

TB Contact Investigation Guideline	1
I. Purpose:	1
II. Terms:.....	1
III. Overview	3
IV. Steps in a contact investigation:	3
A. Medical record review of the Index Patient.....	3
B. Index Patient Interview	3
C. Identify Contacts.....	4
D. Prioritize Contacts	4
E. Evaluate Contacts	5
F. Treat eligible contacts.....	7
G. Decision to expand testing	7
V. Forms and Reporting	7
A. "TB Contact Investigation Form" MSRM 140301.02.1	7
VI. References	8
VII. Action.....	9
Referenced Forms.....	10
Attachments	10

Section-14 Medical Services Resource Manual	MSRM-140301- 02	Page: 1	Effective Date: 12/13/11
TB Contact Investigation Guideline	ACA Standards: 4-4354M , 4-ACRS-4C-08		
Donald Sutmilller, DO, Chief Medical Officer Oklahoma Department of Corrections		Signature on File	

TB Contact Investigation Guideline

I. Purpose:

The intent of this guideline is to ensure appropriate and timely identification, evaluation, and treatment of persons exposed to tuberculosis (4-ACRS-4C-08, 4-4354M).

II. Terms:

- A. Close Contact – A person who had prolonged, frequent, or intense contact with a person with infectious TB disease. Close contacts are more likely to become infected with *M. tuberculosis* than contacts that see the patient less often.
- B. Concentric Circle Approach – A method of evaluating contacts in order of their exposure time (close vs. other-than-close) and their risk (high, medium, or low priority). Close contacts and contacts at high risk of developing TB disease are tested before other-than-close contacts and those with no risk factors for developing active TB disease.
- C. Contact Investigation – A procedure for identifying people exposed to someone with infectious TB, evaluating them for TB disease and latent TB infection (LTBI), and providing appropriate treatment.

- D. Contacts – People with significant exposure to someone with infectious TB disease.
- E. Exposure to TB – Spending time indoors with or near someone who has infectious TB disease.
- F. Field Investigation – Visiting the patient’s residence, workplace, and other places where the patient spent time while infectious.
- G. High-priority Contacts – Contacts who are at most risk for TB infection or disease.
- H. High-risk Contacts – Contacts (close or other-than-close) who are at a particularly high risk of developing TB disease if they become infected with TB.
- I. Index Patient – A person with suspected or confirmed TB disease who is the initial case reported to the health department.
- J. Infection Rate – The percentage of contacts with similar amounts of exposure that have a newly identified positive tuberculin skin test (TST) reaction (≥ 5 mm of induration).
- K. Latent TB Infection (LTBI) – TB infection or reactor. Persons with LTBI have the TB bacteria in their body but do not have TB disease and are not infectious. The only indication of LTBI will be a significant reaction to the TST.
- L. Other-than-close Contacts – Contacts with less intense, less frequent, or shorter durations of contact to the TB patient than close contacts.
- M. Period of infectiousness – Time period during which the person with TB disease is capable of transmitting *M. tuberculosis* to others, usually estimated by determining the date of onset of the patient’s symptoms (especially coughing). OSDH guidelines: For patients who have a positive sputum smear and cavitary disease the infectious period begins 12 weeks prior to symptom cluster onset or first positive finding consistent with TB disease (whichever is longer). For patients who have a negative sputum smear and no cavitary disease the infectious period begins 4 weeks prior to the date of diagnosis. The infectious period ends when the patient has received at least 2 weeks of appropriate medications have shown a clinical response to the treatment, AND they have had 3 consecutive negative sputum smear results from sputum collected on different days.
- N. Secondary Case – Contact who has developed TB disease as a result of transmission from an index patient.
- O. Skin Test Conversion for Contacts – TST result that is ≥ 5 mm performed 12 weeks after the last exposure to the index patient.

- P. Window Period – 12 weeks. From the time a person is exposed to infectious TB it can take up to 12 weeks to develop a significant reaction ($\geq 5\text{mm}$).

III. Overview

A person with active TB disease is called the index patient. People exposed to an index patient are called contacts. The risk to the exposed person will depend on the environment, duration, proximity, and intensity of the time spent with the index patient.

TB disease is 75 times higher among contacts than among the general population. The contact investigation will initially focus on identifying any contacts that may already have active TB as a result of exposure to a new case. Data indicate seven to eight cases of TB disease are found for every 1000 contacts evaluated. Some contacts develop TB disease before the contact investigation begins.

It is also important to identify contacts that have become infected with TB and are in need of treatment to prevent progression to TB disease. Contacts are at high risk of having become infected with TB and, if infected, are at an increased risk of progressing on to TB disease. On average about 20% of contacts are found to have TB infection, but some contact investigations show as many as 80% - 100% of close contacts may be infected. A person has about a 5% risk of developing TB disease within 2 years of a new infection and 5% during the rest of their lifetime. HIV is the leading risk factor for developing active TB after becoming infected with TB.

IV. Steps in a contact investigation:

A. Healthcare record review of the Index Patient

The healthcare record review is used to determine or confirm the site of TB disease, infectiousness, lab results, signs and symptoms of TB, x-ray interpretations, medications and dates begun, medical history, TB skin test results, and TB risk factors. Information obtained from the medical record review is used to complete the "Tuberculosis Summary Record Opening Interchange" in the Electronic Health Record (EHR).

B. Index Patient Interview

The patient interview should be conducted within 3 days of the diagnosis of TB disease. The purpose of the patient interview is to inform the patient of the diagnosis, provide education to the patient about tuberculosis, their medication regimen, frequency of lab tests, signs and symptoms of medication toxicity to report, length of treatment, and to collect additional medical information. Information gathered during the medical record review is reviewed and verified with the patient. The patient will be asked

to describe their symptoms of TB and dates of onset. The patient will be asked where they were (home, friends, coworkers, gatherings, appointments, work and work areas, and local jails) during their infectious period and to give specific demographic and locating information for each place and person they can name. Include all places the patient has been or contacts they can identify during their infectious period even if it predates their incarceration. The index patient will also be questioned about where, when, and by whom (s)he may have been exposed to TB.

C. Identify Contacts

The index patient identifies some contacts. The index patient may also identify places they have been during their infectious period such as county jails and homes of friends or relatives that may need evaluating for contacts. Locating information on contacts and environments that are outside the DOC is forwarded to the OSDH on the "TB Contact Investigation Form" MSRM 140301.02.1.

Employee and offender contacts will have their names and locating information (for employees) added to the "TB Contact Investigation Form" MSRM 140301.02.1

For offenders or employee contacts that are at other facilities, send the following information to their current facility's Infection Control Nurse: Name of the contact and DOC number (if an inmate), and the infectious period of the index patient. The current facility's Infection Control Nurse is responsible for ensuring the appropriate screening is performed on these contacts and reporting the results back to the facility conducting the contact investigation.

For all identified non-DOC contacts (released offenders, former employees, and visitors), and DOC employees ensure locating information is included on the "TB Contact Investigation Form" MSRM 140301.02.1. This information will be used by the OSDH to locate and evaluate these people or places.

D. Prioritize Contacts

Contacts are prioritized as high, medium, or low risk, and as close or other-than-close. The focus will be on the high and medium risk and close contacts, initially, using the concentric circle approach. Focus on contacts most likely to have become infected by having spent more time with the index offender in high-risk environments, and those who have a greater risk of developing TB disease if infected. Highest priority should be given to cellmates, direct care staff, contacts who are HIV infected or immunosuppressed, and people who have spent more than 8 hours in a small space or vehicle with the index offender. Medium priority contacts are those who have spent more than 25 hours per month in a larger room such as a classroom, warehouse, gymnasium, or auditorium. This

information is added to the “TB Contact Investigation Form” MSRM 140301.02.1.

E. Evaluate Contacts

1. Offender

All offender contacts will complete a “Tuberculosis Questionnaire” in EHR. According to the CDC, high and medium risk and close contacts are to be evaluated within 7 days of the diagnosis of TB disease of the index offender. Interview the contact to obtain their medical history pertinent to TB; chronic illnesses, medications, prior treatment for TB disease or LTBI, prior skin testing with dates and results, symptoms of TB. All offender contacts will receive education about the increased risk of TB infection and disease related to a recent exposure and will receive instructions regarding signs and symptoms of TB to report to medical providers. Participation in the contact investigation by identified contacts is mandatory.

Only offenders currently residing in the DOC are evaluated by DOC medical staff. All former offenders (released offenders, those on probation/parole) will be reported to the OSDH on the “TB Contact Investigation Form” MSRM 140301.02.1, with the most current locating information included.

Offenders with signs or symptoms of TB, regardless of TST result, will be immediately referred to a DOC medical provider to be evaluated for isolation.

Offenders with documentation of a previous positive TST will be evaluated by completing a “Tuberculosis Questionnaire” DOC in EHR. All other offenders will have a TST administered according to the “Tuberculin Skin Test Guideline” MSRM 140301.03. All contacts will be educated about the signs and symptoms of TB to report to medical services if, at any time, they experience signs or symptoms. If the initial TST is interpreted as negative (< 5mm of induration), the offender will receive a second TST at least 12 weeks after their last exposure to the index offender.

If an offender develops a positive TST (\geq 5mm of induration) they will be evaluated for signs or symptoms again to determine the need for isolation. They will also have a chest x-ray taken and sent to the OSDH with the “Tuberculosis Summary Record Opening Interchange” in EHR and the “Tuberculosis Questionnaire” in EHR for evaluation and recommendations.

The relevant TB information including recommendations from the OSDH will be included on the "TB Contact Investigation Form" MSRM 140301.02.1 to be submitted to the OSDH.

2. Employees

All employee contacts will complete a "Tuberculosis Questionnaire" MSRM 140106.01. According to the CDC, high and medium risk and close contacts are to be evaluated within 7 days of the diagnosis of TB disease of the index patient. All contacts will receive education about the increased risk of TB infection and disease related to a recent exposure and will receive instructions regarding signs and symptoms of TB to report to medical providers.

Only current DOC employees will be evaluated by DOC staff. All former employees found to be at risk will be reported to the OSDH on the "TB Contact Investigation Form" MSRM 140301.02.1, with the most current locating information included.

Employees with signs or symptoms of TB, regardless of TST result, will be immediately placed in a mask and sent to their private physician or local health department. The employee should call ahead to alert the physician or clinic of their exposure to active TB.

Contacts with documentation of a previous positive TST will be evaluated by completing a "Tuberculosis Questionnaire" MSRM 140106.01. All other employees will have a TST administered according to the "Tuberculin Skin Test Guideline" MSRM 140301.03. All contacts will be educated about the signs and symptoms of TB to report to medical services if, at any time, they experience signs or symptoms. If the initial TST is interpreted as negative (< 5mm of induration), the employee will receive a second TST at least 12 weeks after their last exposure to the index patient.

If an employee develops a positive TST (\geq 5mm of induration) they will be evaluated for signs or symptoms again to determine the need for isolation. They will also have a chest x-ray taken by their facility and sent to the OSDH with the "Tuberculosis Summary Record Opening Interchange" MSRM 140106.01 and the "Tuberculosis Questionnaire" MSRM 140106.01 for evaluation and recommendations.

The relevant TB information including recommendations from the OSDH will be included on the "TB Contact Investigation Form" MSRM 140301.02.1 to be submitted to the OSDH.

3. Non-DOC contacts:

Identified contacts who are not incarcerated in the DOC, not currently working for the DOC, or have been visitors, identify these contacts with locating information on the "TB Contact Investigation Form" MSRM 140301.02.1 to submit to the OSDH.

F. Treat eligible contacts

1. Offenders

Chest x-rays and pertinent medical information, especially the individual's current weight, results of the "Tuberculosis Questionnaire" in EHR, HIV result, and pertinent medical history will be sent to the OSDH for evaluation and recommendations. All contacts with a new positive TST will be evaluated for treatment.

2. Employees

Recommendations for x-rays and treatment will be at the direction of the OSDH TB Control Officer.

G. Decision to expand testing

Expanded testing means evaluating the low risk and other-than-close contacts for evidence of TB infection or disease. Testing is expanded to include the low risk contacts only after all high and medium risk and close contacts have completed their initial and 12 week evaluations. The decision to expand a contact investigation is made in collaboration with the Nurse Manager (Infection Control) in Medical Services. A contact investigation is expanded in three situations:

1. If there is a greater than community prevalence of positive skin tests among the high and medium risk contacts. For the DOC the community prevalence is 10%.
2. If there are secondary TB cases attributable to the exposure among medium risk contacts.
3. If there are TST converters attributable to the exposure among the medium risk contacts.

V. Forms and Reporting

A. "TB Contact Investigation Form" MSRM 140301.02.1

This form must be complete. It will be filed separately from all offenders or employee healthcare files at the facility. The initial report, due within one week of the index patient's diagnosis, will include the names of contacts and places with locating information. This report will be faxed to the OSDH and to the DOC Medical Services. As contacts are identified during the

course of the investigation they will be added to the form and reported to the OSDH and the Nurse Manager (Infection Control) in Medical Services.

The second report to the OSDH and the Nurse Manager (Infection Control) in Medical Services, due within 10 days of the initial report, will be after the initial screening of all contacts and will include the results of the testing and screening and any medical provider-recommendations.

The last report to the OSDH and the Nurse Manager (Infection Control) in Medical Services will be after the 12-week follow-up testing and will include all of the results and recommendations.

1. "Tuberculosis Questionnaire" in EHR

This form documents signs and symptoms of TB disease will be complete and filed in the offenders healthcare record. Each offender-contact will have a signs and symptoms evaluation completed.

2. "TB Contact Investigation Summary" MSRM 140301.02.2

This form will be filed separately from all offender or employee medical files. This form summarizes the results of the evaluations performed for the contact investigation. The results are calculated after the initial screening is completed and after the 12 week screening is completed. These results are used to determine if the contact investigation will be expanded to include the low risk or other-than-close contacts. If the investigation is expanded the results are calculated and included on this form. After the investigation is complete the form is faxed to the Nurse Manager (Infection Control), 405-962-6147, in Medical Services and the original is filed with the "TB Contact Investigation Form" 140301.02.1 at the facility.

VI. References

U.S. Department of Health & Human Services, Public Health Service, Centers for Disease Control and Prevention. *Core Curriculum on Tuberculosis*, Third Edition.

U. S. Department of Health and Human Services and Centers for Disease Control and Prevention. *Contact Investigations for Tuberculosis*, October 1999.

Oklahoma State Department of Health annual TB training. "Breaking Old Habits in Contact Investigations", 29 October 2004. Lawton, OK.

OP-140301 entitled, "Tuberculosis Control Program"

MSRM 140301.03 entitled, "Tuberculin Skin Test Guideline"

VII. Action

The Chief Medical Officer (CMO) will be responsible for compliance with this procedure.

The CMO will be responsible for the annual review and revisions.

Any exceptions to this procedure will require prior written approval from the CMO.

This procedure will be effective as indicated.

Replaced: Medical Services resource Manual 140301-02 entitled "TB Contact Investigation Guideline" dated January 22, 2008

Distribution: Medical Services Resource Manual

Referenced Forms	Title	Located in
MSRM 140106.01	“Tuberculosis Summary Record”	EHR
MSRM 140106.01	“Tuberculosis Questionnaire”	EHR
MSRM 140301.02.1	“TB Contact Investigation Form”	MSRM 140301-02
MSRM 140301.02.2	“TB Contact Investigation Worksheet”	MSRM 140301-02
Attachments		
Attachment A	“Concentric Circles”	Attached