
N=Normal **Abn**= Abnormal

Therapy Date/Meds (K-P): Enter the date the patient started treatment and enter the prescribed medication regimen, using codes K-P defined at the bottom of the TB-41.

Completed Rx Date or Incomplete Code A-G: Enter the date that the patient completed therapy for LTBI or enter the appropriate code. A-G at the bottom of the TB-41 indicating why the therapy was not completed.

A. Death – use if the patient died after therapy was started.

B. **Moved and records referred**- this is for out of state/country contacts only. Records with complete addresses must be been sent to NJDHSS TB Program for follow-up.

Please note: The initiating county is responsible for the final disposition of all contacts that move within the state.

C. Active TB- patient develops and is being treated for active TB and is no longer being treated for LTBI.

D. **Adverse effects**- therapy is stopped due to adverse reactions from the medications.

E. **Refused**- use this code **only** when the patient started therapy and then stopped against medical advice.

F. Lost- patient is lost to follow-up. This includes those patients that have moved without any locating information.

G. Provider decision- the medical provider has stopped all medications.

Remarks: Enter additional information such as: when the patient refuses treatment for LTBI, the patient dies prior to starting treatment, date of symptom history on those contacts that have had a previous significant TST or + QFT, physician name and phone number that is testing contact(s) and date referred to health officer for follow-up.

Name and Title of Interviewer: Enter the name and title of the person interviewing the TB case/suspect.

Signature: The interviewer will sign the form before each submission.

Date Submitted: Enter the date the TB-41 is submitted to the NJDHSS TB Program.

Agency Name: Enter the agency name responsible for the interview.

Agency Telephone Number: Enter the agency telephone number responsible for the interview.

Reviewed by NJDHSS (Initials and Date): The NJDHSS designee will initial and date the TB-41 after each review.

Contact Investigation Pre-Interview Chart Audit Tool

Patient Name:_____ Alias:_____
Address:_____ DOB:_____
Phone: Patient#_____ Weight (lbs):_____ Hospital Admission Date:_____
Emergency Contact or Next of Kin (name, address, phone):_____

_____

Anatomical site of Disease: □Pulmonary □Laryngeal □Other site(s):_____
HIV Test Results: □Positive □Negative □Refused □Not Offered
TB –like Symptoms Reported? (check all below that apply): **Symptom onset date:**_____
□Cough □Hemoptysis □Shortness of Breath □Weight Loss (if yes, lbs:_____) □Fever
□Night sweats □Loss of Appetite □Fatigability □Chills □Chest Pain □Other:_____
Previous exposure to TB? □No □Yes, explain:_____
Previous TB Treatment? □No □Yes, when & where:_____
Completed? □No □Yes □Documented or □Self reported
Chest X-ray: □ Not Done If done, date:_____ Findings:_____

_____

Other diagnostic imaging studies: Type □CT scan □MRI □Other:_____ □Not Done
Date:_____ Findings:_____

_____

Bacteriology: □Not Done If done, **Reference Lab Used:**_____

Date Collected	Smear	Quantity	Culture	Culture ID	Tracking #
_____	□Neg □Pos	_____	□Neg □Pos	□MTB □Other:_____	_____
_____	□Neg □Pos	_____	□Neg □Pos	□MTB □Other:_____	_____
_____	□Neg □Pos	_____	□Neg □Pos	□MTB □Other:_____	_____
_____	□Neg □Pos	_____	□Neg □Pos	□MTB □Other:_____	_____
_____	□Neg □Pos	_____	□Neg □Pos	□MTB □Other:_____	_____

Drug Susceptibility Test Results: □Pending □Not Done If available, complete below
INH □S □R Rifampin □S □R Ethambutol □S □R PZA □S □R SM □S □R
Other Drugs/Results:_____
Treatment: □Not Started If started, complete below

Drug	Dosage	Date Started	Date Stopped
□INH	_____mg	_____	_____
□Rifampin	_____mg	_____	_____
□PZA	_____mg	_____	_____
□Ethambutol	_____mg	_____	_____
□Other:_____	_____	_____	_____
□Other:_____	_____	_____	_____

Concurrent medications/dosages:_____

_____

Concurrent Medical Conditions: □HIV/AIDS □Renal Disease □Cancer, type:_____ □Diabetes
Other(s):_____
Potential Barriers to Continuity of Care: □Homelessness □Substance Abuse □Dementia
□Mental Illness (Diagnosis:_____) □Other(s):_____

Form Completed by (print name):_____

Signature:_____ Date:_____

New Jersey Tuberculosis Patient Assessment Form

(To be completed with tuberculosis interview)

Interviewer Name: ..... **Date:** ..... **TB-70 #** .....

A. PERSONAL BACKGROUND INFORMATION

1. Patient Name: ..... aka/nickname .....
   D.O.B. ..... S.S # ..... Height: ..... Weight: .....
   Race: ..... Place of Birth (City/State): .....
   If foreign born, name of country: ..... Date arrived in USA: .....
   Immigration Status at first entry into the U.S. .....
   Other identifying characteristics (complexion): .....

2. Current Address: ..... City/State: ..... Zip Code: .....
   Telephone: ..... Mobile phone: ..... Pager: .....
   Type of Housing (house, apt, shelter, nursing home, etc): .....
   How long living at current address: .....
   Lives with (spouse, significant other, etc): .....
   Other address(s) during infectious period (pg.2): .....

3. Next of Kin (different address): ..... Telephone: .....
   In case of an emergency notify (name/address/telephone): .....
   .....

B. MEDICAL INFORMATION/PROBLEM INDICATIORS

1. Medical Provider for TB (nm. /add. /tel.): .....
2. Primary reason evaluated for TB: .....

Recent Hospitalization(s) for TB (name/address/discharge date): .....
Other medical conditions (including Z status): .....
Substance abuse: how long (IV drugs, alcohol): .....

3. Medical follow-up for TB: If clinic (preferred day/time): .....
Transportation availability: .....

4. Understanding of disease transmission/treatment (comment): .....
.....

5. DOT Plan: (where, when): .....

6. Barriers to adherence/follow-up: .....

Appendix 5

PATIENT NAME: .....

C. CONTACT TRACKING INFORMATION

1. Infectious Period (From ..... To .....)
2. Source of income during infectious period (employed, welfare, etc) .....
3. If employed during infectious period: Employer Name: .....

   Address ..... Telephone .....

   Occupation ..... How long employed ..... FT/PT .....
   Transportation to work (personal car, car pool, train, bus, etc.) .....

   Commute time: .....
4. If attended school during infectious period: Name of school: .....
   Address: ..... Telephone: .....
   Grade/Year: .....
5. During the infectious period:
   a. What social activities were you involved in (hangouts, bars, team, sports, community center, etc)?
      Place ..... Hours/day .....
      Place ..... Hours/day .....

   b. Where did you worship? Place ..... Hours/day .....

   c. Where did you travel?
      Out of town (where?) ..... when? ..... How long? .....
      Out of state (where?) ..... when? ..... How long? .....
      Out of country (where?) ..... when? ..... How long? .....

      Means of transportation: .....

   d. Where did you serve, volunteer, frequent, live/stay?

Armed services	y/ n	where	from	to .....
Hospital/ER room	y/ n	where	from	to .....
Nursing home	y/ n	where	from	to .....
DTC	y/ n	where	from	to .....
Detox CTR	y/ n	where	from	to .....
Shelter	y/ n	where	from	to .....
Group living home	y/ n	where	from	to .....
Hotel	y/ n	where	from	to .....
Prison/Jail	y/ n	where	from	to .....
Other (i.e, Dr. office)	y/ n	where	from	to .....

Space for additional comments/information:

Supervisor's comments: .....

.....

SYMTOM HISTORY
FOR ESTABLISHING TB INFECTIOUS PERIOD

PATIENT'S NAME: .....

SYMPTOM	YES	NO	DURATION	ONSET DATE	COMMENTS
COUGH	☐	☐			PRODUCTIVE ☐ DRY:☐
HEMOPTYSIS	☐	☐			
WEIGHT LOSS	☐	☐			
NIGHT SWEATS	☐	☐			
CHEST PAIN	☐	☐			
LOSS OF APPETITE	☐	☐			
FEVER	☐	☐			
CHILLS	☐	☐			
OTHER	☐	☐			

INFECTIOUS PERIOD: ..... **TO** .....

RATIONALE FOR ESTABLISHING INFECTIOUS PERIOD: .....

.....

Additional TB Risk Factors: (contact, missed contact, diabetes, incomplete LTBI Rx, etc.) .....

.....

COMMENTS: .....

.....

COMPLETED BY/DATE: .....

TELEPHONE NUMBER: .....

SUPERVISORY COMMENTS: .....

.....

SIGNATURE: ..... **DATE** .....

Notification of Infection Control Precautions

Patient's Name:_____ DOB: _____

The public health department has determined that your suspected or confirmed TB disease presents an imminent danger to the health of the public. As a result, you are instructed to adhere to the following infection control measures until you are informed by the public health department that it is no longer necessary.

In the hospital, you must:

- Remain in your assigned hospital room unless or until you are moved by hospital personnel.
- Cover your mouth and nose whenever coughing or sneezing.
- Take all medications as prescribed.

After hospital discharge, you must:

- Remain in your residence and/or outdoors on your residential property, except for trips approved by the public health nurse case manager. A respirator must be worn as deemed necessary by the nurse case manager.
- Cover your mouth and nose whenever coughing or sneezing.
- Keep all TB-related medical appointments and take all medications as prescribed.
- Attain prior approval from the public health nurse case manager for visitors entering the residence. Without prior approval, visitors must remain outdoors and may not enter the residence.
- Not visit homes of others, churches, schools, workplaces or other public or private places where you are in contact with others.
- Not use public transportation or taxis.

I acknowledge receipt of these conditions and recognize that failure to adhere with the conditions places the public at risk for transmission and may result in legal action against me.

Patient signature: _____ Date: _____

Witness name: _____

Witness signature: _____ Date: _____

EXPOSURE ASSESSMENT WORKSHEET
For Persons Exposed to a Potentially Infectious TB Index Case

Index Case Name: _____ Birth Date: _____ Case #: _____

Risk for transmission posed by the index case ☐ **High** ☐ **Low**
(See findings of TB Index Case Assessment Form)

Name of individual **or** description of group with common exposure characteristics:

_____

Duration of Exposure (Circle the option that most closely reflects the duration of exposure)	**Value**
Average exposure ≥ 40 hours/week during the infectious period	10
Average exposure ≥ 20, but <40 hours/week during the infectious period	8
Average exposure ≥ 5, but <20 hours/week during the infectious period	5
Average exposure ≥ 1, but <5 hours/week during the infectious period	2
Average exposure < 1 hour/week during the infectious period	0

Proximity of Exposure (Circle the space most closely representing exposure experienced by **each** contact to the index case)	**Value**
0-25 square feet	10
26-99 square feet	8
100-249 square feet	7
250-599 square feet	5
600-999 square feet	4
1,000-1,500 square feet	2
Larger than 1,500 square feet	0

Environment of the Exposure (If the environment of exposure was crowed, circle that option, regardless the quality of ventilation. If not, circle the option most closely reflecting the quality of ventilation)	**Value**
Ventilation poor or crowded environment	10
Ventilation moderate	5
Ventilation good	1
Outdoor exposure only	0

Total for the characteristics of the exposure _____
(Add all circled values above that are applicable to the index case in question)

Interpretation of the Exposure Assessment Worksheet Total

If exposed to a TB index case at high risk for transmission:	**If exposed to a TB index case at low risk for transmission:**
Total=15 to 30, contact(s) at high risk for acquisition of LTBI **Total=12 to 14,** contact(s) at low risk for acquisition of LTBI **Total ≥ 12 and aged < 16 years,** classify as high risk contact(s) **Total <12,** not a contact(s)	**Total=27 to 30** contact(s) at high risk for acquisition of LTBI **Total=25 to 26** contact(s) at low risk for acquisition of LTBI **Total ≥ 25 and aged < 5 years,** classify as high risk contact(s) **Total <25** not a contact(s)

Findings

The individual(s) exposed under the circumstances evaluated by this assessment are properly classified as:

☐ **Contact(s) at high risk for acquisition of LTBI**

☐ **Contact(s) at low risk for acquisition of LTBI**

☐ **Exposed, but not contact(s)**

Signature of staff completing worksheet: _____ Date: _____

Guidelines for Completion of the Exposure Assessment Worksheet

Duration of Exposure

Choose the duration that most closely reflects the exposure for each contact **OR** group of contacts that share a common exposure. Begin with the longest duration of exposure and work down until no further contacts are identified (i.e., ≥ 40 hours/week during the index case's infectious period, ≥ 20, but <40 hours/week during the index case's infectious period, etc.).

Proximity of Exposure

Choose the size of the space that most closely represents the exposure experienced by **each** individual contact or group of contacts that share a common exposure to the index case. Begin with the closest proximity and work towards the most distant until no further contacts are identified (i.e., 0-25 square feet, 26-99 square feet, etc.). Square footage is calculated by multiplying the length by the width of a space.

Environment of Exposure

The environment of exposure will likely be the most difficult for health care workers conducting contact investigations to appropriately assess. The following examples are incomplete, but designed to assist in the assessment of the quality of ventilation.

1. **Good Ventilation** should be indicated in the following circumstances**:**
   - Efficient HVAC system in use indoors as indicated by air that is appropriately cool when air conditioned and warm when heated **OR**
   - Windows open in a vehicle during travel, **OR**
   - Warehouse or other industrial site with high ceilings and doors and/or windows open, especially if using fans for increased circulation.

2. **Moderate Ventilation** should be indicated in the following circumstances:
   - Inefficient HVAC system indoors as evidenced by overly or poorly cooled or heated rooms, but adequate airflow to result in an odorless environment, **OR**
   - Window air conditioner and/or heat pump with windows closed, **OR**
   - No HVAC system, bit windows and/or doors open with good airflow which may or may not be supplemented by a fan, **OR**
   - Vehicle with air conditioning or heating system in use and windows closed during travel.

3. **Poor Ventilation** should be indicated in the following circumstances:
   - Any indoor space where the air flow is stagnant or the environment odorous, regardless of the use or lack of an HVAC system, **OR**
   - Basement or other windowless indoor room with no HVAC system. **OR**
   - No windows open and no air conditioner or heating in use in a vehicle during travel.

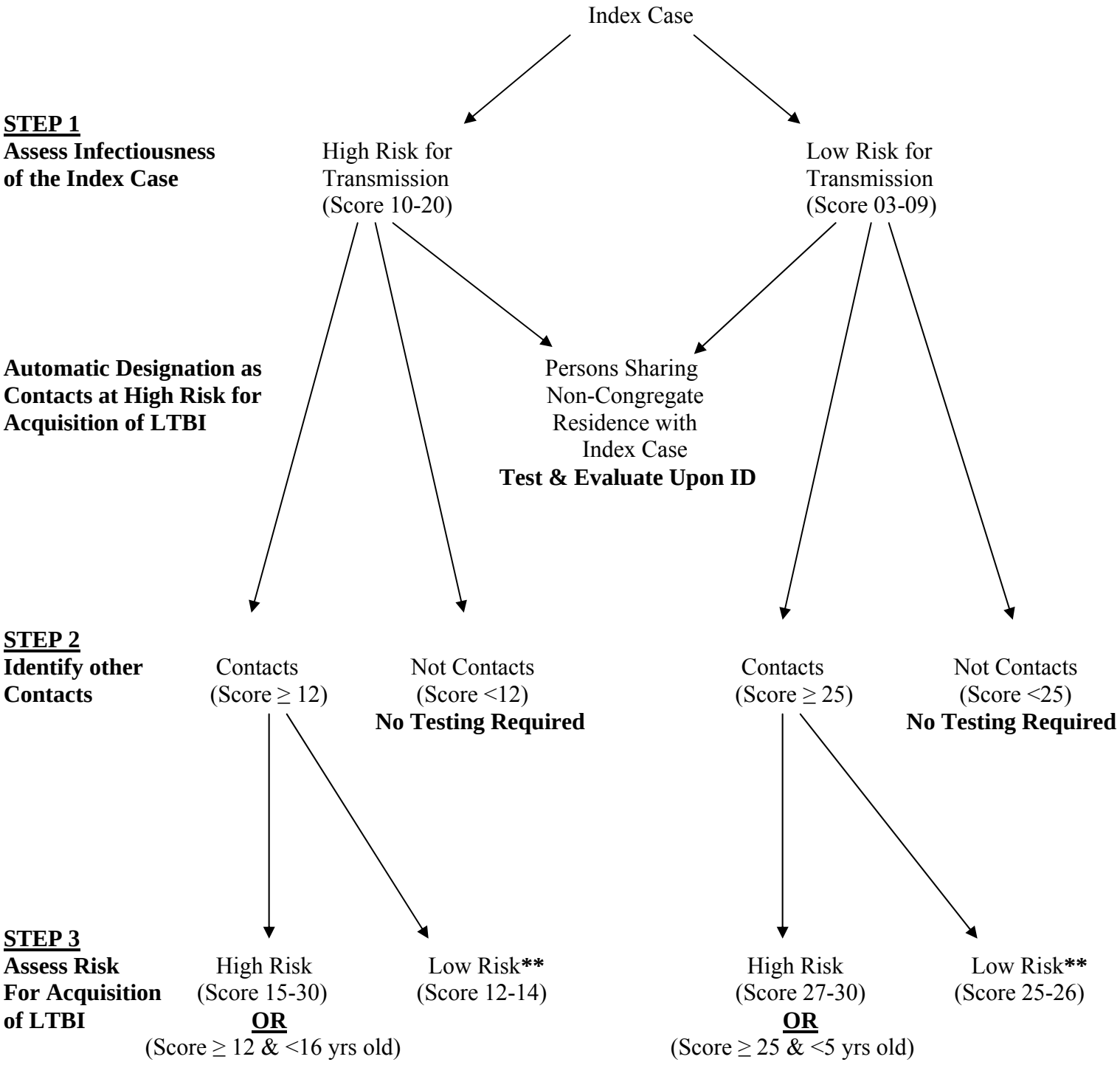
Crowded:
A designation of crowded should **not** generally be assigned to an individual room or closed space larger than 1,500 square feet or to a larger room divided into separate working spaces (such as cubicles in an office space).

A definition of crowded for the purpose of contact investigation would be any individual room or closed space with a routine occupancy level in excess of one person per 30 square feet.

This can be calculated by determining the square footage of the individual room or closed space (length in feet X width in feet), divided by the routine number of occupants. If the result is less than 30 square feet, then the room or space should be considered crowded.

If the definition of crowded is met by the environment in which exposure occurred, this option should be selected regardless of the quality of ventilation. If a room is not crowded by the definition above, only the quality of ventilation should be selected under environmental characteristics.

Exposure Assessment Process



******Test and evaluate **low risk contacts <u>only</u>** when the following is found among high risk contacts:
(1) Documented conversions **<u>OR</u>**
(2) Undiagnosed disease **<u>OR</u>**
(3) LTBI in US born children ≤ 5 yrs old with;

- No history of travel to a high TB incidence country or
- Previous family history of TB

PUBLIC HEALTH INCIDENT
INTERNAL NOTIFICATION

Event: _____

Case #: State _____

Site of Event: _____

Date & Time of event: _____

Human Exposure (describe): _____

Lead Public Health Agency

☐ **Local**

☐ **State** (indicate programs)
- ☐ Public Health Laboratory
- ☐ Environmental/Chemical Laboratory
- ☐ Agriculture Laboratory
- ☐ Environmental & Consumer Health
- ☐ Occupational Health & Injury
- ☐ Communicable Diseases
- ☐ Cancer Epidemiology
- ☐ Other

Other Agencies Involved (check all that apply):
☐ CDC ☐ EMS ☐ Local police ☐ DEP ☐ NJSP ☐ NJPIES
☐ Criminal Justice ☐ Other(s) specify:

Potential media interest (check):
☐ 5 Highly likely ☐ 4 ☐ 3 ☐ 2 ☐ 1 Unlikely

Date and time of Notification:_____
DHSS investigation coordinator: _____
Phone:_____
Notification Completed by: _____
c:\office\incident.new

PERMISSION SLIP FOR TESTING FOR LATENT TB INFECTION

Please complete and return to (name & title) by (date)

_____ My child may be tested by the public health department or school nurse

_____ My child will be tested by the private physician listed below at my expense

Please Print

Child's Name (<18 years old): _____

Parent's or Guardian's Name: _____

Private Physician's Name: _____

Physician's Phone Number: _____

Parent's or Guardian's Signature: _____

Home Phone Number: _____

Work or Cell Phone Number: _____

First Testing Letter

RE: (name of contact exposed in a congregate setting)

The health department has determined that the person named above has been adequately exposed to an index case with suspected or confirmed infectious TB disease at (name of school or congregate setting) to warrant testing to determine if latent TB infection has been transmitted.

If the index case has suspected TB disease and is later confirmed to have active TB, the person indicated above may need a second test to rule out transmission in approximately two (2) months, if the first test is negative. If active TB is subsequently ruled out in the index case, no further testing will be required.

Complete evaluation of contacts to infectious TB disease is required by the New Jersey Administrative Code. There will be **no** exceptions, other than those indicated below. Testing for latent TB infection will be performed free of charge by either the public health department or school nurse (if exposure was in a school). You may choose to have this testing done by a private physician at your expense.

Testing will be available at (place) on (date) from (time) to (time). Should you elect to have testing done by a private physician, written results must be received by (name & title) by (date).

ONLY the results of a Mantoux tuberculin skin test or QuantiFERON®TB Gold test will be accepted as a valid assessment of latent TB infection.

If the test for latent TB infection is positive, a chest x-ray and physician evaluation will be required. If the chest x-ray is normal, treatment may be prescribed.

If the person named above is less than 18 years of age, please sign and return the enclosed permission slip to (person & title) on or before (date).

There will be an educational session at (location) on (date) at (time). Representatives from the local and/or state health department will be present to answer your questions.

Sincerely,

(Signature & title)

Second Testing Letter

RE: (name of contact exposed in a congregate setting)

On (date) you were informed that the person named above was a contact to an index case with suspected or confirmed infectious TB disease. At that time this person was required to have a Mantoux tuberculin skin test or QuantiFERON®TB Gold test. The result of that test was negative for latent TB infection. Subsequently, active TB disease has been confirmed in this index case.

The health department requires that the person named above be retested after a two (2) month period. This is necessary because it may take at least eight (8) weeks after exposure for a contact to develop a positive reaction to either of these tests for latent TB infection.

Complete evaluation of contacts to infectious TB disease is required by the New Jersey Administrative Code. There will be **no** exceptions, except those immunized against measles, mumps, rubella (German measles) or polio in the past six (6) weeks. The testing for latent TB infection will be performed free of charge by either the public health department or school nurse (if exposure was in a school). You may choose to have this testing done by a private physician at your expense.

Testing will be available at (place) on (date) from (time) to (time). Should you elect to have testing done by a private physician, written results must be received by (name & title) by (date).

ONLY the results of a Mantoux tuberculin skin test or QuantiFERON®TB Gold test will be accepted as a valid assessment of latent TB infection.

If the test for latent TB infection is positive, a chest x-ray and physician evaluation will be required. If the chest x-ray is normal, treatment may be prescribed.

If the person named above is less than 18 years of age, please sign and return the enclosed permission slip to (person & title) on or before (date).

Sincerely,

(Signature & title)

General Information Letter

Dear (parent/guardian or exposed adult at a congregate setting):

The public health department has informed us of an index case with suspected or confirmed infectious TB disease has been identified at (name of school or congregate setting). Only those persons in this setting with sufficient exposure to the index case to be at risk for latent TB infection due to this exposure will be required to be tested.

According to the health department's investigation, you or your child (if the exposure occurred in a school setting) were not sufficiently exposed to the index case to warrant testing for latent TB infection at this time. Therefore testing will not be required at this time.

Based on the results of testing for latent TB infection among persons at highest risk for transmission, additional persons at lower risk for infection may be tested in the future. Should you or your child be included among those requiring testing in the future, you will be notified.

An educational session will be held at (place) on (date) at (time). Representatives from the local and/or state health department will be present to answer your questions.

Sincerely.

(Signature and title)

Letterhead

Appreciation Letter

Date:

[Name of Point of Contact at Congregate Setting]
[Name of Congregate Setting]
[Street Address of Congregate Setting]
[City, State & Zip Code]

Dear [Point of Contact at Congregate Setting]:

Thank you for your participation and cooperation in conducting the recent assessment of your facility/institution after exposure to potentially infectious TB disease. Your assistance assured the identification, evaluation and treatment of individuals at risk for acquisition of infection due to this exposure. These activities will result in a reduced burden of TB in the community in the future.

Sincerely,

Letterhead

PUBLIC HEALTH WARNING NOTICE
FOR DIAGNOSTIC EXAMINATION

Patient's Name
Patient's Street Address
City, State & Zip Code

This Public Health Warning Notice is being issued as authorized by the New Jersey Administrative Code, Title 8, Chapter 57, Subchapter 5, Section 10 (N.J.A.C. 8:57-5.10). It is issued due to your failure to report to (clinic, street address, city, state & zip code) as requested for a diagnostic evaluation. The purpose of this evaluation will be to determine the risk your current condition may present to your health and the health of the public.

In order to meet the conditions of this public health warning notice, you must contact the clinic named above at (phone number) within three business days of receipt of this letter to schedule an appointment for a diagnostic evaluation.

Failure to schedule the appointment within the prescribed time limit or to keep the appointment once scheduled will result in the issuance of a Health Officer's Order as authorized under N.J.A.C. 8:57-5.10.

Sincerely,

(Signature)

(Name of nurse case manager)

Letterhead

HEALTH OFFICER ORDER
FOR DIAGNOSTIC EXAMINATION

Patient's Name
Patient's Street Address
City, State & Zip Code

This Health Officer Order is being issued as authorized by the New Jersey Administrative Code, Title 8, Chapter 57, Subchapter 5, Section 10 (N.J.A.C. 8:57-5.10). Despite a public health warning notice issued on (date), you have continued to fail to report to (clinic, street address, city, state & zip code) as requested for a diagnostic evaluation.

The purpose of this evaluation will be to determine the risk your current condition may present to your health and the health of the public.

You are hereby ordered to contact the clinic named above at (phone number) within three business days of receipt of this letter to schedule an appointment for a diagnostic evaluation.

Failure to schedule the appointment within the prescribed time limit or to keep the appointment once scheduled may result in a petition for a court order of commitment for the purpose of a diagnostic evaluation as authorized under N.J.A.C. 8:57-5.13.

You have the right to request a hearing by the Superior Court pursuant to N.J.A.C. 8:57-5.14, but this order shall remain in force until your appeal is ruled on by the court.

Sincerely,

(Signature)

(Name of Health Officer)

CONTACT INVESTIGATION CHECKLIST
Index Case Hospitalized at Diagnosis

Action(s)	Documentation	Done
Report of potentially infectious index case	TB-70 (next action must be taken upon verbal report)	☐
Visit to hospital <u>within 3 working days</u> of index case report for:		
• Medical record review	Chart Audit Tool	☐
• Assign risk (high or low) to index case	Index Case Assessment Form	☐
• First interview	Patient Assessment Form and TB-41	☐
• Notification of necessary precautions	Notification of Infection Control Precautions	☐
Home visit(s) <u>prior to hospital discharge</u> for the purpose of:		
• Address verification for post hospital discharge	Medical record (Notify hospital if invalid or unstable)	☐
• Testing and evaluation contacts sharing the residence with the index case for LTBI	TB-41	☐
• Identification and assessment of risk for acquisition of LTBI by social contacts frequenting the residence of the index case	Exposure Assessment Worksheet	☐
• Identification of uninfected vulnerable persons sharing the residence with the index case	Medical record (Notify hospital if identified)	☐
Clinic visit (if publicly managed) or home visit (if privately managed) <u>within 5 working days</u> of hospital discharge for the purpose of:		
• Second interview	Patient Assessment Form and TB-41	☐
• Clinical assessment and initiation of DOT for index case (if publicly managed)	Medical Record	☐
Expand contact investigation to congregate settings and/or low risk contacts, <u>as warranted</u> (see reverse side)	Exposure Assessment Worksheet and TB-41	☐
Intervention(s) <u>as necessary</u> to complete testing and evaluation of contacts	Public Health Warning Notice for Diagnostic Evaluation and/or Health Officer Order for Diagnostic Evaluation	☐ ☐

CONTACT INVESTIGATION CHECKLIST
Index Case Hospitalized at Diagnosis

Immediately initiate congregate site assessments in:

1. **Child care or schools** serving children <5 years of age whenever the index case is:
   - An adult
   - A child or adolescent with adult-like disease characteristics

   This should occur regardless the risk for transmission.
2. **Schools** serving students ≥ 5 years of age , but <16 years of age whenever the index case is at high risk for transmission
3. **Local jails** whenever the index case is or was incarcerated during the infectious period, regardless risk for transmission
4. **Congregate living facilities** whenever index case was a resident during the infectious period, regardless risk for transmission
5. **Congregate living facilities** whenever index case was an employee during the infectious period and the facility serves a vulnerable resident population, regardless risk for transmission

Besides the circumstances requiring immediate congregate site assessments above, these assessments are justified whenever one or more of the following criteria are met:

1. Additional suspected or confirmed TB cases are identified among contacts sharing a residence with the index case or social contacts , regardless the risk for transmission
2. The rate of infection among contacts sharing a residence with the index case and social contacts is >10 percent for US born contacts and/or 35 percent for foreign-born contacts, regardless the risk for transmission
3. LTBI in any US born child sharing a residence with a foreign-born index case so long as this child has no history of previous exposure to a person with TB or travel outside the US, regardless the risk for transmission
4. No contacts are identified outside the congregate setting, regardless the risk for transmission
5. A child <5 years of age with suspected or confirmed pulmonary or extra-pulmonary TB disease with no potential source case identified in the household or immediate family who participates in a licensed or unlicensed child care service

Expand testing to low risk contacts in any setting whenever:

- Conversion is documented among high risk contacts
- Previously undiagnosed disease is identified among high risk contacts
- LTBI among high risk contacts <5 years of age with no history of travel to high incidence countries and no family history of TB