Tuberculosis (TB) Investigation Guideline

CONTENTS

Investigation Protocol:
  • Investigation Guideline

Investigation Forms / Documentation Worksheets:
  • Latent Tuberculosis Infection and Disease Form (KDHE)
  • Tuberculosis Contact Investigation Form (KDHE)
  • Documentation Checklist

Supporting Material:
  • Sample Letter, Parent Notification
  • Sample Letter, Generic to MD
  • Fact Sheet
This guideline simply outlines information about the management and investigation of TB disease and latent TB infection (LTBI). Many aspects of the process such as contact identification, TB testing, and the treatment guidelines are complex and beyond the scope of this document. For complete information, the user MUST refer to (1) Core Curriculum on Tuberculosis (CDC), and (2) the KDHE Tuberculosis Program.

**Tuberculosis (TB)**
**Disease Management and Investigative Guidelines**

### CASE DEFINITION

**A. Clinical Description for Public Health Surveillance:**
A chronic bacterial infection caused by *Mycobacterium tuberculosis*, characterized pathologically by the formation of granulomas. The most common site of infection is the lung, but other organs may be involved. A case meets the following criteria:
- A positive tuberculin skin test, and
- Other signs and symptoms compatible with tuberculosis (e.g., an abnormal, unstable [i.e., worsening or improving] chest radiographs, or clinical evidence of current disease), and
- Treatment with 2 or more antituberculosis medications, and
- Completed diagnostic evaluation.

**B. Laboratory Criteria for Diagnosis:**
- Isolation of *M. tuberculosis* from a clinical specimen, or
- Demonstration of *M. tuberculosis* from a clinical specimen by nucleic acid amplification test, or
- Demonstration of acid-fast bacilli in a clinical specimen when a culture has not been or cannot be obtained.

**C. Case Classification:**
- Confirmed: A case that meets the clinical case definition or is laboratory confirmed.

**D. Laboratory Tests:**
Isolates must be sent to the State Public Health Laboratory. Mailing Address: Division of Health and Environment Laboratories, Forbes Field, Building # 740, Topeka, KS 66620-0001
- Specimen: Sputum, gastric asparate, blood, CSF, lymph node biopsy, urine, stool.

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1 Use of rapid identification techniques for *M. tuberculosis* (e.g., DNA probes and mycolic acids high-pressure liquid chromatography performed on a culture from a clinical specimen) are acceptable under this criterion.

2 Nucleic acid amplification (NAA) tests must be accompanied by culture for mycobacteria species. However, for surveillance purposes, CDC will accept results obtained from NAA tests approved by the Food and Drug Administration (FDA) and used according to the approved product labeling on the package insert. Current FDA-approved NAA tests are only approved for smear-positive respiratory specimens.
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- Remarks: For additional information and/or questions concerning isolate collection, sample transport and laboratory kits call (785) 296-1620. An online manual of laboratory tests is available at http://www.kdhe.state.ks.us/labs/links.html

E. Bioterrorism Potential:
None.

F. Outbreak Definition:
An increase of ≥ 10% in the incidence of TB within a specific jurisdiction, defined population and/or time period is considered an outbreak. Any clustering of cases by place (e.g., correctional facility, homeless shelter, etc.), person (e.g., cases in individuals sharing the same social network or workplace) and time may also indicate an outbreak and should be investigated with adequate resources allocated to the investigation.

INVESTIGATOR RESPONSIBILITIES
A. Investigation Tasks and Activities:
- Conduct an epidemiological investigation to identify the possible source of infection and to locate additional cases and/or contacts in the community.
- Identify contacts and assure appropriate TB skin testing (TST) has occurred.
  - Test results must be “read” within 48-72 hours after placement.
  - All contacts with a negative test should be retested 10-12 weeks after their last exposure to the case.
- Follow up with case(s) to assure compliance with any isolation orders until they are considered non-infectious.
- Report all confirmed cases to the Bureau of Epidemiology & Disease Prevention, using established methods.
- If the case is lab-confirmed, make sure that an isolate is forwarded to the State Public Health Laboratory.
- Complete and submit the CDC Report Of Verified Case Of Tuberculosis form.

B. Notifications:
- Report by telephone all suspect or confirmed cases to the Tuberculosis Control Program at 877-427-7317.
- Mail or deliver notification letter and/or disease fact sheet to case, contacts and other appropriate individuals or groups (if appropriate and/or requested).
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EPIDEMIOLOGY
The prevalence of TB is higher in low-income intercity areas and among nonwhite populations and ethnic groups. In the United States, a disproportionate number of cases occur among recent immigrants from specific areas of the world (i.e., Asia, Africa and Latin America). Additional risk factors include: HIV, use of immunosuppressive drugs, intravenous drug use, and certain medical conditions, including: Hodgkin’s disease, lymphoma, diabetes mellitus, renal failure and malnutrition. The reactivation of latent infection accounts for a large proportion of cases among the elderly.

DISEASE OVERVIEW
A. Agent:
*Mycobacterium tuberculosis* or, rarely, *M. bovis* are the agents that cause TB. Their unique shape and staining properties give them the name of "acid-fast bacilli."

B. Clinical Description:
Tuberculosis can be either pulmonary (73%) or extrapulmonary (27%). Classic signs and symptoms of pulmonary TB include: a productive cough, weight loss, decreased appetite, malaise, night sweats, fever, hemoptysis (i.e., bloody sputum), and/or weakness. Symptoms associated with extrapulmonary TB are dependent upon the site of the disease.

- **Differential Diagnosis (pulmonary only):** Pulmonary embolism, bronchogenic carcinomas, pneumonia and/or asthma.

C. Reservoirs:
Humans are the primary reservoir; however, in some parts of the world *M. bovis* infected cattle may be a significant reservoir. Although rare, cases have been linked to transmission from non-human primates and other mammals.

D. Mode(s) of Transmission:
Airborne transmission occurs through the inhalation of TB bacilli droplet nuclei that are produced by persons with pulmonary tuberculosis during expiratory efforts, examples include: talking, coughing, singing, or sneezing. Depending upon air currents, the droplet nuclei may remain suspended in the air for several hours and the risk of transmission is dependent upon the length of exposure, the degree of crowding, ventilation, the number of bacilli discharged and virulence of the organisms. Although extremely rare, transmission via mucous membranes or breaks in the skin has been reported. TB may also result from exposure to infected cattle or consumption of unpasteurized dairy products from infected animals.
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**E. Incubation Period:**
Highly variable, ranging from 2-12 weeks from initial infection to development of an immune response that can be measured with a tuberculin skin test (TST). The subsequent risk of pulmonary or extrapulmonary TB is greatest within the first 2 years after infection and latent infection may persist for life.

**F. Period of Communicability:**
Persons that are suspected or confirmed with active TB should be considered infectious if they are not receiving therapy, have just started therapy, or have a poor clinical response to therapy. Cases are no longer considered infectious when the following criteria are met:
- Cases have been receiving adequate therapy for at least 2 weeks, and
- Cases have had a favorable clinical response to therapy, and
- Cases have had 3 consecutive negative sputum smear results from sputum collected on different days.

**G. Susceptibility and Resistance:**
The risk of infection is directly related to the degree of exposure. The risk of developing disease is highest in children < 3 years of age, lowest in later childhood, and increases again among adolescents, young adults, the very old and the immunosuppressed. The reactivation of latent infection accounts for a large proportion of TB disease cases among the elderly.

**H. Treatment:**
Directly observed therapy (DOT) is the recommended method for treatment. Individuals should be given prompt treatment with the appropriate combination of antimicrobial drugs and regular monitoring of sputum smears. For drug susceptible disease, a 6-month course of therapy including: isoniazid (INH), rifampin (RIF), pyrazinamide (PZA) and Ethambutol (EMB) or Streptomycin (SM) is the standard of care for the first 2-months followed by INH and RIF for 4 months. When drug susceptibility results are available a specific drug regimen can be chosen for delivery.

**STANDARD CASE INVESTIGATION AND CONTROL METHODS**

Standard investigation activities include the following: 1) Confirmation of the diagnoses (i.e., case definition), 2) Collection of relevant demographic and clinical data (e.g., age, sex, disease syndromes and/or symptoms), 3) Determination of the setting (e.g., community, hospital, daycare or other facility), and 4) Investigation of possible epidemiologic links among cases (e.g., cluster, household, co-workers, etc). This can be accomplished by completing the appropriate sections of the CDC Report Of Verified Case Of

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3 LTBI investigations should only occur if the case is a child or the LTBI is a newly documented case when there is history of documented negative tests.
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Tuberculosis form. Most of the information can be obtained from the case person, healthcare provider and/or the medical record. The investigator may want to also review previous reported cases in the region and/or state. Additional investigation activities include:

A. Identify Potential Source of Infection:
To help identify the source of the infection, the investigator should focus their investigation within the incubation period of tuberculosis (2-12 weeks) and focus their investigation on the following potential source(s) of infection.
- History of exposure(s) to active TB.
- Travel history, with dates of exit from and reentry into the United States and dates of travel to other counties and/or states.
- Case finding and transmission setting: identify possible illnesses among household members, neighbors, schoolmates, etc. and possible transmission setting(s).
- Occupation (e.g., healthcare worker, daycare worker, etc.) and work site (i.e., address).

B. Identify Potential Exposed Individuals / Populations (Contacts):
Contact tracing often follows a pattern of concentric circles beginning with the innermost circle defined as family and/or household members. If there is evidence of transmission within this circle the investigator should increase their scope of investigation into the next larger circle that includes: close friends, co-workers, and other “close” social contacts. The process is repeated until an outer limit of transmission has been established. Be sure to consider first responders and other healthcare workers in your investigation (if necessary).
- **First Circle or Close Contacts:**
  - Investigate all suspected cases; don’t wait for lab results before beginning investigation.
  - Obtain a medical history and place a TST unless there is a documented positive skin test in the past or a history of treatment for TB. Adults should be tested within 2 weeks, children within 1 week. All contacts with a negative test should be retested 10-12 weeks after their last exposure to the case.
  - If the index case has a cough, positive smear/ culture, or pulmonary cavitation on x-ray, then all school, daycare and work contacts or any persons who may have had “significant” social contact (e.g., church members, social clubs, bars, etc.) with the case should be evaluated.

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4 Defined as family and/or household members.
5 Depending upon the amount of time the case spends within these settings these contacts could be considered in the first or second circle.
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- Proceed to next circle if any converters are identified or if the prevalence of TB infection exceeds the norm for this group.

**Second Circle or Social Contacts:**
- Obtain a medical history and place a TST unless there is a documented positive skin test in the past or a history of treatment for TB. Adults should be tested within 2 weeks, children within 1 week. All contacts with a negative test should be retested 10-12 weeks after their last exposure to the case.
- Proceed to next circle if any converters are identified or if the prevalence of TB infection exceeds the norm for this group.

**Ending Contact Investigations:**
When testing reveals that all of the contacts within a “circle” are negative then testing of identified contacts in the next larger “circle” is usually not warranted. However, it is important that the investigator does not stop until they are satisfied that an appropriate effort has been made to locate all potential contacts.

### C. Isolation, Work and Daycare Restrictions:
- Cases should be advised to wear a mask when around other people and should stay home whenever possible. Unnecessary visitors should be avoided; if a visitor does enter the home they should be informed of the risk and should be offered a N-95 mask. These restrictions may be lifted when the case is no longer considered infectious. Cases are no longer considered infectious when the following criteria are met:
  - Cases have been receiving adequate therapy for at least 2 weeks, and
  - Cases have had a favorable clinical response to therapy, and
  - Cases have had 3 consecutive negative sputum smear results from sputum collected on different days.
- Adult case persons should be excluded from schools, daycares and isolated when in hospitals, nursing homes or residential facilities. These restrictions may be lifted when the case is no longer considered infectious. Child case persons are rarely considered infections and need not to be excluded from daily activities.
- Persons with communicable TB that do not comply with treatment requirements may be quarantined by the local health officer. However, quarantine is a method of last resort and should not to be undertaken without first consulting with the KDHE TB program.

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6 Defined as neighbors, with whom the case has regular contact, drinking partners/drug users, co-workers, schoolmates and visitors to the home.
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D. Follow-up of Cases:
- Directly Observed Therapy (DOT) is the standard of care for persons with active TB to help assure compliance with their medication regimen. DOT may be administered in the field, home, healthcare facility or any other place convenient for the case.
- The local health department is responsible for monitoring the treatment of all cases, regardless of whether DOT is being provided by the health department or by a private provider. If treatment is being provided by a private provider, the health department must maintain regular contact and, if necessary, assist them with TB issues, obtaining pertinent information from them and continue to report any required case information to the state health department.

E. Protection of Contacts:
Contacts with a negative TST should be retested 10-12 weeks after their last exposure to an infectious case. Converters should be classified as a LTBI case, reported to KDHE and evaluated for preventive therapy.

F. Environmental Measures:
Engineering controls may be used to help reduce the concentration of infectious droplet nuclei within buildings. Examples include: controlling the direction of airflow (i.e., negative pressure rooms), diluting and/or removing potentially contaminated air through increased ventilation, and cleaning the air through high efficiency air filtration and/or ultraviolet irradiation.

G. Education:
- Teach the case to cover both nose and mouth when coughing or sneezing and to wear a mask when in contact with others until they are considered non-infectious.
- The case and their household members should be instructed about TB including: signs and symptoms, modes of transmission and the proper use of respiratory protection devices (if applicable).
- Emphasize the importance of taking their medication and make sure they understand that:
  - DOT is the standard of care for therapy.
  - Medication may be necessary for a long period of time (e.g., ≥ 6 months) and must be taken even if their symptoms improve.
  - Drug resistance may develop if their medications are not taken as directed.
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MANAGING SPECIAL SITUATIONS

A. Reported Incidence Is Higher than Usual/Outbreak Suspected:
If you suspect an outbreak, consult with the epidemiologist on call at the KDHE. They can help determine a course of action to prevent further cases and can perform surveillance for cases that may cross county lines that would be difficult to detect at the local level.

ADDITIONAL INFORMATION / REFERENCES

- Oregon Health Services Website. Available at http://www.ohd.hr.state.or.us
- Commonwealth of Massachusetts, Department of Public Health Website. Available at http://www.state.ma.us/dph/
- CDC Website. Available at http://www.cdc.gov/health/default.htm
## LATENT TUBERCULOSIS INFECTION AND DISEASE FORM

### MEDICAL HISTORY (Mark all that apply)

- Other immunosuppressed patients
- Organ Transplant
- Corticosteroid therapy
- End-stage renal disease
- Silicosis
- Diabetes mellitus
- Cancer of the head and neck
- Chronic malabsorption
- Immunosuppressive therapy
- Hematologic and reticuloendothelial diseases
- Intestinal bypass or gastrectomy

### RISK CRITERIA USED IN ESTABLISHING THE SIGNIFICANCE OF THE PPD SKIN TEST REACTION

<table>
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<tr>
<th>5 mm or more</th>
<th>10 mm or more</th>
<th>15 mm or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV Infection</td>
<td>Recent arrivals from high prevalence countries</td>
<td>No known risk factors</td>
</tr>
<tr>
<td>Close Contact to a TB case</td>
<td>Injection Drug Users</td>
<td></td>
</tr>
<tr>
<td>Fibrotic changes on CXR</td>
<td>Residents and employees of high-risk congregate settings*</td>
<td></td>
</tr>
<tr>
<td>Consistent with old TB</td>
<td>Mycobacteriology laboratory personnel</td>
<td></td>
</tr>
<tr>
<td>Organ Transplant</td>
<td>Persons with clinical conditions that make them high-risk**</td>
<td></td>
</tr>
<tr>
<td>Other immunosuppressed patients</td>
<td>Children &lt;4 years of age, or children and adolescents exposed to adults in high-risk categories</td>
<td></td>
</tr>
</tbody>
</table>

*Health Occupations, or residential settings that increase the risk of TB include:
- Health Care Worker
- Child care worker
- Homeless Shelter
- Rehabilitation Center
- Long Term Care Facility
- Correctional Facility
- Mycobacteriology Lab
- Other

**Medical conditions that increase the risk of TB include:
- Diabetes mellitus
- Corticosteroid therapy
- Silicosis
- Immunosuppressive therapy
- End-stage renal disease
- Hematologic and reticuloendothelial diseases
- Cancer of the head and neck
- Chronic malabsorption
- Intestinal bypass or gastrectomy

Contact investigations should be performed for positive reactions in children under 10. This is strongly recommended to determine if an undiagnosed, active case of TB was responsible for the child’s infection and/or disease. The contact investigation should focus on adults with frequent contact to the child.

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**Form Created 11/05/2002**
Name: ____________________________________________ Date of Birth: __________________

Patient's Wt. __________ lbs. _________ kg. Drug Allergies: ____ No ______ Yes __________________________

Current Medications:____________________________________________________________________________________

Discussed TB FACTS: ____ Yes ____ No Discussed medication's potential side effects or adverse effects ____ Yes ____ No

Drug Precautions: ____ None ____ Alcohol or drug abuse in past year ____ Currently on medication that may cause an interaction

Contraindications: ____ No ____________________________ ____ History of Chronic Liver Disease ____ At risk for peripheral neuropathy

Pregnant or breast feeding: ____ No ____ Yes (Method) ____ History of adv. reaction to TB medications

Birth Control (Females only): ____ No ______ Yes (Method) ______________________________________________________________________________________________

Medications have been prescribed by: ________________________________________________________________________________

(Physician’s Name) ____________________________ (Telephone Number) ____________________________

Physician monitoring progress of client: ______________________________________________________________________________________

(Physician’s Name) ____________________________ (Telephone Number) ____________________________

MEDICATIONS PRESCRIBED FOR LTBI: _________ 6 months _________ 9 months _________ 12 months _________ No meds prescribed (detail in notes)

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<th>Frequency</th>
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<td>B6</td>
<td>Mg</td>
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<tr>
<td></td>
<td></td>
<td>Daily</td>
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</table>

Notes:

Patients on therapy for Latent TB Infection (LTBI) should be monitored monthly for adverse reactions. Under no circumstances should more than one month of medicine be dispensed to the patient. (Complete additional form: Guidelines for Monitoring Patients on INH)

MEDICATIONS PRESCRIBED FOR SUSPECT OR ACTIVE TB DISEASE:

<table>
<thead>
<tr>
<th>Therapeutic Group</th>
<th>Dosage*</th>
<th>Frequency**</th>
<th>Therapeutic Group</th>
<th>Dosage*</th>
<th>Frequency**</th>
<th>Therapeutic Group</th>
<th>Dosage*</th>
<th>Frequency**</th>
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<td>Vitamin B6</td>
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<td>mg</td>
<td></td>
<td>Vitamin B6</td>
<td>mg</td>
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</tr>
</tbody>
</table>

Date Started: __________/_________/__________ Date Started: __________/_________/__________ Date Started: __________/__________/__________

Date Ended: __________/__________/__________ Date Ended: __________/__________/__________ Date Ended: __________/__________/__________

Notes:

* Total dosage in milligrams ** Frequency of medication dosages (daily, twice weekly, thrice weekly) (Document doses given on a Medication Administration Record)

Patients on therapy for TB disease should be monitored daily for adverse reactions and medications are given by directly observed therapy (DOT).

Location of Direct Observed Therapy ________ Health Department ________ Client’s home ________ Other ____________________________

Name of person(s) providing DOT ______________________________________________________________________________________

This form completed by: ____________________________________________ Phone: __________________

(Print clearly)

Agency: ____________________________________________ Today’s Date: ____________________

Send Form to:  Kansas Department of Health and Environment
Tuberculosis Control Program
1000 SW Jackson, Ste. 210
Topeka, KS 66612-1274

Contact Information:
Phone: 785-296-5589
Fax: 785-291-3732

Form Created 11/05/2002
TUBERCULOSIS CONTACT INVESTIGATION FORM

Source Case: ____________________________________________ Date of Birth: ____/____/____ Hawk # ______________

Smear Positive

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
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</table>

Productive Cough

<table>
<thead>
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<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>9</td>
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</tbody>
</table>

If yes, onset date: ____/____/____

Pulmonary or Cavitary Disease

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
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</table>

Laryngeal TB

<table>
<thead>
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<tr>
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</table>

Extrapulmonary TB

<table>
<thead>
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<th>Yes</th>
<th>No</th>
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<tr>
<td>9</td>
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</tbody>
</table>

Site ____________________________________________________________

Place of Employment: _______________________________________________________________________________________

Interviewer: _______________________________________________________________________________________________

Date of Interview: ____/____/____

Agency: ___________________________________________________________________________________________________

Referred from: _____________________________________________________________________________________________

Name Information of the person exposed

Last Name ___________________________________  First Name ________________________________  MI ___

Date of Birth _____/_____/_____ (If this person is less than 5 years of age, chemotherapy may need to be initiated promptly)

Sex: 9 Male 9 Female

Occupation ________________________________________

Day Phone (_______)_______________________________ Ext. __________

Evening Phone (_______)_________________________ Ext. __________

Contacting Information

Parent/Guardian/Other

Last Name ___________________________________  First Name ________________________________  MI ___

Day Phone (_______)__________________________  Ext. __________

Evening Phone (_______)_______________________  Ext. __________

Latest Address Information

Address 1 __________________________________________________________________________________________________

Address 2 __________________________________________________________________________________________________

Zip Code ___________________________________________________________________________________________________

City   ___________________________________________________________________________________________________

County ____________________________________________________________________________________________________

Race

___ American Indian or Alaskan Native

___ Native Hawaiian or Other Pacific Islander

___ Asian

___ Race, not otherwise specified

___ Black or African American

___ White

Ethnicity

___ Ethnicity not otherwise specified

___ Hispanic or Latino

___ Not Hispanic or Latino

Type of Contact

☐ Household

☐ Other

Risk Status

☐ Close

☐ Casual
Client’s Name: ___________________________________________________ Date of Birth: _______/_______/_______

Status of Patient Notification
- ___ All attempts to notify were unsuccessful
- ___ Left jurisdiction, information forwarded
- ___ Left jurisdiction, new address unknown
- ___ Notice by phone or in person by Local Health Department
- ___ Notice mailed by Local Health Department
- ___ Notice mailed by Private MD
- ___ Notified by phone or in person by private MD
- ___ Notified by source case or other contact
- ___ Reported self to local health department

Evaluation by
- ___ Local Health Department
- ___ No evaluation to date
- ___ Other
- ___ Private Physician’s office

Evaluation Status
- ___ Evaluation completed
- ___ Evaluation in progress
- ___ Evaluation initiated, never completed, chart closed
- ___ Evaluation not initiated, no response by patient
- ___ Evaluation not initiated, patient refused
- ___ Evaluation not initiated, unable to locate
- ___ No evaluation required for this disease

Infection/Disease Status
- ___ Disease confirmed
- ___ Infection confirmed
- ___ Not infected/diseased to date
- ___ Status can not be determined

Prophylactic treatment or Post-exposure Prophylaxis Status (PT/PEP)
- ___ No PT/PEP to date
- ___ Not applicable
- ___ PT/PEP completed
- ___ PT/PEP Rx’d and treatment continues
- ___ PT/PEP Rx’d discontinued by physician
- ___ PT/PEP Rx’d discontinued, pregnancy
- ___ PT/PEP Rx’d, discontinued, adverse reaction to medications
- ___ PT/PEP Rx’d, discontinued, patient non-compliance
- ___ PT/PEP Rx’d, patient died during treatment
- ___ PT/PEP Rx’d, patient moved during treatment
- ___ PT/PEP Rx’d, patient refused treatment

First TB Skin Test
Date Planted Date Read MM
____/____/____  ____/____/____ ____________

10-12 weeks TB Skin Test
Date Planted Date Read MM
____/____/____  ____/____/____ ____________

Other Comments:
__________________________________________________________________________________________________________
__________________________________________________________________________________________________________
__________________________________________________________________________________________________________
__________________________________________________________________________________________________________
__________________________________________________________________________________________________________

11/10/2002
# Tuberculosis Investigation and Documentation Checklist

<table>
<thead>
<tr>
<th>TASK</th>
<th>DATE</th>
<th>INITIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Received:</td>
<td><strong><strong>/</strong></strong></td>
<td>________</td>
</tr>
<tr>
<td>Assigned to Investigator:</td>
<td><strong><strong>/</strong></strong></td>
<td>________</td>
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<tr>
<td>Reported to State Surveillance System:</td>
<td><strong><strong>/</strong></strong></td>
<td>________</td>
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<tr>
<td>Met Case Definition:</td>
<td><strong><strong>/</strong></strong></td>
<td>________</td>
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<tr>
<td>□ Yes  □ No</td>
<td>________</td>
<td></td>
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<tr>
<td>Biologic Sample to State Laboratory:</td>
<td><strong><strong>/</strong></strong></td>
<td>________</td>
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<tr>
<td>□ Yes  □ No</td>
<td>________</td>
<td></td>
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<tr>
<td>Case Interviewed:</td>
<td><strong><strong>/</strong></strong></td>
<td>________</td>
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<tr>
<td>MOGE: □ Yes  □ No  Reason:</td>
<td>________</td>
<td></td>
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<tr>
<td>Contacts Identified and/or Interviewed:</td>
<td><strong><strong>/</strong></strong></td>
<td>________</td>
</tr>
<tr>
<td>□ Yes  □ No □ None</td>
<td>________</td>
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<tr>
<td>If Yes, Name(s):</td>
<td>____________________________</td>
<td></td>
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<td></td>
<td>____________________________</td>
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</tbody>
</table>

| 1<sup>st</sup> TST Administered (Contacts): | ____/____  | ________ |
| □ Yes #:____  □ No #:________             | ________ |
| TST Read:                                 | ____/____  | ________ |
| □ Yes #:____  □ No #:________             | ________ |
| Pos: #_____  Neg: #_____                  | ________ |
| Positive Result Names:                    | ____________________________ |
| Missed TST Reading Names:                 | ____________________________ |

| 2<sup>nd</sup> TST Administered (Contacts): | ____/____  | ________ |
| □ Yes #:____  □ No #:________             | ________ |
| TST Read:                                 | ____/____  | ________ |
| □ Yes #:____  □ No #:________             | ________ |
| Pos: #_____  Neg: #_____                  | ________ |
| Positive Result Names:                    | ____________________________ |
| Missed TST Reading Names:                 | ____________________________ |

Letter and Information Sheet Sent:   ____/____/____   ________
Completed Investigation Worksheet:   ____/____/____   ________
Case Closed and Filed:     ____/_ ___/____ ________

Case Name: ____________________________________   Number: ________
Principal Investigator:________________________   Date: ____/____/____
Dear Parent:

A person who works at ______________________ has been recently diagnosed as having tuberculosis (TB). Tuberculosis is a serious bacterial infection of the lungs that is spread through the air when a person with TB coughs, sneezes, shouts, talks, or sings. It can be effectively treated with antibiotics.

Public Health Nurses from the health department will be giving tuberculosis skin tests to students identified as having close contact with the person diagnosed with TB. This will be done on _____________ from __a.m. to __ p.m. The Public Health Nurses will return to the school on _____________ from __a.m. to __ p.m. to check the results of the testing. This check must be done to determine whether your child is positive or negative for TB infection. If you prefer to have your child tested by your own medical provider, this must be done the week of _____________ with the results of this test provided to the health department the week of _____________. If your child is not tested and/or the results are not provided, your child may be excluded from school. To allow your child to be tested by the Public Health Nurses you must sign this letter and return it to the school by _____________.

If your child has had a positive TB skin test or has been treated for TB in the past, please provide us with that information and arrangements will need to be made for further examinations, which may include a chest x-ray.

Sincerely,

[Signature]

Investigator Name, Title
Phone #
Address Line 1
Address Line 2
City, State Zip Code

I have read the above letter and understand the information provided. I give my consent for my child ______________________ to be skin tested for tuberculosis infection by the Public Health Nurses from the health department.
Date: ___________________

Dear: ___________________,

I am writing in regards to some recent laboratory test results that you should have received. I work with the Local Health Department and as part of my job I provide information and answer questions about certain diseases that are reportable to us. * I would like to speak to you about your laboratory tests and provide information to you as well as to obtain some additional information about your results. Everything we receive from you or your healthcare provider is STRICTLY CONFIDENTIAL. The purpose for collecting this information is to educate patients and to collect information for public health planning and support our disease prevention activities.

Please contact me at your earliest convenience so that we may discuss this matter further. If your health care provider has not yet discussed this with you, I would encourage you to make an appointment or call them as soon as possible.

I look forward to discussing this matter with you and will be happy to answer any questions that you may have regarding this investigation at that time. My telephone number is _________________. Thank you in advance for your assistance.

Sincerely,

Investigator Name, Title
Phone #
Address Line 1
Address Line 2
City, State Zip Code

*The Kansas Department of Health and Environment (KDHE) has the authority to define what diseases are of public health importance and to require the reporting of such diseases. Under this authority KDHE has established regulations making certain diseases reportable (K.S.A. 65-118 and K.S.A. 65-128, and amendments thereto). These regulations outline reporting requirements and control measures that apply to both confirmed cases of such diseases and contacts of confirmed cases. Local health departments are required to collect information for the KDHE and implement control measures.
What is tuberculosis?
Tuberculosis (TB) is an infectious disease caused by the bacteria *Mycobacterium tuberculosis*. It most often affects the lungs (known as pulmonary tuberculosis), but may occur anywhere in the body (known as extrapulmonary tuberculosis). TB is often classified as active TB disease or latent TB infection (LTBI). Active TB cases occur when the *M. tuberculosis* overcomes a person’s immune system and begin to multiply; this usually results in symptoms consistent with TB. Persons that are infected with *M. tuberculosis* but do not have active TB are referred to as having a latent TB infection (LTBI). Individuals with LTBI cannot spread TB to other people. This fact sheet focuses on active TB disease.

What are the symptoms?
Symptoms associated with active TB include: feeling sick or weak, weight loss, fever, and/or night sweats. The symptoms of pulmonary TB include: a productive cough, chest pain, and/or coughing up blood. Symptoms of extrapulmonary TB depend on the part of the body that is affected.

How is tuberculosis spread?
TB is spread from person-to-person through the air. The bacteria must be inhaled in order for infection to occur. Examples of persons most likely to become infected with TB include: those who are living, working or spending a lot of time with a person who has active TB. It is not spread by casual contact such as kissing or sharing food or eating utensils.

Who gets tuberculosis?
Anyone can get TB infection if they inhale air that contains *M. tuberculosis*; however, individuals that have HIV, use immunosuppressive drugs or abuse intravenous drugs or have certain medical conditions including: Hodgkin’s disease, lymphoma, diabetes mellitus, renal failure and malnutrition may be at increase risk of acquiring TB.

How is it diagnosed?
The Mantoux Tuberculin Skin Test (TST) detects TB infection. A healthcare worker administers the TST on a person’s arm. Within 2-3 days after the test, a healthcare worker checks the tested area for a reaction. The test outcome (positive or negative) depends the size of the reaction and the person's risk factors for TB. Additional tests, such as a chest X-ray and sputum sample are needed to see whether the person has TB.
How is tuberculosis treated?
Both active TB and LTBI can be cured. Active TB is usually treated for 6-9 months with multiple drugs. Local health department staff meets regularly with people who have active TB to ensure that they take their medications. This is called directly observed therapy or DOT and it is the recommended treatment method in the United States.

How can you prevent tuberculosis?
If you think you have been around someone who has active TB, you should go to your health care provider or local health department for an evaluation. If you are prescribed preventative medications, it is very important that they are taken exactly as prescribed. The best way to prevent TB is to completely treat people who have active disease.

Where can I get more information?
- Your Local Health Department
- Kansas Department of Health and Environment, Epidemiologic Services Section (877) 427-7317
- http://www.cdc.gov/health/default.htm
- Your doctor, nurse, or local health center

This fact sheet is for information only and is not intended for self-diagnosis or as a substitute for consultation. If you have any questions about the disease described above or think that you may have an infection, consult with your healthcare provider. This fact sheet is based on the Centers for Disease Control and Prevention’s Health and Safety topic fact sheets.