The disease treatment recommendations in this policy are meant to serve as guidelines. These guidelines are not intended to substitute for the judgement of a physician or nurse in providing appropriate medical care.

**POLICY:** There shall be a standardized method of identifying, treating, and monitoring patients with tuberculosis exposure and tuberculosis disease.

**PROCEDURES**

**I. TUBERCULOSIS (TB) HISTORY AND DEFINITION**

A. A TB classification *(Attachment A)* is assigned at the time of the health appraisal of all incoming inmates and recorded as Class 0, 1, 2, 3, 4, 5, or 6 on the Master Problem List. The Master Problem List will be updated to reflect subsequent changes in TB classification. The Mantoux (PPD) skin test is recorded on the Abstract of Immunizations—Tuberculin Skin Tests(HSM-2).

B. Tuberculosis is caused by bacteria in the *Mycobacterium tuberculosis* complex (MTB). This includes *Mycobacterium tuberculosis*, *Mycobacterium bovis* and *Mycobacterium africanum*. Infection or disease caused by other mycobacteria (atypical, or non-tuberculous mycobacteria) is not considered tuberculosis and is not covered by this policy.

**II. TB SCREENING**

A. All inmates will be screened for symptoms of TB by interview at intake and at least annually thereafter. Appropriate follow-up must be initiated based on the presence of signs or symptoms.

B. Unless they already have written documentation of a previous positive skin test, PPD skin tests are to be performed: 1) on all individuals entering TDCJ; 2) annually within 30 days of the date of incarceration; 3) at any time signs and symptoms are present; or 4) if they have been identified as close contacts of known or suspected cases of TB.

C. Individuals with a confirmed past history of tuberculosis, and those with a documented significant reaction to a previous skin test, will receive a screening two view chest x-ray and an interview for symptoms of TB in lieu of skin testing upon entering TDCJ.

D. All known or suspected HIV infected inmates, inmates identified to be at special.
risk for TB, or inmates with signs or symptoms of TB, will receive a screening two view chest x-ray on intake in addition to PPD skin testing.

III. TB SKIN TESTING

A. Tuberculin skin test technique and interpretation:

The intradermal Mantoux skin test, using 0.1 ml of PPD containing 5 TU (Tuberculin Units) will be used. Skin tests will be read 48 to 72 hours after application. Results are recorded on form HSM-2.

B. HIV-negative inmates with reactions of 5mm - 9mm and HIV-positive inmates with reactions of 1 - 4 mm should receive a repeat test in approximately one to two weeks.

C. 5 mm of induration will be considered a positive skin test reaction in HIV positive and other immunocompromised inmates and for patients with chest x-ray findings suspicious for active or inactive tuberculosis. All others, except close contacts of an active case (see 111.E) will be considered positive if the induration is 10 mm or greater.

D. 5 mm of induration will be considered positive for inmates tested as a close contact of a known active pulmonary TB case. If the first post-exposure skin test is done less than 10 weeks after exposure ended and measures less than 5mm in diameter, another skin test should be done 10 weeks after exposure to the index case ended.

E. HIV counseling and testing will be offered within 30 days of diagnosis to any individual with TB infection or TB disease.

IV. PREVENTIVE THERAPY (TREATMENT FOR LATENT TB INFECTION, [LTBI])

A. All inmates with a newly documented positive skin test will have a chest x-ray and be evaluated by a physician or mid-level provider for active tuberculosis before initiating preventive therapy. The chest x-ray must be done within one month prior to starting preventive therapy.

B. Unless there is a contraindication or documented history of completed preventive therapy, all nonpregnant PPD-positive
individuals in whom active disease has been ruled out should receive preventive therapy.

C. Treatment regimen:

1. Isoniazid (INH) 900 mg p.o. in combination with rifapentine (RPT) 900 mg p.o. once weekly for 12 weeks is the preferred regimen unless contraindications are present.

2. Contraindications to INH-RPT treatment include the following:
   • Warfarin therapy
   • Currently undergoing Hepatitis C treatment
   • HIV infection on anti-retroviral therapy other than efavirenz or raltegravir-based regimens in combination with either abacavir/lamivudine or tenofovir disoproxil fumarate/emtricitabine
   • Anti-epileptic drug therapy (phenytoin, carbamazepine)
   • End-stage liver disease
   • Hypersensitivity to INH or rifamycin
   • Known resistance to RIF or INH
   • Pregnancy
   • For guidance in the setting of active hepatitis, see section IV.E.

3. In patients receiving an efavirenz or raltegravir-based anti-retroviral regimen, it is recommended that pyridoxine 50 mg weekly be added.

4. Patients who have a contraindication to INH-RPT treatment should receive a regimen of INH 900 mg p.o. twice weekly or 300 mg p.o. daily for nine months. (Although the Physician’s Desk Reference does not list 900 mg BIW for preventive therapy, this is a recommended regimen option according to the Centers for Disease Control and the American Thoracic Society. BIW regimens must be given by Directly Observed Therapy [DOT].) Total doses should equal 270 for daily therapy, or 76 doses for BIW therapy. Although biweekly chemoprophylaxis for LTBI must be administered by DOT, daily chemoprophylaxis may be administered at the pill window.
5. Patients weighing less than 110 lbs. should have their INH dose adjusted based on body weight.

6. Patients exposed to individuals with INH-resistant or multi-drug resistant TB should be started on chemoprophylaxis after consultation with the Office of Public Health.

7. If INH-RPT preventive therapy has been interrupted for a period of more than four weeks, re-initiate chemoprophylaxis after re-evaluating the patient to rule out active TB.

8. If INH-RPT preventive therapy is interrupted for less than 4 weeks, resume treatment and complete the total number of doses required for 12 weeks of therapy as listed in C.1 above.

9. If INH preventive therapy has been interrupted for a period of eight weeks or more, re-initiate chemoprophylaxis after re-evaluating the patient to rule out active TB.

10. If INH preventive therapy is interrupted for less than 8 weeks, resume treatment and complete the total number of doses required for 9 months of therapy as listed in C.4 above.

D. Monitoring patients on preventive therapy:

1. Patients on preventive therapy must be monitored for drug toxicity by unit nursing staff at monthly intervals, with documentation on form HSM-19, TUBERCULOSIS Patient Monitoring Record which is found in the EMR. For those facilities without EMR access use (Attachment B).

2. Patients will be questioned about signs and symptoms of tuberculosis and about drug toxicity with each visit. Comprehensive screening for adherence and drug toxicity should be provided during the monthly monitoring visits.
E. Liver function tests (LFTs)

A. A baseline liver profile (including at least AST, ALT and total bilirubin) should be obtained in 1) inmates with HIV infection, 2) pregnant women, those who are in the first 3 months of the post-partum period, those with a history of chronic hepatitis or alcoholism, and 5.) those over age 35 who are on medication for a chronic illness.

2 Liver enzymes and bilirubin should be repeated monthly in: 1) pregnant women, 2) those in the first 3 months post-partum, and 3) those whose baseline tests were abnormal.

3. Chemoprophylaxis should be withheld in the setting of active hepatitis defined as AST and ALT>5x ULN, (upper limit of normal range) without symptoms or >3x ULN with symptoms (abdominal pain, nausea, vomiting, icterus).

F. The patient should be educated regarding the importance of chemoprophylaxis and the possibility of toxicity including signs and symptoms of toxicity.

G. No anti-tuberculosis drugs, either prophylactic or therapeutic, may be administered by KOP programs.

H. Toxicity associated with chemoprophylaxis.

1. Symptoms and signs consistent with INH, rifapentine, or rifampin toxicity include unexplained rash, anorexia, nausea, right upper quadrant abdominal tenderness, persistent dark urine, jaundice, vomiting, icterus, elevated temperature (otherwise not explained), and paresthesia of the extremities.

2. If any of these develop, chemoprophylaxis should be stopped immediately, and a liver profile should be checked. If the ALT or AST is elevated or if any other liver function test suggests hepatotoxicity, discontinue chemoprophylaxis, and observe patient, as described above in IV. E. The clinical judgment of the provider is important in determining whether therapy should be discontinued at a lower liver enzyme threshold.

3. In most cases chemoprophylaxis for latent TB infection will not be restarted after a patient has experienced INH liver toxicity. Certain high-risk patients may be considered for an alternative chemoprophylaxis regimen of rifampin 600 mg daily for 4 months.
4. If toxicity develops during treatment for active tuberculosis, consult with Office of Public Health or an appropriate specialist for advice on alternative treatment and reintroduction of antituberculosis drugs.

V. DIAGNOSIS OF TUBERCULOSIS DISEASE

The diagnostic process of tuberculosis comprises history and physical examination, tuberculin skin testing, chest x-ray examinations, and sputum examination for mycobacteria.

A. Risk factors for tuberculosis include previous incarceration, past exposure to TB, incomplete treatment and/or immunosuppression.

B. Symptoms/signs: productive cough, hemoptysis, chest pain, night sweats, weight loss, fever, chills, fatigue and lymphadenopathy.

C. Sputum specimens

1. Sputum for AFB smear and culture will be collected early in the morning on two consecutive days. A third specimen should be collected later, the first or second day. The first set of 3 specimens should be collected prior to the initiation of medication. If the inmate is so ill that initiating treatment cannot be delayed, at least the first specimen should be collected before starting treatment.

2. Sputum specimens should be collected in a negative pressure room.

3. A repeat set of 3 sputum specimens for AFB smear and culture will be obtained after 7 days of antibiotic therapy. One sputum specimen will be obtained and submitted to the laboratory once each month after positive diagnosis until two consecutive specimens are negative for MTB by culture. Cultures may be considered negative for MTB if the only bacteria isolated are atypical mycobacteria. If an inmate does not show for a sputum collection, he/she should be called out for the sputum collection.
4. Sputum specimens for AFB must be placed in approved containers and sent by **overnight carrier** to the contracting laboratory. Unit health administrators are responsible for assuring that the packaging of these specimens conforms to the requirements of the carrier.

5. All tuberculosis-related laboratory results must be **reported** to the Office of Public Health. The unit Infection Control Nurse (ICN) will submit copies of all results of smear examinations, cultures, sensitivity studies, PCR tests, DNA probes, etc., upon receipt.

### VI. SUSPECT AND CONFIRMED CASES: Management of Patients and Suspects with Pulmonary Tuberculosis

**A.** All patients with apparent or demonstrated pulmonary TB or TB of the upper respiratory tract will be placed in an approved **airborne infections isolation (All) room** until tuberculosis is:

1. ruled out *or*
2. the patient
   - a. has been on antituberculosis therapy for at least 2 weeks,
   - b. has three successive sputum specimens **negative** for AFB on *smear*, and
   - c. demonstrates clinical improvement.

**B.** Patients who have been released from respiratory isolation after having received at least two weeks of antituberculosis therapy and three successive negative sputum smears and demonstrate clinical improvement must be single-celled and special transportation utilized until one of the following criteria is met:

1. Tuberculosis is ruled out, or
2. All sputum cultures from two successive months are negative.

**C.** The following table may assist in deciding whether to isolate suspect cases of pulmonary TB:

<table>
<thead>
<tr>
<th>X-RAY FINDINGS</th>
<th>SUGGESTED ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Cavitary Lesion</td>
<td>Isolate; consider as likely suspect</td>
</tr>
<tr>
<td>II. Infiltrative lesion:</td>
<td>Most likely isolate; consider as a suspect (symptoms also important).</td>
</tr>
<tr>
<td>A. Upper lobe distribution</td>
<td>Prior to deciding to isolate, review for presence of relevant history (especially immnosuppression) and symptoms</td>
</tr>
<tr>
<td>B. Distribution other than upper lobe</td>
<td></td>
</tr>
<tr>
<td>III. Solitary nodule lesion</td>
<td>Doubtful that isolation will be necessary (symptoms important; and may need to refer for specialist evaluation).</td>
</tr>
</tbody>
</table>
D. All health care personnel entering an AFB (respiratory) isolation room shall observe established TDCJ respiratory isolation precautions, including the use of approved masks *(at least NIOSH-certified N-95 respirator or equivalent)*.

E. Patients with demonstrated or suspected pulmonary TB who must be transported will not be transported with other patients. The patient and all staff members who share air space will wear appropriate face masks during the period of transportation. * Patients will wear a surgical mask to prevent particles from the respiratory tract being released into shared airspace. Staff members should wear approved (ie; NIOSH -certified N-95 respiratory or equivalent) mask to remove particles from the air that they inhale. Ventilation will be maximized to prevent rebreathing of air in the vehicle.

F. Consider starting patients with suspected TB on treatment after the first set of 3 sputum specimens is collected. This will allow earlier discharge from isolation (after 2 weeks of treatment) if the initial sputum smears are negative, rather than keeping them in isolation until all cultures are negative if treatment is not started. If TB is subsequently ruled out treatment can be changed to chemoprophylaxis and an alternative diagnosis of the pulmonary lesion pursued.

G. Isolation is *not* needed in cases of **atypical (non-TB) mycobacterial disease**. Respiratory isolation may be discontinued if the infection is solely due to non-tuberculosis mycobacteria.

**VII. TREATMENT OF TB**

A. Treatment must include a full course of at least two drugs to which there is demonstrated susceptibility. Because of the possibility of primary drug resistance, initial therapy with multiple drugs (**four or more antituberculosis drugs**) is recommended.

B. Determination of **risk factors** for infection with **drug-resistant** TB must be made prior to initiating treatment. Those with an increased risk of drug-resistance include.


• Persons with a history of previous treatment for tuberculosis

• Contacts of known or suspected drug-resistant cases

If drug resistance is anticipated or determined by sensitivities, **consultation** with the Office of Public Health and appropriate specialists is required within three days of initiating therapy.

**C. Recommended therapeutic regimen** for patients **without** risk factors for resistant infection, who are HIV negative or HIV positive and not on a protease inhibitor or a non-nucleoside RTI:

First 2 weeks (induction phase, 10 doses given 5 days per week as a single daily dose)

- INH 5 mg/kg (maximum 300 mg) p. o. daily
- Rifampin 10 mg/kg (maximum 600 mg) p. o. daily
- Ethambutol (see Table 1) p. o. daily
- Pyrazinamide (see Table 2) p. o. daily

Next 6 weeks (intensive phase, 12 doses as a single dose BIW)

- INH 15 mg/kg (maximum 900 mg) p. o. twice weekly
- Rifampin 10 mg/kg (maximum 600 mg) p. o. twice weekly
- Ethambutol (see Table 1) twice weekly.
- Pyrazinamide (see Table 2) twice weekly

Continuation Phase (36 doses as a single dose BIW)

- INH 15 mg/kg (maximum 900 mg) twice weekly
- Rifampin 10 mg/kg (maximum 600 mg) twice weekly

Table 1 Suggested ethambutol doses based on estimated lean body weight.

<table>
<thead>
<tr>
<th>Weight (kg)</th>
<th>40-55</th>
<th>56-75</th>
<th>76-90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily dose, mg</td>
<td>800</td>
<td>1,200</td>
<td>1,600</td>
</tr>
<tr>
<td>BIW dose, mg</td>
<td>2,000</td>
<td>2,800</td>
<td>4,000</td>
</tr>
</tbody>
</table>

- Ethambutol and Pyrazinamide will need to be adjusted for those with chronic renal insufficiency or chronic renal failure.
Table 2 Suggested pyrazinamide doses based on estimated lean body weight.

<table>
<thead>
<tr>
<th>Weight (kg)</th>
<th>40-55</th>
<th>56-75</th>
<th>76-90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily dose, mg</td>
<td>1,000</td>
<td>1,500</td>
<td>2,000</td>
</tr>
<tr>
<td>BIW dose, mg</td>
<td>2,000</td>
<td>3,000</td>
<td>4,000</td>
</tr>
</tbody>
</table>

The continuation phase should be lengthened if the patient has not become sputum culture negative after the second month of therapy. Treatment should continue a minimum of six months, and until the patient has been culture negative for at least 4 months. **Treatment regimens that do not include pyrazinamide for the initial two months, or those in which INH or rifampin are not included will have to be prolonged. Consult the Office of Public Health for more information in these situations.**

Ethambutol may be discontinued before the end of the intensive phase if INH and rifampin are included in the treatment regimen and the organism is susceptible to both drugs on culture. Pyridoxine (50 mg daily or 100 mg BIW) may be added to the above regimen if vitamin B-6 supplementation is felt to be necessary.

D. Special considerations must be taken for patients who are on a protease inhibitor or NNRTI or are candidates for such therapy. Consider consulting with an infectious disease specialist regarding the management of these patients.

E. Patients who have a CD4+ count of less than 100 should not receive BIW therapy. They should either continue daily therapy for the duration of treatment or receive treatment three times weekly (TIW) during the intensive and continuation phase of treatment. Consider consulting with an infectious disease specialist when treating these patients.

F. HIV positive patients who develop tuberculosis and who are not on antiretroviral therapy should have an expedited referral to an infectious disease specialist (UTMB) or another designated physician (Texas Tech) to initiate antiretroviral therapy for HIV. Do not delay starting antituberculosis therapy in these patients. TB treatment should be started before initiating antiretroviral therapy. Because TB is an AIDS-defining illness, these patients are potential candidates for antiretroviral therapy regardless of their CD4+ count or viral load.

G. **Directly Observed Therapy (DOT)** is the standard of care for the treatment of suspected and confirmed cases of tuberculosis. The ICN is responsible for ensuring that DOT is implemented; however, distribution of medication via DOT may be accomplished by any staff qualified to administer medications. Each
unit must develop a **specific protocol** for medication administration via DOT, which includes the following:

- Unit-specific clinic **access procedures** (e.g., pass for specific time).
- Each patient will receive an **information sheet** [(Attachment D)](attachmentD) signed by the patient and ICN. A copy is given to the patient.
- ICN must **monitor compliance** at least weekly, and the unit must document doses on **PRS** and in the record on the HSM-76 [(Attachment E)](attachmentE).
- Daily **assignment sheets** must include DOT task.
- Inmates should be called out when they do not show for a dose of DOT medication.
- Staff assigned to administer DOT must communicate **refusals** and **no shows** to the ICN who is responsible for educating the patient and encouraging compliance. Further refusals or no shows will then be reported to the unit physician.
- Patient will be observed taking medications and **oral cavity checks** may be utilized if deemed appropriate.

**H.** Patients on anti-TB therapy must be seen by a **physician** monthly until 2 consecutive monthly sputum **cultures** are reported negative. Subsequent monthly follow-up may be performed by a physician, physician assistant, or registered nurse.

**I.** Patients will be monitored at least monthly for signs and symptoms of drug toxicity as outlined in sections IV (D) - IV (H).
VIII. EVALUATION OF CONTACTS

A. When a patient is determined to be a suspected TB case (i.e., when placed into respiratory isolation, started on antituberculosis therapy or sputum cultures to rule out TB are ordered):

1. The unit ICN will notify the office of Public Health and begin collecting information about the identity of inmates and staff who would be considered close contacts. (Attachment E) provides guidance in conducting a contact investigation.
2. The ICN should also get a current unit strength report that includes housing and job assignments for future use in case a contact investigation must be expanded. Housing contacts may also be determined by using the INTBLIST report on FORVUS. Contact Office of Public Health if you are unable to access INTBLIST.
3. If the inmate has been on the facility for less than a month, the ICN at the previous facility must be notified to begin compiling a list of potential contacts at that facility.
4. It is advisable that the warden be notified of the potential need for a contact investigation, but that testing will not begin until tuberculosis is confirmed.
5. In some instances, high risk contacts may be tested prior to confirmation of TB. Contact the Office of Public Health for assistance in this determination.

B. If the case is confirmed as tuberculosis, (through positive culture or positive PCR), the contact investigation should begin:

1. Assess those who are considered close contacts for signs and symptoms of tuberculosis and begin PPD skin testing of those contacts.
2. If there are a large number of positive reactions on initial screening, additional contacts with less exposure should be tested.
3. 5 mm of induration is considered a positive skin test for close contacts of a case of tuberculosis. If the initial skin test reaction is less than 5 mm in size then a repeat skin test should be done 10 weeks after the last possible exposure to the index case.
4. If there are any conversions from negative to positive between the first and second skin tests, consideration should be given to expanding the contact investigation to include those contacts with less exposure.
5. If uncertain of the need or degree to which a contact investigation should be expanded, consult the Office of Public Health for advice. Positive skin tests should be evaluated and treated as in Section IV.
6. If a contact is immunocompromised, the provider should determine whether preventive therapy should be considered even if the skin test is negative.
C. If an inmate is transferred from another unit for respiratory isolation to rule out TB, it is essential that information about positive smear or culture results be telephoned to the sending unit as soon as available so that an appropriate contact investigation can be undertaken. The sending unit should also check with the receiving unit to find out the offender's status if no information is received within a reasonable period of time.

D. Employees considered to be close contacts of identified cases of TB within TDCJ will be offered TB skin testing when a contact investigation is indicated. Unit health services personnel will notify the Office of Public Health of those circumstances and forward records of testing.

IX. REPORTS

A. A Tuberculosis Screening Report (Attachment C) must be completed monthly by the unit ICN and mailed, e-mailed, or faxed to the Office of Public Health by the 5th day of the month following the month of screening.

B. Form TB-400 A (Attachment G-1) is to be completed and sent to OPH when a patient:

1. is suspected or confirmed to have active TB-
2. when preventive therapy is started.
3. when preventive therapy is stopped or completed.
4. When the patient is discharged from TDCJ before completion of preventative therapy.

C. Form TB-400 B (Attachment G-2) to be completed and sent to OPH when a patient.

1. is suspected or confirmed case of to have active TB,
2. when a final diagnosis of tuberculosis is made,
3. every 3 months during treatment,
4. upon completing chemotherapy for TB.
5. when the patient is discharged from TDCJ before completion of treatment for TB.

D. Forms TB-340 and TB-341 are used for reporting the results of a contact investigation (see Attachment F). Copies of these forms are in (Attachment).

E. An inmate should have his/her tuberculosis-class changed and documented on the Master Problem List each time his/her TB classification changes. Only one TB class is to be documented at a time. The provider may document TB class 5 (suspects) or TB class 3 (active cases) on the Master Problem List. The Infection Control Nurse (ICN) may document class O (no TB exposure) class 1 (TB exposure; no evidence of infection), class 2 (TB; infection; no disease) or Class.
4 (TB; no current disease)

1. Inmate found to have a positive tuberculin skin test by documented history or by skin testing, and active tuberculosis has been ruled out (TB Class 2; Latent TB Infection). Enter medical alert code 0120.

2 Inmate is suspected to have active tuberculosis, but the diagnosis is not confirmed yet (TB Class 5). Enter medical alert code 0140. If the inmate previously had medical alert code 0120 or 0130, change the code to 0140.

3 Inmates found to have active tuberculosis (TB Class 3). Enter medical alert code 0121. If the inmate previously had medical alert code 0120 or 0140, change the code to 0121.

4. Inmate has completed therapy for active tuberculosis (not preventive therapy). Inmate no longer has tuberculosis (TB Class 4). Change the alert code from 0121 to 0130.

5. Do not use medical alert code 0119. This code corresponds to TB Class 1 and would only apply for a skin test negative contact of a case of active tuberculosis.

References:

3. CDC. Prevention and Control of Tuberculosis in Correctional and Detention Facilities: Recommendations for CDC. MMWR 2006; 55 (RR-9), July 7, 2006
5. ACA Standards 4-4354, 4-4355
6. NCCHC Standard P-14, Infection Control Program (essential) Curry International Tuberculosis Center, March 2004
INFECTION CONTROL POLICY B-14.10
ATTACHMENT A

| Classification of Persons Exposed to and/or Infected with *Mycobacterium tuberculosis* |
|-----------------|-------------------------------------------------|
| Class | Definition |
| 0 | No tuberculosis exposure, not infected. Persons in this class have no history of exposure and a negative reaction to the tuberculin skin test (if tested). |
| 1 | Tuberculosis exposure, no evidence of infection. Persons in class 1 do have a history of exposure but have a negative reaction to the tuberculin skin test. Action taken for persons in this class depends mainly on the degree and recency of exposure to *M. tuberculosis*, as well as the immune status of the exposed person. Medical Alert Code = 0119 |
| 2 | Latent tuberculosis infection, no disease. Persons in class 2 have a positive reaction to the tuberculin skin test (indicate mm in duration), negative bacteriologic studies (if done), and no clinical, bacteriological, or radiographic evidence of active tuberculosis. Treatment of latent tuberculosis infection may be indicated for some persons in this group. Medical Alert Code = 0120 |
| 3 | Tuberculosis, clinically active. Class 3 includes all patients with clinically active tuberculosis whose diagnostic procedures are complete. If the diagnosis is still pending, the person should be classified as a tuberculosis suspect (Class 5). To fit into Class 3, a person must have clinical, bacteriological, and/or radiographic evidence of current tuberculosis. This is established most definitively by isolation of *M. tuberculosis*. A person who had past tuberculosis and who also currently has clinically active disease belongs in Class 3. Medical Alert Code = 0121 |
| 4 | Tuberculosis: not clinically active. This classification is defined by a history of previous episode(s) of tuberculosis or abnormal stable radiographic findings in a person with a positive reaction to tuberculin skin test (indicate mm induration), negative bacteriologic studies (if done), and no clinical and/or radiographic evidence of current disease. Medical Alert Code = 0130 |
| 5 | Tuberculosis suspect (diagnosis pending). Persons should be so classified when a diagnosis of tuberculosis is being considered whether or not treatment has been started, until diagnostic procedures have been completed. Persons should not remain in this class for more than 3 mo. When diagnostic procedures have been completed, the person should be placed in one of the preceding classes. Medical Alert Code = 0140 |

Note: Class 6 Non-tuberculosis mycobacteria, as of July 1999 is no longer a part of *Mycobacterium tuberculosis* classifications by American Thoracic Society and CDC.

Reference:
Diagnostic Standards and Classification of Tuberculosis in Adults and Children
This Official Statement of the American Thoracic Society and the Centers for Disease Control and Prevention was adopted by the ATS Board of Directors, July 1999. This Statement was endorsed by the Council of the Infectious Disease Society of America, September 1999
https://doi.org/10.1164/ajrccm.161.4.16141 PubMed: 10764337

TB Classification Revision Feb 2023
**TUBERCULOSIS PATIENT MONITORING RECORD**

<table>
<thead>
<tr>
<th>Name:</th>
<th>Supervision:</th>
<th>Date:</th>
<th>Facility:</th>
<th>TDCJ#:</th>
<th>Reason for</th>
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</thead>
</table>

<table>
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<tr>
<th>Date</th>
<th>Reason for Tuberculosis</th>
<th>Date</th>
<th>Reason for Positive Reactor (on Therapy)</th>
<th>Date</th>
<th>Reason for Converter</th>
<th>Date</th>
<th>Reason for Reactivation</th>
<th>Date</th>
<th>Reason for Other (specify)</th>
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<table>
<thead>
<tr>
<th>Month</th>
<th>Initial Visit</th>
<th>Month 1</th>
<th>Month 2</th>
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<th>Month 4</th>
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<th>Month 6</th>
<th>Month 7</th>
<th>Month 8</th>
<th>Month 9</th>
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</table>

- **Date**
- **Weight**
- **RX compliance**
- **X-ray done**
- **Sputum done**
- **ALT or AST**
- **Nausea**
- **Vomiting**
- **Jaundice**
- **Paresthesias**
- **Vision change**
- **Hearing change**
- **Visual acuity**
- **Audiogram**
- **Pt. Teaching**
- **Abdominal Pain**
- **Dark Urine**
- **Rash**
- **Initials**

HIV test offered? YES NO Date: Counseled: Date Refusal signed:

*Record compliance as (number of doses actually taken)/(number of doses expected). For example, in a 4 week period, a person on twice weekly therapy would be expected to take 8 doses of meds. If he only took 6, then compliance need would be recorded as 6/8.

** Visual acuity recommended as baseline on everybody on TB drugs and monthly on persons on daily ethambutol.

*** Audiogram is recommended monthly for persons on streptomycin or other ototoxic drugs only.

**** Patient teaching of signs and symptoms of toxicity.

If treatment extends past 12 months, use a second sheet to continue documentation of toxicity checks HSM-19 (1/01)
MONITORING PATIENTS ON TREATMENT FOR TB

I. Monitoring for drug toxicity

Adults treated for TB should have baseline measurements of hepatic enzymes, bilirubin, serum creatinine or blood urea nitrogen, a complete blood count, and a platelet count (or estimate). Serum uric acid should be measured if pyrazinamide is used, and a baseline examination of visual acuity A. and testing of color discrimination (Ishihara test) should be obtained for patients to be treated with ethambutol. Audiometry should be performed at the beginning of streptomycin therapy. The purpose of these baseline tests is to detect any abnormality that would complicate the regimen or necessitate its modification.

Toxicity monitoring must be individualized and based on the drugs used in a given regimen (see below) and patient factors related to toxicity (e.g., age, alcohol use). At a minimum, patients should be seen at least monthly during therapy and questioned by medical personnel for toxicity, even if no problems are apparent. Patients should be specifically instructed to look for symptoms associated with the most common reactions to the medications they are receiving. If symptoms suggesting drug toxicity occur, appropriate laboratory testing should be performed.

All patients receiving isoniazid, rifampin, and/or pyrazinamide should be instructed to report immediately any symptoms suggesting hepatitis (loss of appetite, nausea, vomiting, persistently dark urine, yellowish skin, malaise, unexplained elevated temperature of greater than three days duration, or abdominal tenderness). Patients receiving rifampin twice-weekly should be monitored by history for possible manifestations of thrombocytopenia (bleeding tendency, easy bruising, blood in urine), or a "flu-like syndrome."

Peripheral neuropathy is associated with isoniazid administration but is uncommon at doses of 5 mg/kg. In persons with conditions in which neuropathy is common (diabetes, uremia, alcoholism, malnutrition), pyridoxine (10-50mg/day) may be given with isoniazid. It is also advisable to give pyridoxine with isoniazid to persons who are pregnant or who have a seizure disorder.

Hyperuricemia may occur in patients receiving pyrazinamide, but acute gout is uncommon. Asymptomatic hyperuricemia is not an indication for discontinuing the drug.

Audiometry should be performed as periodic intervals during streptomycin therapy. If vertigo, dizziness, and ataxia occur (up to 10 percent of patients) in patients receiving streptomycin, the drug should be immediately discontinued.

The interaction of isoniazid and phenytoin or carbamazepine increases the serum concentration of both drugs. When these drugs are given concomitantly, the serum level of phenytoin or carbamazepine should be monitored. Isoniazid may also increase the serum level of some benzodiazepines.

Rifampin may accelerate clearance of drugs metabolized by the liver. These include methadone, coumadin derivatives, glucocorticoids, estrogens, oral hypoglycemic agents, digitalis, anticonvulsants, ketoconazole, and cyclosporin. By accelerating estrogen metabolism, rifampin may interfere with the effectiveness of oral contraceptives.
II. Monitoring Response to Treatment

The best way to measure the effectiveness of therapy for pulmonary TB is to monitor patients bacteriologically through sputum examination at least monthly until conversion to negative. Patients being treated for uncomplicated pulmonary TB do not require frequent chest radiographs. Bacteriologic examination is far more important than monitoring chest films.

A positive sputum culture is the only definitive sign of treatment failure or relapse, and the persistence or reappearance of organisms in the smear should create a high index of suspicion. Radiographic changes and symptoms correlate poorly.

It may also be helpful to assess the radiographic response early in the course of treatment (2-3 months) to rule out an underlying concomitant pulmonary process or complication. A chest film at completion of treatment provides a baseline for comparison with any future films.

Sputum that remains culture positive beyond three months of therapy should suggest the possibility of disease due to drug-resistant organisms or failure of the patient to take medications as prescribed. Over 90% of patients taking isoniazid and rifampin should become sputum culture negative within three months of starting treatment. Patients with sputum that remains culture positive beyond three months should be evaluated for disease due to drug-resistant organisms by repeating sputum cultures and obtaining drug-susceptibility studies. The treatment regimen should not be changed until the drug susceptibility pattern is known, unless the patient is rapidly deteriorating. Never add one new drug at a time to a failing regimen as this may promote the development of further drug resistance.

For patients with disease due to drug-resistant organisms, expert consultation from a specialist should be obtained. Patients with drug-resistant disease should be treated with 2 to 3 drugs to which their organisms are susceptible. Many of the second-line drugs are associated with significantly increased toxicity and require particularly close monitoring of patients receiving them.

For patients who have had a satisfactory and prompt bacteriologic response and who also have completed a six to nine month regimen containing isoniazid and rifampin, routine follow-up is not needed.

Adapted from: Core Curriculum on Tuberculosis, National Tuberculosis Training Initiative
ATTACHMENT C (POLICY B-14.10)
TDCJ CORRECTIONAL MANAGED HEALTH CARE
TUBERCULOSIS PPD MONTHLY REPORT

Purpose of report form is to identify persons with a TB infection, a positive TB skin test reactor:

1. in persons entering TDCJ (at intake)
2. in persons screened at annual date of incarceration (DOI) or for other reasons after entering TDCJ. Example of other reason could be report of TB symptoms or contact to a known TB case.

1. INTAKE TB Screening
   (If unit is not an intake unit skip section 1. go to section 2. Annual or Other Screening)

   - Number of charts screened at intake:
   - Number of charts with a documented positive TB skin test:
     (Note: patient has a documented positive PPD upon entry into TDCJ)
   - PPDs given:
   - PPDs read:
   - Number of Positive PPDs:

2. ANNUAL or OTHER TB Screening

   - PPDs given:
   - PPDs read:
   - Number of Positive PPDs:

Person with a known positive PPD skin test, with or without treatment for TB infection also known as Latent TB infection (LTBI) should be interviewed for symptoms of TB during DOI. TB screening includes a chest x-ray for persons with a new positive PPD, report of TB symptoms, or a person who is a prior PPD positive and a close contact to a known TB case.

3. TB Screening Interviews and Chest X-rays

   - Number of interviews:
   - Number of chest x-rays:
   - Number with TB signs or symptoms:
   - Number of abnormal chest x-rays:

Report due to Office of Public Health by the 5th of each month.

Email to OPH or fax 936 437-3572
Attachment D (POLICY B-14.10)

INFORMATION SHEET

You have been given information about your illness and will be receiving medications either every day □ or twice a week □. Your medications may be changed by your doctor at some time during your treatment which can take six to nine months or more to complete. Because it is extremely important that you take your medications regularly, you will come to the medical department to receive your medication directly from the nurse or medication aide. It may be necessary for him/her to make sure you have been able to swallow your medicine and you will be asked to sign your name each time you take it.

Your illness can be cured, but you must take responsibility for helping yourself to get well. If you fail to take your medicine regularly, you could become very ill, and your present medications may no longer help you.

Once a month you will be seen in the clinic and you should report any unusual symptoms at that time. You may also need lab results at that time.

The following procedure must be followed on this unit for you to report to the medical department.

________________________________________________________
________________________________________________________
________________________________________________________
________________________________________________________

Patient Signature  Date  TDCJ#  Health Care Worker’s Signature

ORIGINAL MUST BE PLACED IN PATIENT MEDICAL RECORD COPY GIVEN TO PATIENT
**ATTACHMENT E (Policy B-14.10)**
**DIRECTLY OBSERVED THERAPY FLOW SHEET**

**TDCJ MANAGED CARE**
**DIRECTLY OBSERVED THERAPY FLOW SHEET**

**PATIENT’S NAME:** <~PATIENT_NAME~>  **TDCJ#:** <~MRN~>

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**PHYSICIAN’S NAME:**

**TRANSCRIPTIONIST:**

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<th>Patient’s Initials</th>
<th>Patient Refused to come to Medical per Security (Name)</th>
<th>Patient Refused in Medical HSM-82 Obtained (Name)</th>
<th>Provider Notified (Name)</th>
<th>Nurse/CMA Signature</th>
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*SMART – SCANNED- MEDICATION- ADMINISTRATION -RECORDING -TECHNOLOGY*
ATTACHMENT F (POLICY B-14.10)

GUIDE TO PERFORMING A CONTACT INVESTIGATION

I. Gather Information that will be needed for a contact investigation. This is done when TB is suspected, even before confirmation of the case. Initiate the following within 24-48 hrs of receiving a report of “sputum positive for AFB” or a positive culture for AFB from a respiratory tract source:

A. Notify the ICN and the warden. If the ICN is absent, the back-up nurse should notify the ICN nurse immediately upon return.

B. The ICN or back-up nurse should notify the Office of Public Health.

C. Obtain from the suspected case (i.e., with a positive smear and/or culture) and count room the names of high risk (close) contacts for the infectious period of the suspected case, preceding the date the culture/smear up until the time the patient was placed in respiratory isolation. Include as close contacts:
   • Cell mate and inmates in adjacent cells
   • In dorms, the 15 inmates in closest proximity
   • Inmates/teacher in classroom
   • Inmates/employees at work (if work indoors)
   • Inmates in day room (if case inmate has spent at least 4 hr/day three times per week in the dayroom)
   • Household members (if case was identified on arrival to TDCJ or on furlough or bench warrant within past month)

D. Review PPD and HIV status of all named inmates.

E. Obtain copies of the daily Unit Locator Reports for the time frame given in step B from the count room and save them for possible future use. Do not discard before the contact investigation is completed.

F. The Office of Public Health will notify all units that the suspected case-inmate was on during the infectious period, so that they may begin their contact investigation. If the inmate was in a non-TDCJ facility during this time frame, notify the Office of Public Health so notification of the outside facility can take place.

II. No contact investigation is necessary if the case turns out not to be TB. If the cultures of the AFB smear-positive sputum are only positive for a non-tuberculous mycobacteria (i.e., species other than M. tuberculosis) the case is closed. Complete the form TB400 accordingly and send it to Preventive Medicine. No contact investigation is necessary.

III. Begin the skin testing of close contacts after consultation with the Office of Public Health when the case is confirmed through positive PCR or culture. If any culture from a respiratory tract source is reported as positive for M. tuberculosis, initiate the following within 24-48 hours for all persons on the list generated in I.B. above.

A. Notify the ICN.

B. For contacts who have been PPD-negative (documented in medical record) or whose PPD status is unknown.

1. Obtain history regarding symptoms of TB:
   ✒ Cough for ≥ 3 wk
   ✒ Unexplained, documented fever for ≥ 1 wk
   ✒ Recurrent night sweats for ≥ 1 wk
   ✒ Any documented episode of hemoptysis

   If 1 or more of the above are present, follow Nursing Protocol for Suspected TB.

2. Place PPD and interpret reaction 48-72 hours after placement. Record skin test results (indicate diameter [in millimeters] of induration). Please note that the classification of positive skin tests given here only addresses the most common situations. Refer to the Core Curriculum on Tuberculosis (CDC) for a more complete discussion of the interpretation of skin tests.
a. If the first PPD is positive (i.e., > 5 mm induration):
   ✗ Initiate two view chest x-ray on inmates.
   ✗ Encourage HIV testing if not previously recorded within the last 6 months.
   ✗ Educate contact about symptoms of TB, including instructions to seek medical attention if they occur.
   ✗ Refer to provider for possible preventive therapy. Employees should be referred to their private physician for chest x-ray and follow-up.

b. If the first PPD is negative
   ✗ Educate contact about TB and importance of repeat skin testing for determining infection in 3 months.
   ✗ If HIV-positive or if they refuse HIV testing and are in a high-risk group:
      ✗ Initiate two view chest x-ray
      ✗ Refer to provider for possible preventive therapy with INH pending follow-up PPD.
   ✗ Schedule follow-up PPD 8-10 weeks after the last contact before the case was placed in respiratory isolation. (Applies whether HIV-positive or negative)
   ✗ If the second PPD is negative (i.e., < 5 mm induration), case on that contact is closed (no infection). Provider may elect to continue preventive therapy if the contact is immunocompromised.
   ✗ If the second PPD is positive (i.e., > 5 mm):
      ✗ Initiate two view chest x-ray on inmates
      ✗ Encourage HIV testing if not previously recorded, within the last 6 months
      ✗ Educate contact about TB and benefits and possible side-effects of preventive therapy. Obtain informed consent for preventive therapy if authorized by the provider.
      ✗ Refer to provider for possible preventive therapy with INH. Employees should be referred to their private physician for chest x-ray and follow-up.

C. For contacts who are previously documented PPD-positive:
   1. Refer prior positive employees to their private physician for further follow-up.
   2. Obtain history regarding symptoms of TB:
      • Cough for ≥ 3 wk
      • Unexplained, documented fever for ≥ 1 wk
      • Recurrent night sweats for ≥ 1 wk
      • Any documented episode of hemoptysis
      • If 1 or more of the above are present, follow Nursing Protocol for suspected TB.
   3. Initiate two view chest x-ray upon physician’s order
   4. Encourage HIV testing (if negative, unknown, or previous negative test was performed more than 6 months prior).
   5. Educate contact about symptoms of TB, including instructions to seek medical attention if they occur.

D. If more than 10% of the close contacts identified in step I.B convert to PPD positive, widen the contact investigation to include inmates or staff with less contact with the index case. Contact the Office of Public Health for assistance.

E. All contacts identified and tested should be reported on a TB 340 and B 341 form. After the second round of skin testing is completed, all forms should be mailed to the Office of Public Health. Any inmate contact started on tuberculosis medication for therapy or preventive therapy should be reported on the TB 400A or TB 400B forms to the Office of Public Health.
THE TEXAS DEPARTMENT OF STATE HEALTH SERVICES (TDSHS)

ATTACHMENT B (G-2B) FORM
PLEASE UTILIZE THE TEXAS DEPARTMENT OF STATE HEALTH SERVICES (DSHS) ATTACHMENT H (TB-340) Page 1 and ATTACHMENT H (TB-341) Page 2 FORMS

http://www.dshs.state.tx.us/idcu/disease/tb/forms/