



TEXAS
Health and Human
Services

**Texas Department of State
Health Services**

Texas Tuberculosis Work Plan



Tuberculosis and Hansen's Disease Branch

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I. Introduction

The Texas Tuberculosis Work Plan (TB Work Plan) sets forth procedures established by the Texas Department of State Health Services (DSHS) Tuberculosis and Hansen's Disease Branch (TB Branch) and the TB/HIV/STD Epidemiology and Surveillance Branch (Surveillance Branch) to ensure all TB programs receiving state funding or in-kind support from DSHS Public Health Regions (PHRs) achieve TB performance standards.

DSHS Central Office Responsibilities

The TB Branch

The TB Branch will:

- distribute funds to maximize the delivery of authorized services to eligible clients;
- monitor TB programs' budget expenditures on a quarterly basis (if expenditures are below projected amounts, the jurisdictional budget may be decreased);
- develop standards TB prevention and care in Texas;
- monitor and evaluate TB programs on the performance of program objectives to determine effectiveness and compliance with essential TB prevention and care standards;
- provide technical assistance on any aspect of TB prevention and care;
- work with DSHS Pharmacy Branch to ensure availability of medications and supplies to treat TB disease and infection;
- provide Texas-specific TB training directly, or in collaboration with Heartland National TB Center and other partners;
- oversee molecular epidemiology practices and provide technical assistance to investigate transmission patterns and cluster events;
- oversee TB prevention and care in high-risk populations, including correctional facilities, community corrections, homeless shelters, and other congregate settings;
- oversee targeted testing initiatives;
- develop and revise policies and regulations;
- serve as a liaison with the Centers for Disease Control and Prevention (CDC) and other federal and state partners;
- serve as the point of contact for international activities involving TB prevention and care; and
- conduct quality assurance activities.

The Surveillance Branch

The Surveillance Branch will:

- serve as repository for TB data reported to DSHS;
- collect and analyze reports from TB programs to satisfy TB grant requirements;
- serve as the point of contact for inter-jurisdictional transfers;
- promote security and confidentiality standards for TB data exchanges;
- prepare and report aggregate data to the CDC;
- prepare TB epidemiologic reports;
- provide technical assistance to PHRs and local health departments (LHDs) for accurate submittal of TB data;
- assist with the development and implementation of QA procedures and activities;
- promote active surveillance activities among TB programs receiving state funding;
- serve as the TB liaison for CDC/DTBE Surveillance Team; and

DSHS Central Office branches, PHRs, and LHDs

DSHS Central Office branches, PHRs and LHDs will comply with the following regarding TB prevention and care activities:

Texas References

- TX DSHS, Epi Case Criteria and TB Surveillance Definition Guide, 2018
- TX DSHS, Standing Delegation Orders and Standing Medical Orders for Tuberculosis Prevention and Control
- TX DSHS, Texas Tuberculosis Work Plan, <http://www.dshs.texas.gov/idcu/disease/tb/policies/>
- TX DSHS, TB Branch standards and policies, <http://www.texastb.org>
- THISIS website, <http://www.dshs.texas.gov/thsvh/thisis/access.shtm>

Centers for Disease Control and Prevention (CDC), (MMWR), American Thoracic Society (ATS), and Other State and Peer-Reviewed References

- American Thoracic Society (ATS) and Centers for Disease Control and Prevention (CDC), Treatment of TB, Morbidity and Mortality Weekly



- Report (MMWR), Vol. 52 (RR11), 1-77, 2003,
<https://www.cdc.gov/mmwr/PDF/rr/rr5211.pdf>
- American Journal of Respiratory and Critical Care Medicine, Diagnostic Standards and Classification of Tuberculosis in Adults and Children, Vol. 161, 1376-1395, 1999,
<https://www.cdc.gov/tb/publications/PDF/1376.pdf>
 - CDC, Aggregate Reports for Tuberculosis Program Evaluation: Training Manual and User Guide, 2005,
https://www.cdc.gov/tb/publications/pdf/arpes_manualsm1.pdf;
 - CDC, Controlling Tuberculosis in the United States, MMWR, Vol. 54 (RR12), 1-69, 2005,
www.cdc.gov/mmwr/preview/mmwrhtml/rr5412a1.htm
 - CDC, Guidelines for the Investigation of Contacts of Persons with Infectious Tuberculosis, MMWR, Vol. 54 (RR15), 1-43, 2005,
https://www.cdc.gov/mmwr/indrr_2005.html
 - CDC, Guidelines for the Prevention and Treatment of Opportunistic Infections Among HIV-Exposed and HIV-Infected Children, MMWR, Vol. 58 (RR11), 1-166, 2009, https://www.cdc.gov/mmwr/indrr_2009.html
 - CDC, IGRA Blood Test Fact Sheet, 2016,
<http://www.cdc.gov/tb/publications/factsheets/testing/igra.htm>;
 - CDC, Mycobacterium tuberculosis: Report of Verified Case of Tuberculosis (RVCT) Instruction Manual, 2009,
<http://www.cdc.gov/tb/programs/rvct/InstructionManual.pdf>;
 - CDC, Quality Assurance for TB Surveillance Data; A Guide and a Toolkit,
[http://ftp.cdc.gov/pub/Software/TIMS/2009%20RVCT%20Documentation/RVCT%20Training%20Materials/Quality%20Assurance%20Material s/QA%20Manual/3%20-%20Overview%20of%20QA%20Process%20-%20FINAL.pdf](http://ftp.cdc.gov/pub/Software/TIMS/2009%20RVCT%20Documentation/RVCT%20Training%20Materials/Quality%20Assurance%20Materials/QA%20Manual/3%20-%20Overview%20of%20QA%20Process%20-%20FINAL.pdf);
 - CDC, Targeted Tuberculin Testing and Treatment of Latent TB Infection (LTBI), MMWR, Vol. 49 (RR6), 1-43, 2000,
<https://www.cdc.gov/mmwr/PDF/rr/rr4906.pdf>
 - CDC, Tuberculin Skin Testing, (TST) Fact Sheet, 2016,
<http://www.cdc.gov/tb/publications/factsheets/testing/skintesting.htm>
 - CDC, Tuberculosis Surveillance Data Training Report of Verified Case of Tuberculosis (RVCT) Instruction Manual, 2009,
<http://www.cdc.gov/tb/programs/rvct/InstructionManual.pdf>; and



- CDC, Update: Adverse Event Data and Revised ATS/CDC Recommendations against the Use of Rifampin and Pyrazinamide for Treatment of Latent Tuberculosis Infection – United States, MMWR, Vol 52 (RR31), 735-739, 2003, www.cdc.gov/mmwr/PDF/wk/mm5231.pdf

Federal and state regulations and statutes

- Tuberculosis Code, Texas Statutes, Health and Safety Code, Chapter 13, Subchapter B
- Communicable Disease Prevention and Control Act, Texas Statutes, Health and Safety Code, Chapter 81
- Screening and Treatment for Tuberculosis in Jails and Other Correctional Facilities, Texas Statutes, Health and Safety Code, Chapter 89
- Control of Communicable Diseases, Texas Administrative Code (TAC), Title 25, Part 1, Chapter 97, Subchapter A
- Tuberculosis Screening for Jails and Other Correctional Facilities, Texas Administrative Code (TAC), Title 25, Part 1, Chapter 97, Subchapter H
- Medical Records, Texas Administrative Code Title 22, Part 9, Chapter 165, §165.1, [https://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=22&pt=9&ch=165&rl=1](https://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=22&pt=9&ch=165&rl=1)



II. Purpose

The purpose of the TB Work Plan is to describe the framework of a regional and local TB program and outline activities to meet DSHS standards. The TB Work Plan:

- serves as a prescriptive document to design and maintain a TB program;
- outlines expectations and responsibilities of all funded programs;
- assures consistent TB prevention and care practices are applied throughout Texas; and
- provides a blueprint to assess performance outcomes based on quality indicators.

III. Program Stewardship and Accountability

General Requirement

Implement a comprehensive TB program and manage resources in an effective manner that focuses on stewardship and accountability.

In accordance with the Work Plan, TB programs will:

- implement a comprehensive TB prevention and care program;
- develop and maintain TB policies and procedures;
- provide services to evaluate, treat, and monitor clients with suspected or confirmed TB disease without consideration of a client's ability to pay;
- initiate contact investigations (CIs);
- provide services to evaluate, treat, and monitor contacts to suspected or confirmed cases of pulmonary, pleural, or laryngeal TB disease without consideration of a client's ability to pay;
- initiate court-ordered management when needed;
- provide treatment services for at-risk persons diagnosed with TB infection without consideration of a client's ability to pay;
- provide services to evaluate, treat, and monitor Class-B immigrants and refugees without consideration of a client's ability to pay;
- develop and maintain TB surveillance mechanisms for early identification and reporting;
- submit designated reports using established deadlines, schedules, and DSHS-approved mechanisms;
- perform targeted testing;
- apply appropriate administrative, environmental, and respiratory controls to prevent exposure to and transmission of TB;
- provide professional education, training and orientation for new TB program staff and maintain continuing education for current TB program staff;
- monitor budget expenditures and maintain accurate, and concise records;
- comply with confidentiality and security standards;
- monitor surveillance, reporting, and case management activities in correctional facilities;



- perform self-auditing activities to assess clinical care services and reporting practices; and
- perform ongoing continuing quality improvement activities to achieve Texas performance measures.

IV. Conduct Overall Planning and Develop Policies

General Requirement

TB Programs will develop and maintain policies and procedures that align with the Work Plan and TB Branch standards. References, DSHS program policies and procedures are published on the DSHS TB website, <http://www.texastb.org> and are available for guidance. Local and regional policies and procedures must not contradict TB Branch requirements and guidelines. Refer to DSHS TB website for all DSHS program policies, procedures, and standards.

Activities

A. Develop and implement written policies and procedures covering the following topics:

- Program administration
- Training
- Reporting
- Surveillance
- Infection control
- High-risk population screening and evaluation
- Discharge planning and continuity of care
- Cohort reviews
- Program evaluation
- Laboratory testing for TB
- Case management
- Contact investigations (CI)
- Client confidentiality
- Security
- Incident reporting
- Cluster and outbreak investigations
- False positive investigations

B. Ensure that written policies and procedures are easily accessible to all staff responsible for TB prevention and care activities.

C. Review policies and procedures at least once every three years and revise as appropriate to conform to DSHS standards and best practices.

V. Manage Tuberculosis Cases and Suspects

General Requirement

TB programs will provide services to evaluate, treat, and monitor clients with suspected or confirmed TB disease, regardless of ability to pay. Ensure TB clients are appropriately managed, regardless of the jurisdiction in which they are counted. Adhere to procedures outlined in the DSHS Standing Delegation Orders (SDOs) and Standing Medical Orders for Tuberculosis Prevention and Care.

Activities

- A. Collaborate with health care institutions, hospitals, long-term care facilities and correctional facilities to ensure appropriate management of clients with suspected or confirmed TB disease.
- B. Create a medical record for each person with suspected or confirmed TB disease (See also SDO on TB clinical services).
- C. Implement initial infection control practices. (See Table 5.1 and Section 11 of the Work Plan).
 1. Place surgical mask on clients who arrive for TB services at the TB clinic.
 2. Place client in an airborne infection isolation room (AIIR) if available at each clinic visit until client has met criteria for non-infectiousness as outlined in the DSHS SDOs.
- D. Coordinate discharge planning with in-patient facilities for clients being released to outpatient care. The following discharge planning criteria should be met:
 1. A specific plan exists for follow-up care.
 2. Client is started on the standard multi-drug TB treatment regimen and directly observed therapy (DOT) arranged.
 3. No infants or children (<5 years) or immune-compromised persons are present in the household (when possible).
 4. Client is advised of travel restrictions while infectious.

- a. Direct clients to refrain from travel outside of home, except for healthcare-associated visits until client has met criteria for discontinuation of isolation as specified in Table 1.
- b. Direct clients traveling for any health care-associated visits, to wear a surgical mask for the duration of travel and visit.

Table 1. Guidelines for Release from Hospital Isolation for Infectious TB

TB Client Characteristics at Diagnosis	Current Isolation and Release Criteria	Guidelines for Adults and Children with Adult Type Disease
<ul style="list-style-type: none"> • Sputum Acid Fast Bacilli (AFB) smear (+), and/or • Nucleic Acid Amplification Test (NAAT) (+) or • Client suspected of having active TB 	<p>Hospitalized under inpatient airborne isolation or home isolation and being released to:</p> <ul style="list-style-type: none"> • General hospitalization, or • Outpatient congregate setting, or • Home or setting with high-risk contacts 	<p>Discharge from airborne isolation client must meet all of the following criteria:</p> <ol style="list-style-type: none"> 1. Received standard multidrug anti-TB therapy for at least two weeks, if original AFB smear (+) or, 2. if original AFB smear (-), be on therapy for 5-7 days 3. Demonstrated adherence to DOT 4. Demonstrated clinical improvement 5. 3 consecutive AFB (-) smears collected at least 8 hours apart with at least 1 early morning specimen 6. No risk factors for drug resistance
<ul style="list-style-type: none"> • Sputum AFB smear (-) & TB is not suspected, • NAAT if done (-), and/ or • Another diagnosis is likely 	<p>Hospitalized under inpatient airborne isolation and being released to:</p> <ul style="list-style-type: none"> • General hospitalization, • Return to school, or • Return to work, or • Allowed to travel on public transportation 	<p>Discharge from airborne isolation client must meet all of the following criteria:</p> <ol style="list-style-type: none"> 1. 3 consecutive AFB (-) smears collected at least 8 hours apart with at least 1 early morning 2. TB is not likely and another diagnosis is identified



TB Client Characteristics at Diagnosis	Current Isolation and Release Criteria	Guidelines for Adults and Children with Adult Type Disease
<ul style="list-style-type: none"> • Sputum AFB smear (-), and TB is suspected or confirmed through NAAT 	<p>Hospitalized under inpatient airborne isolation or home isolation and being released to return to normal activities including:</p> <ul style="list-style-type: none"> • General hospitalization, • Return to school, or • Return to work, or • Allowed to travel on public transportation 	<p>Discharge from airborne isolation client must meet all of the following criteria:</p> <ol style="list-style-type: none"> 1. Have received standard multidrug anti-TB therapy for 5-7 days 2. Demonstrated adherence to DOT 3. Demonstrated clinical improvement 4. Have 3 consecutive AFB (-) smears collected at least 8 hours apart with at least 1 early morning specimen 5. Have no risk factors for drug resistance
<ul style="list-style-type: none"> • Multidrug-resistant TB (MDR) or Extensively drug-resistant (XDR) confirmed disease 	<p>Hospitalized under inpatient airborne isolation and being released to:</p> <ul style="list-style-type: none"> • Return to school, or • Return to work, or • Allowed to travel on public transportation 	<p>Discharge from airborne isolation client must meet all of the following criteria:</p> <ol style="list-style-type: none"> 1. Receiving and tolerating appropriate multidrug anti-TB regimen 2. Demonstrated adherence to DOT 3. Demonstrated clinical improvement 4. Have 3 consecutive AFB (-) cultures
<p>*If needed, consult with a DSHS-recognized TB medical consultant</p>		

Adapted from "Guidelines for Home and Hospital Isolation of Infectious Tuberculosis Patients", by Heartland National TB Center, 2017.

E. Obtain consent for treatment and care.

1. Maintain signed consent forms in client's medical record.

2. If client moves to another jurisdiction, consent forms must be prepared by the receiving jurisdiction and submitted to the client for signature.
- F. Develop treatment and case management plan.
1. Develop an initial treatment and case management plan for each client within one week of diagnosis (i.e. within one week of initiation of therapy for a person suspected to have TB or the identification of a positive culture).
 2. Create a written agreement describing the shared roles and responsibilities in the delivery of TB care services between a private provider and the TB program; present a written plan to the private provider and client to ensure proper treatment, coordination of care, and reporting.
Example: If a private provider submits a report to the local health department of a possible or confirmed TB case, the local health department retains ultimate responsibility for the overall treatment and care of the client. This means ensuring that treatment plans align with DSHS standards of care, obtaining routine updates (i.e., monthly TB 400B and progress notes), and reporting disposition to the Surveillance Branch when therapy is discontinued.
 3. Facilitate establishment of a medical home, as needed. Regardless of client's insurance status, identify local community resources which serve indigent clients and the uninsured, and refer as appropriate. If available, provide referrals for clients needing primary or specialty clinical care:
 - a. Uninsured patients may be referred to Federally Qualified Health Centers (FQHCs) to ensure they have access to primary and specialty care (see <http://www.dshs.texas.gov/chpr/fqhcmmain.shtm>).
 - b. Indigent patients may qualify for medical assistance in their county of residence (see <http://www.dshs.texas.gov/cihcp/default.shtm>).
- G. Consider TB screening parameters.



1. Routine testing with both tuberculin skin test (TST) and interferon gamma release assay (IGRA) is not recommended. If IGRA is chosen, it should be used in place of, but not in addition to TST.
2. Performing both a TST and an IGRA may be considered in the following situations:
 - a. The initial test is negative and there is an increased risk for infection, disease progression, or a poor outcome (e.g., HIV-infected individuals, children less than five years of age).
 - b. The initial test is negative and clinical suspicion exists for TB disease (e.g., individuals with symptoms, signs, and/or radiographic evidence suggestive of TB disease) and confirmation of TB infection is desired.
 - c. The initial test is positive and additional evidence of infection is required to encourage client compliance (e.g., in foreign-born health-care workers who believe their positive TST result is attributable to BCG). A positive IGRA might prompt greater acceptance of treatment for TB infection compared with a positive TST alone.
 - d. The initial test is positive in healthy client with a low risk for TB infection and disease progression.
 - e. If both an IGRA and TST are performed and discordant results are obtained, the provider will make the final determination based upon client risk factors, examination, and epidemiologic trends.
3. IGRAs should be used in contact investigations, testing during pregnancy, and screening of health care workers and others undergoing serial evaluation for TB disease and infection.
4. IGRA is the preferred method of testing for:
 - a. persons who have received Bacille Calmette-Guérin (BCG) as a vaccine or for cancer therapy;
 - b. persons from groups with historically poor rates of return for TST reading; or
 - c. persons who are two years of age or older (see DSHS SDOs for more information).
5. TST is preferred over IGRA for testing children less than two years of age.
6. TSTs or IGRAs are not recommended for persons with a low risk of developing TB infection or disease.

7. IGRA tests supported by DSHS funds must not be offered and provided to any organization or establishment without prior approval from the TB Branch.

H. Provide client education.

1. Provide initial and ongoing education to clients on:

- a. transmission and pathogenesis of TB;
- b. means to decrease transmission and the need for infection control;
- c. rationale for direct observed therapy (DOT);
- d. seriousness and importance of completing treatment;
- e. significance of conducting a complete and thorough CI;
- f. protected health information (PHI);
- g. adverse drug reactions and drug interactions of TB medications;
- h. the need for clients to discuss adverse drug reaction symptoms and other treatment concerns with nurse case manager as they occur;
- i. consequences of non-adherence to treatment; and
- j. collection of specimens (client produces and packages an unobserved specimen).

2. Document initial and ongoing education and counseling in client's medical record progress notes and also on DSHS TB-203 or equivalent.

I. Conduct screening and evaluation (see DSHS TB SDOs).

1. Perform screening for TB disease and infection. Determine the appropriate TB based upon:

- a. client's age;
- b. BCG status; or
- c. other factors as previously listed.

2. Conduct evaluation.

- a. Screen for TB signs and symptoms.
- b. Collect client medical and social history.
- c. Conduct physical exam.
- d. Collect sputum specimens per DSHS SDOs.
- e. Collect clinical specimens if warranted (see Table 2)
- f. Screen for existing risk for comorbid conditions (e.g., diabetes, HIV, hepatitis C virus [HCV], hepatitis B virus [HBV]).

3. Collect and review diagnostic results:

- a. Baseline test results
 - b. Chest radiograph (CXR); (see Table 3)
 - c. Acid-fast bacilli (AFB) smear results (see Table 4)
 - d. Drug susceptibility results (see Table 5);
(Note: Extended drug susceptibility testing must be performed on all isolates with resistance to any first line agent [e.g., isoniazid, rifampin, pyrazinamide and ethambutol])
4. Ensure shipment of initial isolate to DSHS laboratory in Austin for genotyping regardless of the laboratory that performed AFB smear and culture tests.
 5. Prepare a written control order (*Order to Implement and Carry Out Measures for Client with TB*) for persons with suspected (Class V) or confirmed TB disease (Class III).
 - a. Use DSHS TB-410 or equivalent; this form is required even if the client refuses to sign. Note the date and time it was provided to the client.
 - b. Deliver the written control order in the client's preferred language.
 - c. Document in medical record, if an interpreter (or guardian) reads the control order to client before the client signs the control order.
 6. Monitor monthly adherence to treatment, response to treatment, and medication side effects or adverse reactions. Document in client record on DSHS TB-205 or equivalent.



Table 2. Types of Specimens Collected to Diagnose TB Disease

Suspected Diagnosis	Specimen Needed
Pulmonary or laryngeal TB	Sputum (phlegm from deep in the lungs). If a diagnosis of pulmonary TB cannot be established from routine sputum collection, whether natural or induced, other procedures may be necessary, including, bronchoscopy and gastric aspiration in children.
Extra-pulmonary TB	Anatomical sites include but are not limited to: <ul style="list-style-type: none"> • Urine • Cerebrospinal fluid • Pleural fluid • Pus or other aspirated fluid • Biopsy specimens • Blood (heparinized)

Adapted from "Controlling Tuberculosis in the United States: Recommendation from the American Thoracic Society, CDC, and Infectious Diseases Society of America, by Centers for Disease Control and Prevention, 2005, *Morbidity and Mortality Weekly Report*, 54(RR-12).



Table 3. Common Terminology on a CXR Report

CXR Finding	Meaning
Consolidation	Often referred to as an ill-defined opacity
Cyst/cavity	Focal spaces or "holes" in the lung: both indicate the absence of lung tissue; a cavity being more likely to be TB, and generally indicative of greatest infectiousness
Fibrosis	May or may not be active disease and requires further evaluation
Granuloma	A small, calcified nodule, usually not indicative of active disease
Opacity	A circumscribed area that appears nearly white (i.e. denser) than its surroundings; may be parenchymal, pleural, within the chest wall, or external to the patient
Lymphadenopathy	Enlarged lymph nodes seen as soft tissue densities: usually more indicative of active disease in a child
Miliary	Many tiny nodules resembling millet seeds scattered throughout
Nodule	Discrete opacity measuring 2 to 30 mm in diameter
Mass	Discrete opacity (nodule) greater than 30 mm in diameter; often indicative of a carcinogenic process

Adapted from *"Tuberculosis Nursing: A Comprehensive Guide to Patient Care (2nd ed.)*, by National Tuberculosis Controllers Association, 2011; *"Radiographic Manifestation of Tuberculosis (2nd ed.)*, by Curry International Tuberculosis Center, 2011.



Table 4. Smear Classification Results

Quantity Reported*	DSHS Laboratory Quantitation	Smear Result	Infectiousness of Client
4+ /numerous (>9/field)	>10/field	Strongly positive	Probably very infectious
3+ /few- numerous (1-9/field)	1-10/field or >10/field	Strongly positive	Probably very infectious
2+ /few (1-9/10 fields)	<1/field or 1-10/field	Moderately positive	Probably infectious
1+ /rare (1-9/100 fields)	<1/field	Moderately positive	Probably infectious
Actual number of AFB seen (no plus sign) (1-2/300 fields)	1 or 2 AFB seen on entire smear	Weakly positive [†]	Probably infectious
No acid-fast bacilli seen	No AFB seen on direct smear	Negative	Probably not infectious ^β

* Note: Reporting methods may vary by laboratory. Check with your laboratory for specific interpretation.

[†] Laboratories may report these smear results as "doubtful" or "inconclusive" based on CDC guidelines.

^β The criteria for determining whether a client may be considered noninfectious are discussed in Module 5: "Infectiousness and Infection Control" of the CDC's *Self-Study Modules on Tuberculosis*.

Adapted from "Core Curriculum on Tuberculosis: What the Clinician Should Know (6th ed.), by Centers for Disease Control and Prevention, 2013; "Tuberculosis



Nursing: A Comprehensive Guide to Patient Care (2nd ed.), by National Tuberculosis Controllers Association, 2011.

Table 5. Drug Susceptibility Patterns

Category	Sensitivity patterns
Pan-sensitive	Sensitive to streptomycin, isoniazid, rifampin, ethambutol and pyrazinamide
Mono-resistant	Resistant to one first-line anti-TB drug only
Poly-resistant	Resistant to at least two first-line anti-TB medications (but not both isoniazid and rifampin)
Multi-drug resistant	Resistant to at least both isoniazid and rifampin
Pre-extensively drug resistant	Resistant to isoniazid and rifampin, plus resistant to any fluoroquinolone or at least one of three injectable second-line drugs (such as amikacin, kanamycin, or capreomycin)
Extensively drug resistant	Resistant to isoniazid and rifampin, plus resistant to any fluoroquinolone and at least one of three injectable second-line drugs

Adapted from "*Tuberculosis Nursing: A Comprehensive Guide to Patient Care (2nd ed.)*", by National Tuberculosis Controllers Association, 2011.



Table 6. Estimating Beginning of Infectious Period

Index Patient Characteristics						Likely Beginning of Infectiousness Period
TB Symptoms		AFB Bacilli Sputum Smear (+) Results		Cavitary CXR		
Yes	No	Yes	No	Yes	No	
✓			✓		✓	Three months prior to symptom onset or first positive finding consistent with TB disease (whichever is longer)
✓		✓		✓		Three months prior to symptom onset or first positive finding consistent with TB disease (whichever is longer)
	✓		✓		✓	Four weeks before the date of suspected diagnosis.
	✓	✓		✓		Three months prior to first positive finding consistent with TB disease

Adapted from "Guidelines for the Investigation of Contacts of Persons with Infectious Tuberculosis", by California Department of Public Health TB Control Branch and California TB Controllers Association, 2009; "Guidelines for the Investigation of Contacts of persons with Infectious TB: Recommendation from the National TB Controllers Association and CDC and Guidelines for Using QuantiFERON®-TB Gold Test for Detecting *Mycobacterium tuberculosis* Infection, United States", by Centers for Disease Control and Prevention, *Morbidity and Mortality Weekly Report*, 54(RR-15), 2005; MMWR, 2005, 54 (No. RR-15):7; and "Tuberculosis Nursing: A Comprehensive Guide to Patient Care (2nd ed.)", by National Tuberculosis Controllers Association, 2011.

7. Conduct monthly follow-up laboratory tests and assessments as per DSHS SDOs; document results and subsequent interventions as necessary.
- J. Establish and maintain client record (see DSHS SDOs).
1. Organize medical records according to locally determined chart order with clear section divisions.
 2. Ensure that all documents are securely attached.
 3. Ensure the accuracy of documentation.
 4. Date and sign all entries in progress notes and draw a line through blank areas.
 5. Document in chronological order.
 6. Draw a single line through errors and initial.
 7. Establish a locally-approved list of abbreviations.
- K. Document case management and treatment activities.
1. Document assignment of nurse case manager and all other case management team members on DSHS TB-201 (or equivalent)
 2. Maintain copies of DSHS TB-400A; provide copy of DSHS TB-400A or RVCT to TB case registrar within 14 business days of initial report or referral to TB program.
 3. Document completed medical and social history on DSHS TB-201 or equivalent.
 4. Document start date of treatment regimen to include medication, dosage, frequency, and route of administration on DSHS TB-400B (provider order form or equivalent); include client's weight.
 5. Document changes in treatment regimen on DSHS TB-400B.
 6. Document laboratory and other diagnostic results to include, but not limited to:
 - a. AFB smear result;
 - b. culture results;
 - c. susceptibility results; and
 - d. CXR results.
 7. Document hospitalizations, TB medical consultations, or extension of therapy.
 8. Document all client services on DSHS TB-201 or equivalent.
- L. Initiate standard therapy as ordered.
1. Treatment for pan-susceptible TB includes two phases:



- a. **Initial treatment phase:** isoniazid (INH), rifampin (RIF), ethambutol (EMB), and pyrazinamide (PZA) for the first eight (8) weeks, or until susceptibilities are known
 - b. **Continuation treatment:** INH and RIF for the remaining months
2. Document every directly observed dose of medication administered to the client; if a client takes self-administered doses on the weekend, do not count the number of weekend doses towards completion of therapy.
3. Manage interruptions in therapy.
 - a. When any interruption of **less than 14 cumulative days occurs during the initial phase** of treatment for TB disease, **the treatment can continue.**
 - i. If total **initial phase treatment is not completed in 10 weeks**, the treatment will need to be **restarted**.
 - ii. Contact the licensed healthcare provider for instructions.
 - b. When any **interruption of 14 or more cumulative days occurs in the initial phase** of treatment for TB disease, the treatment regimen will need to be **restarted**.
 - i. If treatment is **discontinued for drug intolerances, the client must be on an empiric regimen** considered adequate (RIP [RIF, INH, PZA], RIE [RIF, INH, EMB], or RPE [RIF, PZA, EMB]) for doses to count towards completion of therapy.
 - ii. If susceptibilities are known and there is **no resistance to INH or RIF**, then **once the client is on both INH and RIF, doses can count towards completion of therapy**.
 - iii. Contact the licensed healthcare provider for instructions.
 - c. **If a patient misses a cumulative total of 3 months of doses during the continuation phase and less than 80% of planned doses in the continuation phase are completed**, the treatment will need to be **restarted**.
 - i. Collect 3 sputum specimens for AFB smear and culture.
 - ii. Contact the licensed healthcare provider for instructions.
4. If a patient **misses a cumulative total of 3 months of doses during the continuation phase and 80% or more of planned**

doses in the continuation phase are completed, additional treatment may not be necessary.

- i. However, clients who initially had sputum smears positive for AFB should receive additional therapy.**
- ii. Contact the licensed healthcare provider for instructions.

M. Provide DOT and document on DSHS TB-206 (DOT log).

1. Provide DOT to all clients with suspected or confirmed TB disease until client is no longer listed as a suspect and classified as a non-count, or until completion of a recommended course of therapy for persons with TB disease. DOT is the standard of care in Texas.
2. If DOT is not provided, document reason in the clinical record.
3. Complete all appropriate fields on DSHS TB-206 or equivalent.
4. Indicate clearly on DOT log which medications are provided. Note any medication change on the log and sign.
5. Pursue appropriate actions when a DOT or clinic appointment is missed, up to and including court-ordered management.

N. Ensure clients are managed and respond to therapy.

1. Initiate a consult from a DSHS-recognized medical consultant.
 - a. Indicators for consultation are listed in the DSHS SDOs.
 - b. Consults are required for any clients with drug-resistant TB.
 - c. For clients not adequately responding to therapy, or for clients with risk factors for poor absorption of medication, consider serum drug levels. See Therapeutic Drug Monitoring Process at <http://www.dshs.texas.gov/idcu/disease/tb/forms/>.
2. Maintain oversight of clients receiving TB care from a private provider or other entities such as a federally qualified health care center to ensure DSHS treatment standards are followed. State-purchased medications cannot be used to support a medication regimen that does not align with DSHS treatment standards.

O. Close the client's medical record. Indicate one of the following:

1. Completion of adequate therapy
 - a. Treatment completed within 12 months
 - b. Exceptions to completion within 12 months apply if:
 - i. client has MDR or XDR TB;
 - ii. isolates show resistance to rifampin;
 - iii. client is less than 15 years of age with miliary disease; or



- iv. client has meningeal disease.
- 2. Non-TB
- 3. Deceased
- 4. Moved out of country
- 5. Lost to Follow-Up (LTFU).
 - a. Make at least three attempts to contact a TB client before considering a client as LTFU to include:
 - i. Calling the client
 - ii. Visiting the client's residence
 - iii. Sending a certified-mail notification of the client's need to follow-up with clinic
 - b. Document attempts in the progress notes of client's medical record.
 - c. Placing the certified mail notification receipt in the client's medical chart.

VI. Medication Ordering and Storage

General Requirement

TB Programs will order and store DSHS-purchased medications in accordance with DSHS standards.

Activities

- A. Follow DSHS-established criteria for the use of TB program medications.
- B. Designate a staff member to oversee the ordering and management of DSHS-purchased to ensure that:
 - 1. DSHS-purchased medications are used for the outpatient treatment of TB disease or TB infection only (including window prophylaxis).
 - 2. Medications are used for clients who have a medical record established at the clinic providing the medication.
 - 3. The clinic supplying the medications retains overall responsibility for the care of the client.
 - 4. TB medications and supplies are used in a prudent manner and are not distributed to entities for which local/regional TB programs do not provide treatment oversight.
 - 5. Clinics do not charge clients for medications or seek third party reimbursement (including Medicaid reimbursement), as medications are provided to TB programs at no cost.
- C. Follow DSHS- established procedures for TB medication inventory management.
 - 1. Order TB medications and reconcile inventory through the DSHS Inventory Tracking Electronic Asset Management System (ITEAMS).
 - 2. Limit medication orders to a one-month supply as the Pharmacy Branch typically fulfills orders within 24 hours of order receipt.
 - 3. Set maximum stock levels to no higher than a one-month average usage.
 - 4. Monitor and manage usage of TB medications and testing supplies furnished by DSHS in accordance with first-expiring-first-out (FEFO) principles of inventory control.

5. Avoid waste by ordering packets for clients new to therapy with individual drugs to avoid waste (e.g. 10 packets of Rifampin, 10 packets of Isoniazid) to maximize usage.
6. Ensure TB medications and supplies purchased with TB Branch funds are not distributed to entities for which local or regional TB program do not provide treatment oversight.

D. Order medications for clients diagnosed with suspected or confirmed TB disease, those needing window prophylaxis, or clients with TB infection in accordance with the DSHS TB formulary (see Appendix A) and per provider orders.

1. Order medication for directly-observed therapy (DOT) in DOT packets. DOT-packaged medications have a much shorter expiration date than their original manufacturer expiration date, typically two-to-six months after packaging. Therefore, if one medication in the packet expires, the entire packet must be disposed.
2. Order medication packets for self-administered therapy (SAT) or video-enabled directly observed therapy (VDOT). These may be ordered in the same way as DOT packets from the Pharmacy Branch. If the medications will be in the patient's possession, certain labeling requirements must be met for packaging (e.g., amber zip-closure bag) containing DOT packets.
 - a. The label should be prepared and affixed to the zip-closure bag by the facility providing the medications to the patient.
 - b. The label must include (see sample label in Figure 1):
 - i. the name and address of the medical director or physician who prescribed the drug;
 - ii. the date the drug is delivered to the patient;
 - iii. the patient's name; and
 - iv. the name, strength, and directions for use of the drug(s).
3. Refer to DSHS the Video-Based Directly Observed Therapy Required and Recommended Activities (<http://www.texastb.org>).

E. Order auxiliary medications for clients needing supportive therapy, when all other resources for obtaining the medication have been exhausted. These may include, but are not limited to:

1. anti-emetics;
2. lidocaine; and



3. corticosteroids.

F. Order second-line TB medications when indicated (see Table 7).

1. For clients diagnosed with drug resistance, including rifampin resistance, MDR, pre-XDR, or XDR TB, notify the TB Branch at Tbepievaluation@dshs.texas.gov and send the following to the TB Branch via PHIN. The notification must include:

- a. physician's note indicating the medical necessity for the second-line medication;
- b. DSHS form DSHS TB-400B or equivalent; and
- c. DSHS-recognized TB medical consultant letter/email or Texas Center for Infectious Diseases (TCID) discharge summary recommending second-line medications (when applicable).

XX County Public Health Department
123 Main St.
Houston, TX 77000
713-555-1212

Date: 01/01/2018

Physician: John Watson, MD
Patient: Jane Doe

Medications: Rifampin 600mg, Isoniazid 300 mg., Pyrazinamide 1600 mg,
Ethambutol 800mg, Pyridoxine 50mg
Instructions: Take 2 packets each day

Figure 1. Sample medication label

2. For clients NOT diagnosed with drug-resistant TB, and second-line medications are ordered, notify the TB Branch at Tbepievaluation@dshs.texas.gov (copy nurse case manager consultant). Send notification via the PHIN and include:
- a. DSHS TB-400B or equivalent; and

- b. DSHS-recognized medical consultant letter/email or Texas Center for Infectious Diseases (TCID) discharge summary recommending second-line medications (when applicable).

G. Store medications safely and securely.

1. Store medications in accordance with manufactures' instructions. The following temperature and humidity ranges reflect the most common storage conditions for medications:
 - Freezer: -25° C to -10° C (-13° F to +14° F)
 - Refrigerator: 2° C to 8° C (36° F to 46° F)
 - Controlled Room Temperature: 20° to 25° C (68° to 77° F)
 - Dry: not exceeding 40% relative humidity at controlled room temperature
2. Keep all medications and medical devices in a secured area not accessible to the public. Keep medications in a locked storage cabinet or drawer in a controlled-access area. Limit personnel access to this area.

Table 7. Second-line Medications

Injectable Agents	capreomycin, amikacin, streptomycin;
Fluoroquinolones	levofloxacin, moxifloxacin;
Bacteriostatic Agents	ethionamide, para-aminosalicylic acid, cycloserine; and
Other Agents:	linezolid, clarithromycin, azithromycin

*Second line medications include, but are not limited to these groups

H. Reconcile medication inventory.

1. Maintain a count of DSHS-purchased medications and supplies.
2. Reconcile bulk inventory according to product and lot numbers listed in ITEAMS no later than the seventh working day of each month. Bulk medication inventory refers to bottles of medications, as opposed to medication packets.



3. Transfer products that have not been used in six to nine months (or will not be used in six to nine months) to another TB program where demand is greater.
4. Record the transfer to another TB program facility as a “transfer order” by selecting the reason from the ITEAMS drop down list.
5. Establish policies and procedure for the disposal of expired/non-usable medications.
6. Coordinate with ITEAMS inventory staff to ensure TB orders comply with best practices.
7. Store all DSHS-purchased medications properly and securely in accordance with manufacturer’s instructions.

VII. Conduct and Manage a TB Contact Investigation

General Requirement

TB programs will conduct a contact investigation (CI) for persons with suspected (Class 5) or confirmed (Class 3) pulmonary, pleural or laryngeal TB disease and evaluate, treat, and monitor their contacts. The goal of a CI is to find exposed persons (contacts) who are likely to be infected or progress to TB disease and to prevent further transmission.

Activities

- A. Initiate a contact investigation.
 1. Conduct initial interview within three working days of a case being reported to the TB program with suspected or confirmed TB diagnosis.
 2. Visit the primary residence of a client within three working days of initial report or notification.
 - a. Visit the primary location where the client sleeps
 - b. Visit additional sites where significant transmission or exposure may have occurred.
 3. Interview the index case (or a parent or guardian for younger children or the next of kin for the client diagnosed at death).
 - a. The interview should take place in the primary language of the client or their representative, using an interpreter if needed.
 - b. Clients who are sputum smear AFB positive and/or with CXRs revealing cavitation, must have a second interview conducted seven days after the initial interview.
- B. Determine period of infectiousness (see DSHS TB-425 *TB Infectious Period Calculation Worksheet*).
 1. The infectious period generally begins three months prior to the onset of symptoms (see Table 6).
 2. Determine date in which contact was broken based upon:
 - a. date of physical separation from the index case or
 - b. date that the index case is no longer considered infectious.
- C. Prioritize all contacts into high, medium, or low categories (see Table 8).
 1. Consider index case characteristics (e.g., site of TB disease, AFB smear results).
 2. Consider contact characteristics (e.g., <5 years of age, HIV status).



Table 8. Prioritizing Contacts

Index Case Characteristic	Contact Prioritization
<p>Pulmonary/ laryngeal/ pleural TB</p> <ul style="list-style-type: none"> • Cavitory lesion on CXR; or • AFB sputum smear positive 	<p>High Priority</p> <ul style="list-style-type: none"> • All household contacts; <i>or</i> • Contact in a congregate setting (schools, detention facilities, etc.); <i>and</i> with significant frequency and duration of exposure <p>Any hours of exposure for:</p> <ul style="list-style-type: none"> • Children < 5 years; <i>or</i> • Contact with medical risk factors (e.g., HIV, immune compromising condition); <i>or</i> • Contact exposed during specific medical procedures (bronchoscopy, sputum induction, <i>or</i> autopsy). <p>Medium Priority</p> <ul style="list-style-type: none"> • Anyone 5 – 15 years who does not meet one of the high priority criteria; <i>or</i> • Contacts with significant frequency and duration of exposure. <p>Low Priority</p> <ul style="list-style-type: none"> • Only consider if expansion is warranted.
<p>Suspect or confirmed pulmonary/ pleural TB</p> <ul style="list-style-type: none"> • Abnormal CXR consistent with TB disease; and • AFB sputum smear negative; and • Might be NAAT positive and/or AFB culture positive 	<p>High Priority</p> <ul style="list-style-type: none"> • All household contacts; <i>and</i> • Contacts with significant frequency and duration of exposure. <p>Any hours of exposure for:</p> <ul style="list-style-type: none"> • Children < 5 years; <i>or</i> • Contact with medical risk factors (e.g., HIV, immune compromising condition); <i>or</i> • Contact exposed during specific medical procedures (bronchoscopy, sputum induction, <i>or</i> autopsy). <p>Medium Priority</p> <ul style="list-style-type: none"> • Contact in a congregate setting (schools, detention facilities, etc.); <i>and</i> • Contacts with significant frequency and duration of exposure. <p>Low Priority</p> <ul style="list-style-type: none"> • Only consider if expansion is warranted.

Adapted from Guidelines for the Investigation of Contacts of persons with Infectious TB: Recommendation from the National TB Controllers Association and CDC and Guidelines for Using QuantiFERON®-TB Gold Test for Detecting *Mycobacterium tuberculosis* Infection, United States, by Centers for Disease Control and Prevention, *Morbidity and Mortality Weekly Report*, 54(RR-15), 2005.

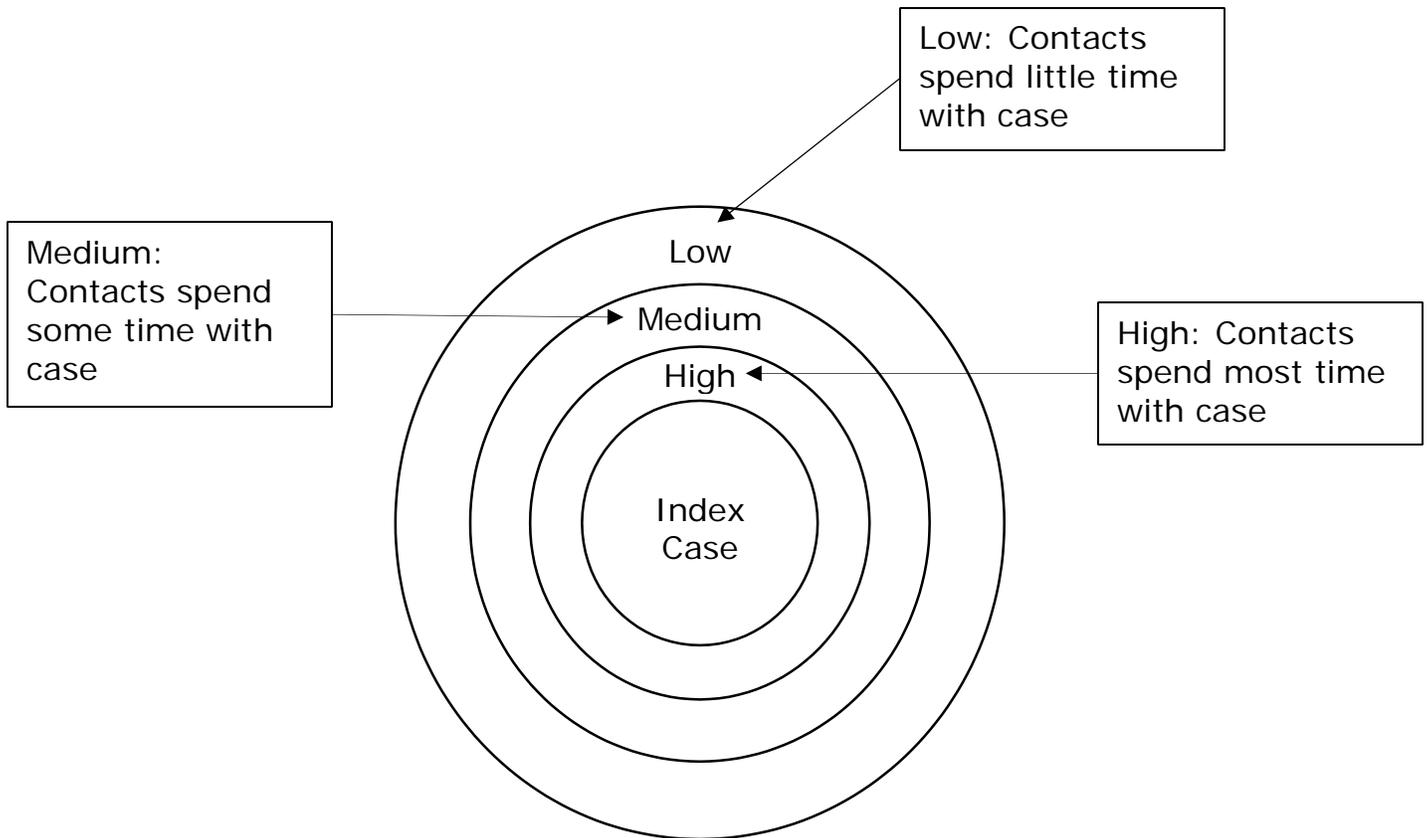


Figure 2. Concentric circle of exposure risk

Adapted from "Contact Evaluation and Public Health Management," by New York City Department of Health and Mental Hygiene, 2008, *Tuberculosis: Clinical Policies and Protocols* (4th ed.).

3. Calculate weekly and cumulative exposure hours.
 - a. Consider "concentric circle" approach to further prioritize contacts based upon exposure risk (Figure 1).
 - b. Contacts with greatest duration of time spent with case have highest risk of exposure and should be tested first.
 - c. Extend testing extended to other contacts with less exposure only if significant transmission is observed.
4. Consider exposure setting (e.g. size, indoors/outdoors, windows).
5. **Do not initiate a CI without first prioritizing contacts.**

- D. Conduct first and second round screening.
1. Contacts potentially exposed during the infectious period are eligible for first round screening.
 - a. Avoid testing individuals with low risk of infection.
 - b. IGRA as the *preferred* testing choice in Texas. TST may be used, if IGRA is contradicted or refuses phlebotomy.
 2. Initiate and complete first round screening within four weeks of identification.
 - a. Initiate screening for high priority contacts within seven working days of identification.
 - b. Evaluate high-risk contacts first, to include, but not limited to:
 - i. children younger than 5 years old;
 - ii. clients who have HIV infection or at high risk for HIV infection;
 - iii. clients who have an immunocompromising condition; or
 - iv. clients receiving immunosuppressive therapy
 3. A complete evaluation generally includes:
 - a. a contact interview to obtain relevant medical history to include specific questions about symptoms of TB disease (symptom screen), previous positive IGRA or TST and/or previous treatment for TB;
 - b. administration and reading of a TST or IGRA;
 - c. a CXR; and/or
 - d. collection of sputum/other specimens for examination.
 4. Begin second round screening eight to ten weeks after break in contact.
 - a. Test all contacts whose initial IGRA or TST results were negative after documented contact break with the index, including contacts started on window prophylaxis.
 - b. Contacts continuing to remain negative and asymptomatic at second round testing have received a complete evaluation.
 5. If a contact is identified *after* first round screening was initiated, they are still eligible for second round screening; only one test is needed for a complete evaluation.
- E. Consider CI expansion if the infection rate is high or if TB disease is detected (see DSHS TB-460 *Expansion Analysis Check-List*).
1. Consider factors associated with an increased risk for progression to TB and transmission before deciding whether to expand a CI.
 2. An investigation should not be expanded without first reviewing results of screening among high priority contacts.



3. The TB Branch generally uses an infect rate of $\geq 20\%$; this percentage should be modified based on sentinel events.
4. Initiate screening for medium priority contacts after the rate of infection among high priority contacts indicate transmission.
5. As needed, request a consult with DSHS TB Branch epidemiologists to discuss whether an expansion of the investigation is warranted below medium-priority contacts. Submit request to TBEpiEvaluation@dshs.texas.gov.

F. Notify the TB Branch of mass screenings or concerning CIs within 48 hours.

1. Submit form EF-12-12104 (TB incident report or equivalent) via PHIN for CIs involving:
 - a. ≥ 50 persons identified for screening in a single location;
 - b. ≥ 25 persons in a K-12 school; and/or
 - c. media involvement
2. Seek consultation with TB Branch epidemiologists or TB Nurse consultant
3. Submit timely written updates to the TB Branch as updates as updates are available (or as requested) that may include the following:
 - a. NAAT results
 - b. Environmental assessment to determine specific areas in which exposure; occurred and the exposure period
 - c. Stratification of contacts by risk
 - d. Scheduled and actual dates of screening
 - e. Screening methods (i.e. IGRA/TST)
 - f. Evaluation results based on risk stratification (all high-risk contacts should be tested first to determine the need for expansion)
 - g. Any other relevant details
4. Use sound epidemiologic principles in contact investigations to ensure appropriate persons are identified for screening and to determine specific environments in which transmission may have occurred.
5. Mass screenings using DSHS-purchased supplies should not be performed without prior TB Branch approval.

G. Manage contacts to a relapsed case.

1. Retest those contacts whose prior TST or IGRA results were negative.
2. Test any new contacts identified since therapy was completed.

- H. Consult a DSHS-recognized medical consultant if treatment is recommended for contacts of a MDR-TB or XDR case (see <http://www.dshs.texas.gov/idcu/disease/tb/consultants/>).
- J. Conduct interviews throughout the client's treatment period.
1. For each newly identified contact, document the date of identification and the date of a break in contact with the index.
 2. Re-interview client one to two weeks after initial interview to obtain and/or clarify missing data. Consider using different interviewers.
 3. Additional client/contact interviews may be required when:
 - a. susceptibility results indicate drug resistance; or
 - b. genotyping results indicate the client is part of a cluster.
- H. Coordinate CI activities with the medical staff and administrators in congregate setting within the TB program's jurisdictions:
1. Collect names and evaluation results of contacts in congregate facilities
 2. Collect names and locating information for community contacts
 3. Provide technical assistance and guidance when expansion of CI activities is necessary
 4. Consult DSHS congregate settings coordinator as needed
- I. Consider and act (i.e., additional interviews, CI expansion) on indicators of recent transmission:
1. Infection rates of high and medium priority contacts exceed background prevalence of TB infection in the community
 2. Positive TSTs in contacts less than 5 years of age
 3. A change in TST or IGRA status from negative to positive among contacts between first and second-round testing
 4. Contacts diagnosed with TB disease
- J. Use genotyping information in contact and cluster investigations (see <https://sams.cdc.gov>).
1. Establish TB GIMS user account for key TB program staff; contact TB Branch epidemiologists for assistance.
 2. Review TB GIMS reports to confirm/refute suspected epidemiological links among cases identified through routine contact investigations.



3. Note epidemiologic links to cases in their records and surveillance database; update and report as new epidemiologic links are identified.
 4. Conduct monthly reviews of genotyping information to assess and monitor concerning local contact investigations and clusters.
 5. Ensure that key data such as infectious periods, medical history, treatment completion history, etc., are updated.
 6. Consult with TB Branch epidemiologists on complex, sensitive, or extended CIs or in the identification of multi-drug resistant (MDR) or extensively drug resistant (XDR) TB cases that share a genotype.
 7. Also consult with TB Branch epidemiologists when a false positive TB culture is suspected.
- K. Conduct airline exposure screening based on notifications received from the TB Branch through the CDC Division of Global Migration and Quarantine (DGMQ).
1. TB Branch epidemiologists will contact TB programs to provide the name and phone number of the individual(s) exposed during the flight per the CDC DGMQ staff.
 2. Locate contacts and instruct them to report to health department for TB screening.
 3. Complete the DGMQ TB Contact Investigation Form and submit via PHIN to the TB Branch within ten business days of notification.
 4. Provide RVCT and contacts to surveillance branch.

VIII. Manage Contacts to Confirmed or Suspected TB Cases

General Requirement

TB programs will evaluate, treat, and monitor contacts to suspected or confirmed cases of pulmonary, pleural, or laryngeal TB disease in accordance with current DSHS SDOs.

The goal of contact management is to evaluate contacts promptly, initiate treatment when indicated, and ensure completion of effective therapy whether TB infection or disease is identified

Activities

- A. Evaluate high priority contacts. Consider the testing results of high priority contacts before addressing any medium or low priority contacts.
1. Conduct medical evaluations of high-priority and if CI is expanded, medium-priority contacts.
 2. Face-to-face physician medical evaluation at diagnosis is preferable for initiation of treatment or resumption of medications.
 3. Refer for and obtain a CXR, if the initial IGRA or TST result is positive and no history exists of a previously positive TB test within 14 calendar days. TB programs with on-site radiograph equipment should obtain a CXR within ten (10) calendar days.
 4. Assess for TB disease if a contact tests positive and exhibits symptoms for TB disease and/or has an abnormal CXR (see Section V of TB Work Plan).
 5. If the IGRA or TST result is positive and the CXR is normal and/or TB disease has been ruled out, consider treatment for TB infection.
 6. If a previously positive contact did not treatment for TB infection, evaluate for TB disease, which includes a symptom review and a chest x-ray. If here is no indication of disease, consider treatment for TB infection.
 7. If a previously positive contact completed treatment for TB infection, further treatment may not be required unless recommended by the treating physician. Consider the type treatment completed and susceptibilities of index case.

8. Review and assess the completeness of the contact's medical evaluation (see Section VII of the TB Work Plan).
- B. Consider DST results of the index case in determining a contact's course of treatment.
1. All contacts to MDR-TB, pre-XDR, or XDR TB cases must receive a consultation from DSHS-recognized medical consultant.
 2. For contacts treated with INH in the past and are now exposed to an INH-resistant case, RIF may be needed for the new exposure.
 3. Provide DOT for contacts to MDR, pre-XDR, or XDR TB cases who are diagnosed with TB infection; consider video DOT when appropriate.
- C. Follow DSHS SDOs in determining treatment regimens.
1. Provide medications in accordance with DSHS SDOs.
 2. Document completion of treatment appropriate reporting form, DSHS B-400A or equivalent.
 3. Document the reason medication was stopped, if treatment was not completed.
 4. Conduct at least monthly review of adherence to TB infection treatment.
 5. Conduct monthly review of adverse reactions to TB infection treatment.
 6. Contacts receiving treatment for TB infection who develop signs and/or symptoms suggestive of TB disease should have their medications on hold, and should receive a follow-up CXR before continuing on treatment for TB infection.
- D. Manage high-risk contacts.
1. Provide window prophylaxis to eligible contacts (see SDOs for criteria), if no contraindications to treatment exist, even if they are asymptomatic, have a negative TST/IGRA result, and a normal CXR.
 2. If the repeat TB screening test remains negative 8-10 weeks after break in contact for children 5 years of age and under, then treatment can be discontinued.
 3. If the repeat TB screening test remains negative after 8 weeks or more from break in contact to infectious TB (beyond the window period) for clients with HIV infection, clients receiving immunosuppressive therapy for organ transplantation, or clients taking TNF- α inhibitors, then it is



recommended to complete a full course of treatment for TB infection beyond the window period.

4. The decision to treat, however, is based on a physician's assessment and diagnosis. HIV-infected individuals may need the results of the smears, cultures, or other rapid diagnostic procedures on appropriate specimens to differentiate between TB infection and active TB disease.

E. Manage delays or interruption in treatment for TB infection.

1. Clients who report or begin to exhibit symptoms suggestive of TB disease should have a follow-up CXR before continuing on treatment for TB infection.
2. Clients who have *not started treatment* for latent TB infection *within one month* of the initial CXR showing no abnormalities suggestive of TB disease AND are at high risk of progression to active TB disease must have a repeat CXR showing no abnormalities suggestive of TB disease prior to the initiation of therapy. High risk clients include:
 - a. children younger than 5 years old;
 - b. clients who have HIV infection or at high risk for HIV infection;
 - c. clients who have an immunocompromising condition or other clinical condition that is associated with progression to active TB (such as substance abuse, silicosis, underweight by more than 5%, diabetes, chronic renal failure, gastrectomy, jejunoileal bypass, solid organ transplantation, head and neck cancer);
 - d. clients receiving immunosuppressive therapy;
 - e. clients with a documented change in TB screening test results from a negative to positive and other clients who have been recently infected with TB (such as close contacts of a person with infectious TB disease, clients who have immigrated from areas of the world with high rates of TB, clients within groups having high rates of TB transmission [homelessness, injection drug users] or within groups who work or reside with people who are at high risk for TB in facilities or institutions [hospitals, homeless shelters, correctional facilities, nursing homes, residential homes for those with HIV]); and
 - f. clients with pulmonary fibrotic lesions seen on CXR (presumed to be from prior, untreated TB).
3. Clients who have an *interruption* in latent TB infection treatment *longer than one month during the first 2 months of treatment* AND are



at high risk of progression to active TB disease (see list above) must have a repeat CXR showing no abnormalities suggestive of TB disease prior to the re-initiation of therapy. Otherwise, reimaging is not necessary unless the client has symptoms consistent with active TB disease.

4. All other clients who are **NOT** at high risk of progressing to active TB disease who have *not started treatment for TB infection **within 6 months*** of the initial CXR showing no abnormalities suggestive of TB disease must have a repeat CXR showing no abnormalities suggestive of TB disease prior to the initiation of therapy.
 5. All other clients who are not at high risk of progressing to active TB disease who have an interruption in latent TB infection treatment and treatment needs to be re-started from the beginning must have a repeat CXR showing no abnormalities suggestive of TB before therapy is re-started
- H. Provide initial and ongoing education on the following topics:
1. TB epidemiology, transmission, and pathogenesis
 2. Signs and symptoms associated with progression to TB disease.
 3. Importance of completing treatment
 4. Confidentiality of client information
 5. Rationale for DOT when necessary or required
 6. Common adverse drug reactions and drug interactions of TB medications
 7. Responsibility of contact to discuss symptoms of adverse drug reactions with their clinic nurse, physician, or DOT provider
 8. Signs and symptoms associated with progression to TB disease.
 9. Instruct client to contact the TB clinic staff for follow-up evaluation, if symptoms of TB disease occur at any time.

IX. Manage False Positive Investigations

General Requirement

TB programs will manage false positive investigations in accordance with local policies and procedures. TB programs may initiate a false positive investigation independent of the TB Branch.

Activities

- A. Determine the need for a false positive investigation when:
 1. a single positive culture for *Mycobacterium tuberculosis* (*M.tb*) exists for a patient; and
 2. the treating physician suspects the clinical presentation is not consistent with culture findings.
- B. Notify the local health authority if a false positive investigation is warranted.
- C. Consider consulting with a DSHS-recognized medical expert.
- D. Initiate the false positive investigation.
 1. Complete the *False Positive Investigation Worksheet* (see <http://www.dshs.texas.gov/IDCU/disease/tb/forms/DOCS/FPWorksheet.doc>) or equivalent.
 2. Contact the originating laboratory to determine source of the false-positive result (e.g., lab contamination vs. specimen collection error).
 3. Use genotyping data to support the investigation.
 4. Upon conclusion, provide a letter summarizing the results of the investigation and include in the patient record, if warranted.
- E. Request TB Branch assistance as needed.
 1. Submit completed *False Positive Investigation Worksheet* and supporting documentation.
 2. The TB Branch will convene a meeting with appropriate parties to discuss findings.
 3. The TB Branch will provide a letter to the requesting TB program summarizing results of the investigation and conclusions.



4. The TB Branch **cannot** provide treatment recommendations or confirm/refute the possibility of a false positive culture result. Tuberculosis B is a clinical diagnosis and the patient's treatment plan should always be directed by clinical findings as determined by the licensed healthcare provider in conjunction with laboratory information.

F. Report closed cases due to false positive results to the Surveillance Branch with supporting documentation (e.g., amended laboratory report, medical consultation, provider notes) justifying change in case status within 45 days of closure.

X. Conduct Targeted Testing

General Requirement

TB programs will identify high-risk groups and congregate settings for which testing for TB infection and disease is justified. The goal for targeted testing is to identify, evaluate, and treat persons who are at high risk for TB infection or at high risk for progressing to TB disease. TB programs will conduct targeted testing in accordance with DSHS standards.

Activities

- A. Develop a targeted testing plan to identify and treat persons or population groups at high risk for developing disease once infected.
 1. Identify the necessary resources for follow-up medical evaluation and treatment before initiating testing activities. Decisions to conduct targeted testing should be based on the ability to provide treatment services.
 2. Conduct TB testing activities *only* among high-risk groups and/or settings. Unfocused population-based testing is not cost-effective and drains limited resources.
 3. A decision to test is a decision to treat.
 - a. Offer treatment for TB infection to clients, regardless of age, unless medically contraindicated once TB disease has been excluded
 - b. Provide clinician's reason in the medical records as to why treatment was not recommended (e.g., alcohol addiction, drug abuse, mental illness, unstable housing, low-income, deportation, etc.).
- A. Document targeted testing activities.
 1. Submit Congregate Settings Targeted Testing Monthly Report (DSHS form EF12-14427) to TB Branch no later than the second Friday of the month for testing from previous month.
 2. Track persons who start and/or complete treatment for TB infection or TB disease.
 3. Include targeted testing activities on the DSHS Annual Progress Report.

C. Analyze local epidemiologic data to assess the need for targeted testing, particularly congregate settings.

1. Complete a TB risk assessment for congregate settings where a targeted testing project is being considered (see DSHS TB-500).
2. Targeted testing projects may be offered in medium- or high-risk congregate settings to include:
 - homeless shelters;
 - nursing homes;
 - dialysis centers;
 - residential facilities;
 - social service programs for persons with HIV;
 - drug and alcohol rehabilitation centers;
 - methadone centers; and
 - migrant farm worker camps.
3. Provide guidance to medium and high-risk facilities operating or starting a TB screening program.

C. Identify persons at risk for developing TB disease or considered to be a high-risk contact.

1. Evaluate at-risk populations for TB infection to include (see DSHS SDOs):
 - contacts;
 - refugees;
 - Class-B immigrants (see item G);
 - discharged inmates; and
 - other high-risk clients.
2. Consider targeted testing for other populations based upon local epidemiology:
 - Clients with signs and symptoms or clients being evaluated for active TB disease
 - Clients with confirmed TB disease
 - Close contacts to a case of suspected or confirmed TB disease based on risk exposure
 - Employees providing TB services
 - Employees, residents, and volunteers of high-risk congregate settings
 - Foreign-born persons who have immigrated within the last five (5) years from countries with a high incidence of TB disease

- Persons with a history of travel to areas with a high incidence of TB disease
 - Some medically underserved, low income populations defined locally as having an increased prevalence of TB disease;
 - Persons who inject illicit drugs or other groups of high-risk substance users (e.g., injection drug users, heroin, etc.)
 - Refugees
3. Complete the Targeted Tuberculin/IGRA Testing Screening Form (DSHS TB-207).

D. Conduct testing using TST or IGRA in accordance with DSHS-approved age requirements.

E. Offer treatment for TB infection to clients, regardless of age, unless medically contraindicated once TB disease has been excluded. Provide clinician's reason in the medical records as to why treatment was not recommended (i.e., alcohol addiction, drug abuse, mental illness, unstable housing, low-income, deportation, etc.).

F. Assess effectiveness of targeted testing projects based on:

1. TB infection yield;
2. the likelihood of identifying infected individuals that will progress from TB infection to disease (risk classification); and
3. TB treatment completion rates.

G. Evaluate Class-B immigrants (see DSHS SDO on TB clinical services <https://www.dshs.texas.gov/idcu/disease/tb/policies/>).

1. Use the Electronic Disease Notification System (EDN) to facilitate evaluation of Class-B immigrants.
 - a. Contact the TB Branch to obtain access to EDN.
 - b. Receive notifications of alien arrivals from EDN and retrieve EDN documents containing medical and contact information.
2. Initiate an appropriate medical evaluation within 30 days of arrival in Texas.
 - a. Contact the refugee or immigrant within 3 working days of receiving EDN documents and schedule an appointment for evaluation.
 - i. If no phone number available, send a letter to the home address listed in the EDN documents.

- ii. If no response to phone call within 7 working days, send a letter to the home address listed in the EDN documents.
 - iii. If the only address listed is for a sponsor agency, contact the sponsor agency to verify the client's address.
 - b. If no response to letter within 10 working days, make a home visit. If all attempts to locate refugee or immigrant have failed, close record and enter, "lost to follow-up" on the TB Follow Up Worksheet.
3. Evaluate all Class-B immigrants within one work week of an event or notification of classification (e.g., note date the screening test was given, date the CXR given, etc.).
 - a. Review all pre-departure medical records.
 - b. Obtain a thorough medical history to include:
 - i. previous history of TB;
 - ii. signs and symptoms of TB disease;
 - iii. prior BCG vaccination;
 - iv. prior treatment suggestive of TB treatment;
 - v. prior diagnostic evaluation for TB; or
 - vi. history of family or household contact with a person with a history of TB disease, treatment, or diagnostic evaluation suggestive of TB.
 - c. Consider the following for children in this population:
 - i. A history of recurrent pneumonia, failure to thrive, recurrent or persistent fevers should increase the provider's index of suspicion.
 - ii. Children experience higher rates of extrapulmonary TB disease, including meningitis and disease of the middle ear and mastoid, lymph nodes, bones, joints, and skin.
4. Conduct a thorough physical exam.
5. Perform alien follow-up based upon recommendations listed in Table 9.
6. Complete medical evaluation within 90 days.



Table 9. Instructions for Completing EDN TB-Follow Up Worksheet

<p>The TB Follow-Up Worksheet is used to document the initial evaluation of an arrival with a TB class condition. A complete evaluation requires a diagnosis, and when indicated a treatment start date.</p>	
<p>Sections A & B</p>	
Demographic & Jurisdictional Information	<ul style="list-style-type: none"> • Pre—populated
<p>Section C</p>	
Date of Initial U.S. Medical Evaluation	<ul style="list-style-type: none"> • Record date of initial evaluation
IGRA or TST	<ul style="list-style-type: none"> • Administer TB screening test (IGRA or TST) • Record: date, brand and results of IGRA or TST used, and interpretation <i>(Note: For persons with TB Class-B conditions or TB-related abnormalities on CXR, a TST of ≥ 5 mm is considered positive).</i> • Record if a history of previous positive IGRA or TST
U.S. Review of Pre-Immigration CXR	<ul style="list-style-type: none"> • Arrivals should bring their pre-immigration CXR film(s) or disk with them to exam. • If the pre-immigration CXR is not available, mark "No." • If the pre-immigration CXR did not have the client's name and date of birth, mark "Not Verifiable." • Record physician's interpretation of pre-immigration CXR • Do not copy overseas panel physician's interpretation of pre-immigration CXR into EDN follow-up worksheet (FUW).
U.S. Domestic CXR	<ul style="list-style-type: none"> • Record interpretation of CXR ordered by the medical director or consulting physician



<p>The TB Follow-Up Worksheet is used to document the initial evaluation of an arrival with a TB class condition. A complete evaluation requires a diagnosis, and when indicated a treatment start date.</p>	
	<ul style="list-style-type: none"> Do not copy overseas panel physician's interpretation of pre-immigration CXR into EDN FUW. If your medical director or consulting physician does not perform a CXR, mark "No"
Comparison	<ul style="list-style-type: none"> Compare pre-immigration CXR to U.S. CXR and chose the one option that best represents your clinician's impression of the comparison. If the pre-immigration CXR is not available, mark "Unknown."
U.S. Review of Pre-Immigration Treatment	<ul style="list-style-type: none"> Record interpretation of pre-immigration TB treatment based on review of client-provided pre-immigration documents and information.
U. S. Microscopy/ Bacteriology	<ul style="list-style-type: none"> Collect specimen(s) for AFB smear and culture. Document specimen type, collection date and results. Report suspected pulmonary or extrapulmonary TB disease to TB Branch within one working day. Do not wait for culture confirmation.
Section D	
Evaluation Disposition Date	<ul style="list-style-type: none"> Record date when medical director or consulting physician has completed the evaluation, if determined that the evaluation cannot be completed for one of reasons listed.
Evaluation Disposition	<ul style="list-style-type: none"> If the evaluation was completed, check the box "Completed evaluation". Indicate whether treatment was recommended. If so, indicate whether for TB disease or TB infection.



The TB Follow-Up Worksheet is used to document the initial evaluation of an arrival with a TB class condition. A complete evaluation requires a diagnosis, and when indicated a treatment start date.

	<ul style="list-style-type: none"> • If the evaluation was initiated but not completed, check box "Initiated Evaluation/Not Completed." Select reason(s) why evaluation was not completed from list below. Check all that apply and write or enter other reasons beside "Other, specify." • If the evaluation was never initiated, check the box "Did not initiate evaluation." Choose the reason(s) why the evaluation was never initiated from the list provided. Check all that apply and write/enter other reasons beside "Other, specify."
Diagnostic	<ul style="list-style-type: none"> • Mark the box corresponding to the CDC diagnostic classification as listed. • Treatment is inappropriate for diagnoses of Class 1 or 0. The EDN system will create an error message if treatment is recommended for either of these diagnoses. • If diagnosis is Class 3, mark the site(s) of disease and contact Surveillance Branch to report. Contact TB Branch epidemiologist if assistance is needed completing section D4.
<p>Section E (Complete this section only if treatment was recommended in question D2)</p>	
U.S. Treatment Initiated	<ul style="list-style-type: none"> • If treatment was initiated, mark "Yes," and for "If Yes," specify for TB disease or TB infection. • <i>Treatment must comply with CDC recommendations.</i> Clients diagnosed at Class 2 or Class 4 should receive treatment unless contraindicated. • Consult the DSHS SDOs or TB Branch, if uncertain which regimen to prescribe.



<p>The TB Follow-Up Worksheet is used to document the initial evaluation of an arrival with a TB class condition. A complete evaluation requires a diagnosis, and when indicated a treatment start date.</p>	
	<ul style="list-style-type: none"> • Treatment for Class 3 should rely on DOT and be provided through the client’s local or regional health department. • If treatment was not initiated, mark “No,” and for “If No, specify the reason,” mark the appropriate boxes. • Check all that apply and enter other reasons next to “Other (specify).”
Treatment Start Date	<ul style="list-style-type: none"> • Specify date treatment was started (mm/dd/yyyy).
U.S. Treatment Completed	<ul style="list-style-type: none"> • Leave this section blank until treatment has stopped. • Save the worksheet in EDN, but do not “submit” until treatment has completed or ended. • Mark the appropriate box to indicate whether treatment was completed or if it is unknown whether treatment was completed. • If treatment was not completed, mark “No,” and for “If No, specify the reason,” mark the appropriate boxes. Check all that apply and enter other reasons next to “Other (specify).” • If treatment was completed, specify the date next to “Treatment Completion Date” (mm/dd/yyyy). • If treatment was initiated but not completed, specify the date treatment ended (date client stopped taking treatment) next to “Treatment End Date” (mm/dd/yyyy).

XI. Conduct Surveillance to Identify Unreported Individuals with Suspected or Confirmed TB

General Requirement

TB programs will develop and maintain mechanisms for early identification and reporting.

Activities

- A. Designate at least one person with the ability to work on surveillance and case registry activities at least 85% of the time; designate at least one back-up person in their absence.
- B. Provide hardware and software necessary to conduct case registry activities, to include, but not limited to:
 1. THISIS;
 2. access to web-based training and tools;
 3. PHIN access; and
 4. access to WinZip or similar encryption software.
- C. Maintain data security and confidentiality standards (see section XVI of TB Work Plan).
- D. Complete prerequisite trainings (see section XIV of TB Work Plan).
- E. Process and manage data for cases, suspects, contacts, others with TB infection, and interjurisdictional transfers (IJNs).
- F. Verify address and ensure client address location is a valid residential address; follow instructions for data entry of addresses in special population groups.
- G. Verify case criteria for the following: laboratory confirmed, clinical (pulmonary or extra-pulmonary), clinical by provider diagnosis.
- H. Ensure suspect record criteria is met.
- I. Collect data, and follow-up as needed to complete all RVCT form variables:
 1. RVCT, pages 1-3

2. Follow up 1, page 4
 3. Follow up 1, pages 5-6
- J. Ensure all RVCT and contact investigation forms are screened via an internal quality assurance (QA) process by a designated case registry team member.
- K. Investigate unreported lab confirmed cases to include:
1. culture-positive;
 2. NAAT-positive;
 3. pathology/cytology sputum smear-positive for AFB.
- I. Submit a report of contacts for every sputum smear-positive case.
- J. Submit a report of contacts is for all other infectious or potentially infectious cases.
1. Provide justification if at least 3 contacts were identified, but were not fully evaluated.
 2. Provide justification for low priority and extra-pulmonary cases if a contact investigation is not warranted.
- K. Follow reporting and surveillance procedures found in the following documents:
- Procedures for surveillance and reporting
 - Texas DSHS Epi Case Criteria and TB Surveillance Definitions Guide, 2018
 - CDC, Mycobacterium Tuberculosis: Report of Verified Case of Tuberculosis (RVCT) Instruction Manual 2009
 - CDC Quality Assurance for TB Surveillance Data; A Guide and a Toolkit
 - CDC, Aggregate Reports for Tuberculosis Program Evaluation: Training Manual and User Guide 2005
 - THISIS Core Manual
 - THISIS TB Surveillance Manual
- L. At least quarterly, contact providers who deliver TB services to at-risk populations to increase case reporting.
- M. Educate and train providers and other key facilities on reporting.

1. Provide education and training about TB reporting and surveillance to at least four of the following annually:
 - a. hospitals;
 - b. HIV clinics;
 - c. homeless shelters;
 - d. drug rehabilitation facilities;
 - e. indigent care facilities; and
 - f. kidney dialysis facilities.
 2. Training must include, but is not limited to the following:
 - a. TB case definition;
 - b. when to report;
 - c. how to report; and
 - d. Texas legal reporting requirements (see <http://www.dshs.state.tx.us/idcu/investigation/conditions/>).
 3. Report these activities in the Annual Progress Report to the TB Branch.
- N. At least quarterly, communicate with the HIV/STD or general surveillance program staff in the local and regional health departments to identify unreported HIV/TB co-infections.
1. Document these activities on Surveillance Quality Assurance Template (SQA Template).
 2. Complete and submit the SQA to the PHIN to the Surveillance Branch within ten (10) days after the end of each quarter.
- O. Report a case of TB within 45 days of when the following occurs:
1. Laboratory confirmed based upon one of the following:
 - a. Isolation of *M. tb* complex from a clinical specimen. (Rapid identification techniques for *M. tb* [e.g., DNA probes and mycolic acids high-pressure liquid chromatography performed on a culture from a clinical specimen] are acceptable under this criterion.)
 - b. Detection of *M. tb* from a clinical specimen by NAAT, Nucleic acid amplification test must be accompanied by AFB 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.

- c. Identification of positive AFB smears, biopsy results indicating granulomas or other findings indicative of TB in a clinical specimen when a culture has not been or cannot be obtained.
2. Clinical diagnosis includes all of the following:
 - a. positive IGRA or tuberculin skin test;
 - b. signs and symptoms compatible with tuberculosis (e.g., and abnormal, unstable [i.e., worsening or improving] chest radiographs, or clinical evidence of current disease);
 - c. treatment with two or more anti-tuberculosis medications; and,
 - d. completed diagnostic evaluation.
 3. Clinical diagnosis based on provider decision requires documentation that includes the provider's rationale or findings on which the diagnosis was based. Rationale may include:
 - a. significant improvement on abnormal chest radiograph
 - b. significant improvement based on symptoms from onset
 - c. child who is a recent contact to an active case
 - d. autopsy report
 - e. recommendations from DSHS-recognized medical consultant.
- P. Report within 45 days, a suspected TB case (ATS classification 5) to the Surveillance Branch when any one of the following is identified.
- Q. Investigate daily all open probable records received from the Surveillance Branch within 24 hours of notification.
1. The Surveillance Branch creates a probable case investigation based on a report of a case that meets the surveillance case definition when the RVCT has not been submitted from regional or local TB Programs.
 2. Other sources for creation of a probable record include:
 - a. confirmation for *M.tb* or *Mycobacterium bovis* (*M.bovis*) and all other species contained in *M.tb* complex from ELRs;
 - b. culture confirmation for *M.tb* or *M.bovis* from genotyping, drug resistance program, HIV/STD program, or EDN;
 - c. vital statistics (death certificate) or a medical examiner's report;
 - d. hospital admission or discharge summary;
 - e. pharmacy records of dispensing of TB drugs;



- f. Infectious Disease Control Unit report of communicable disease;
 - g. receipt of an out of state referral (IJN) EDN transfer; and
 - h. initiation of a contact investigation.
3. The Surveillance Branch then notifies case registrars of the probable reportable case. Investigations must be done in priority order as outlined below:
 - a. jurisdictional assignment
 - b. culture confirmation for *M.tb* complex, *M.tb*, or *M.bovis*
 - c. missing required data elements to assign a state case number
 - d. missing HIV status (in case this was missing from report)
 - e. identification by vital statistics or medical examiner's report
 - f. initiation of a contact investigation, but no submittal of the RVCT
 - g. receipt of an out-of-state referral or EDN transfer
 - h. transfer of suspected case(s) to another state or out of U.S.
4. Investigate all laboratory reports of AFB smear and culture results received locally within seven working days.
5. Resolve 100% of all probable records within 45 days of the Surveillance Branch notification. Open cases pending verification that are not received by the Surveillance Branch after 45 business days of TB programs receiving laboratory-confirmed culture or NAAT results, are delinquent.

XII. Reporting

General Requirement

TB programs will submit required reports by established deadlines and schedules using DSHS-approved processes. Managers must consolidate, verify, and sign-off on all case counts for the current calendar reporting year.

Activities

A. Report all TB cases (ATS Classification 3) using the current DSHS and CDC-approved RVCT form and the CDC TB-published case criteria, as adapted in the DSHS Epi Criteria and TB Surveillance Definitions Guide, 2018 (see <http://www.dshs.state.tx.us/idcu/investigation/conditions/> for TX DSHS Infectious Disease Control Reporting webpage).

1. Report within 45 working days of identification of confirmed TB case to the Surveillance Branch via PHIN.
2. Include the following minimum required data elements on the RVCT (see Figure 2) at time of initial report:
 - a. Date reported
 - b. Complete first, middle and last name
 - c. Date of birth
 - d. Race and ethnicity
 - e. Country of origin, if not U.S.
 - f. Date of entry into U.S.
 - g. Laboratory data necessary to meet case definition as applicable
 - h. Count status and date counted
 - i. Verification of Texas residency: physical address, city, county, ZIP code with 4-digit code (and if in or outside city limits)
 - j. If diagnosed while in a facility or shelter, provide facility or shelter name
 - k. Initial drug susceptibility results, as applicable
3. Report remaining RVCT data elements as required for NTIP reporting. (See Report of Verified Case of Tuberculosis, CDC Tuberculosis Surveillance Data Training).
4. Each registry must maintain a digital or electronic log of all cases in their jurisdiction, by county and year counted with the following:



- a. name;
- b. date of birth
- c. complete address
- d. contact information; and
- e. RVCT number (also referred to as the state casenumber).

Patient's Name _____
 (Last) (Last) (First) (M.I.)

Street Address _____
 (Last) (First) (M.I.)

4. Reporting Address for Case Counting City <input type="text"/> Within City Limits (select one) <input type="checkbox"/> Yes <input type="checkbox"/> No County <input type="text"/> ZIP CODE <input type="text"/> - <input type="text"/>		8. Date of Birth Month <input type="text"/> <input type="text"/> Day <input type="text"/> <input type="text"/> Year <input type="text"/> <input type="text"/>	
5. Count Status (select one) Countable TB Case <input type="checkbox"/> Count as a TB case in your jurisdiction <hr/> Noncountable TB Case <input type="checkbox"/> Verified Case: Counted by another U.S. area (state) <input type="checkbox"/> Verified Case: TB treatment initiated in another country Specify _____ <input type="checkbox"/> Verified Case: Recurrent TB within 12 months after completion of therapy		9. Sex at Birth (select one) <input type="checkbox"/> Male <input type="checkbox"/> Female 10. Ethnicity (select one) <input type="checkbox"/> Hispanic or Latino <input type="checkbox"/> Not Hispanic or Latino 11. Race (select one or more) <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian: Specify _____ <input type="checkbox"/> Black or African American <input type="checkbox"/> Native Hawaiian or Other Pacific Islander: Specify _____ <input type="checkbox"/> White	
6. Date Counted Month <input type="text"/> <input type="text"/> Day <input type="text"/> <input type="text"/> Year <input type="text"/> <input type="text"/>		12. Country of Birth "U.S.-born" (or born abroad to a parent who was a U.S. citizen) (select one) <input type="checkbox"/> Yes <input type="checkbox"/> No Country of birth: Specify _____	
7. Previous Diagnosis of TB Disease (select one) <input type="checkbox"/> Yes <input type="checkbox"/> No If YES, enter year of previous TB disease diagnosis: <input type="text"/> <input type="text"/> <input type="text"/>		13. Month-Year Arrived in U.S. Month <input type="text"/> <input type="text"/> Year <input type="text"/> <input type="text"/>	

Figure 3. Data elements as represented on RVCT

5. See Appendix C for NTIP reporting requirements.

B. Submit reports of contacts via PHIN on DSHS forms TB-340 and TB-341, or Mass Contact Spreadsheet within 90 days of initial case report to the Surveillance Branch.

1. The initial report of contacts requires the following:
 - a. Part A. Case/Suspect Information
 - b. Part B. Interview and Exposure Site Information
 - c. Part C. Contact information including:
 - i. exposure length and setting
 - ii. HIV test results
 - iii. priority status
 - iv. TST/IGRA test results
 - v. CXR or other imaging date and interpretation
 - vi. verification that a complete evaluation was performed (see section VII).
 - vii. If evaluation was incomplete, provide a reason.
 2. Identify and evaluate at least three contacts of sputum smear positive cases. All missing data must be submitted via PHIN to the Surveillance Branch.
 3. Submit a follow-up report for contacts not placed on treatment for TB infection using DSHS form TB-341 via the PHIN.
 - a. Include index patient information on top of report.
 - b. Include all updated contact information and submit to the Surveillance Branch within 90 days of initial case report.
 4. Submit a follow-up report for contacts placed on treatment via PHIN. A report of contacts should be submitted no later than one year from the date contact started on treatment and must include treatment outcome.
 5. Report contacts that develop active TB disease before submitting the subsequent contacts of those cases. Provide linking RVCT numbers.
 6. Contact investigations that yield >49 contacts will be reported on the DSHS TB Mass Contact Spreadsheet. This spreadsheet should be requested from DSHS Surveillance consultants before use to ensure the most recent version is available.
 7. Regional and local TB programs should to assess local contact investigation outcomes based on 2020 National TB Program Indicators Project (NTIP) objectives and targets relative to contact (see Table 10).
- C. Submit CDC Follow-Up I and II Reports.

1. Submit a completed Initial Susceptibility Report (Follow-up I) on all culture-confirmed cases to Surveillance Branch within 45 days after laboratory notification.
2. Submit a completed Case Completion Report (Follow-up II) on all culture-confirmed cases to Surveillance Branch within 90 days of treatment stop date.
3. Provide a justification for any Follow-Up II reports submitted more than 90 days after medication stop date.
4. Provide the last date medication was given when treatment of the client stopped due to completion of adequate therapy, death, failure to locate, and/or 90 days passage since last medication dose.

Table 10. NTIP Contact Investigation Objectives and Targets

DSHS TB-340 and TB-341 Reporting Information	NTIP Objectives	US Targets
Contact Elicitation	For TB clients with positive AFB sputum-smear results, increase the proportion who have contacts elicited.	100%
Examination/Evaluation	For contacts to sputum AFB smear-positive TB cases, increase the proportion who are examined for infection and disease	93%
Treatment Initiation	For contacts to sputum AFB smear-positive TB cases diagnosed with latent TB infection, increase the proportion who start treatment.	91%
Treatment Completion	For contacts to sputum AFB smear-positive TB cases who have started treatment for TB infection, increase the proportion who complete treatment.	81%

5. For a case to be “recurrent”, the last known drug stop and new regimen start dates must be less than 365 days apart. A “new investigation” means the last known drug stop and new regimen start dates are greater than 365 days apart. Both instances require a new contact investigation.
 6. Submit Case Completion Report (Follow-up II) via PHIN to Surveillance Branch.
- D. Report false positive cases (see section IX).
1. The Surveillance and TB Branches are available to assist with local/regional false positive investigations.
 2. Any cases closed as due to false positive laboratory results must be reported to the Surveillance Branch. Include documentation to justify change in case status (e.g., amended lab report, doctor’s note, consult, etc.) within 45 days of closure.
 3. This information must be reported to the PHIN genotyping folder to facilitate investigation.
- E. Submit interjurisdictional transfer referrals using the National TB Controllers Association (NTCA) IJN referral forms to ensure continuity-of-care for any case, suspect, contact, person with TB infection, or EDN transfers moving to other jurisdictions, either in or out of state, or out of the U.S. The transferring jurisdiction must:
1. Prepare appropriate IJN forms and send to the receiving jurisdiction to ensure follow-up and continuity of care (For forms, see http://www.tbcontrollers.org/docs/resources/IJN_Form_May2015.pdf).
 2. Send all applicable medical information, medical records, and chart information to the receiving jurisdiction;
 3. Call to confirm receipt of the medical documentation at the receiving health department;
 4. Communicate directly with the staff of the receiving jurisdiction to ensure that the IJN and all other necessary client medical information is received;
 5. Follow up on the case periodically to ensure completion of treatment. It is the responsibility of the transferring jurisdiction to report when treatment is complete. This is reflected in the jurisdiction’s performance measures as per the CDC.

F. Submit all closed TB suspects and their contact investigation documentation to the Surveillance Branch using current DSHS-approved forms via the PHIN within 90 days of initial report. Documentation must include:

1. RVCT
2. TB-340 and TB-341

G. Ensure quality of surveillance reports.

1. Update all surveillance missing data reports via PHIN within 30 days of receiving the report.
2. Refer to Table 11 for a summary of quality assurance requirements as outline in the CDC Tuberculosis and Laboratory Cooperative Agreements (CoAg).
3. See Appendix C for draft Detection, Accuracy, Completeness, Timeliness, and Security/Confidentiality (DACTS) Audit tool.

H. Report drug resistant cases.

1. Complete and submit DSHS form TB-400 on all newly diagnosed drug resistant cases within five (5) days of notification to the TB Branch via PHIN.
2. Complete and submit an updated DSHS form TB-400B every 90 days for all drug-resistant cases until treatment completion to the TB Branch.
3. Submit any changes in case management, drug resistance patterns, or residence in any drug-resistant TB case to the TB Branch within 72 hours of notification.

I. Complete and submit DSHS Annual Progress Report using designated template. Submit to TBContractReporting@dshs.texas.gov by established deadline.

J. Complete and submit quarterly cohort reviews via PHIN to the TB Branch in accordance with submission schedule outlined in Table 12. Include:

1. Completed Cohort Review Summary Report
2. List of all counted cases
3. Completed presentation form for each case presented at each quarterly cohort review.



Table 11. Summary of Quality Assurance Requirements for TB Surveillance Data

CoAg Summary of Quality Assurance for TB Surveillance Data
<p>Incorporate quality assurance policies and procedures into surveillance activities to ensure:</p> <ul style="list-style-type: none"> • Detection (case finding, counting, and reporting all TB cases) • Accuracy (accuracy of data abstracted from original client records, of registry data, and of data entered onto the RVCT form and transmitted to CDC) • Completeness (completeness of all RVCT variable, aggregate data, and matching TB and HIV/AIDS registries) • Timeliness (prompt reporting of surveillance data) • Security and confidentiality (confidentiality and security of TB surveillance data)
<p>Develop a written protocol for QA for TB surveillance data which:</p> <ul style="list-style-type: none"> • Describes how each of the QA components (case detection, data accuracy, data completeness, data timeliness, and data security and confidentiality) is being conducted; and • Develop and implement plans for improvement.
<p>Qualified Participants</p> <ul style="list-style-type: none"> • Central Office Reporting and Surveillance • State-designated case registries • State-contracted counties

Adapted from "Quality Assurance for Tuberculosis Surveillance Data: A Guide and Toolkit", by Centers for Disease Control and Prevention, Division of Tuberculosis Elimination, 2013.

Table 12. Cohort Review Period and Submission Schedule

Cohort Review Period & Submission Schedule	
Cohort Period Cases Counted In:	Are reviewed and reported by:
1st quarter (Jan 1 to Mar 31) current year	March 31 of following year
2nd quarter (Apr 1 to June 30) current year	June 30 of following year
3rd quarter (July 1 to Sep 30) current year	September 30 of following year
4th quarter (Oct 1 to Dec 31) current year	December 31 of following year

- K. Notify the TB Branch of concerning or mass contact investigation within 48 hours (see section VII) and provide timely updates.
- L. Conduct and report results of flight contact investigations (see section VII).
- M. Submit a report of adverse drug reaction to DSHS Pharmacy Branch.
1. Complete EF12-12274 "Report of Serious Adverse Drug Reaction Resulting in Therapeutic Changes, Hospitalization, or Death" and send to the DSHS Pharmacy Branch within two (2) working days of notification of adverse event.
 2. A DSHS pharmacist receives the report will review the information, contact the sender, if needed, and make the determination if a report to the Food and Drug Administration (FDA) should occur.
 3. The DSHS Pharmacist will contact the sender for any further documentation needed, such as the TB 400A or TB 400B.
 4. Once a determination by the treating prescriber is made for disposition (changes in regimen, resuming or discontinuing medication, for example), the DSHS pharmacist will update the "Pharmacy Only" section of the report and send the form back to the submitter to file in the patient chart.
 5. While the Adverse Drug Reaction Form is intended to inform the DSHS Pharmacy Branch of the event, it is the responsibility of the treating prescriber to intervene as necessary and make any changes to regimen when indicated.
 6. The DSHS Pharmacy Branch will keep a record of all events reported to the Branch for documentation purposes and to report to the FDA when indicated.

XIII. Implement Infection Control Procedures

General Requirement

TB programs will apply appropriate administrative, environmental, and respiratory controls to prevent exposure to and transmission of *Mycobacterium tuberculosis*.

Activities

A. Develop a TB infection-control program which includes administrative controls, environmental controls, and a respiratory protection program.

1. Administrative controls reduce the risk of exposure to persons with infectious TB and may include the following activities:
 - Assigning responsibility for TB infection control to a designated staff member
 - Conducting a TB risk assessment (see DSH TB-500).
 - Developing and implementing a written TB infection control plan
 - Ensuring the availability of recommended laboratory processing, testing, and reporting of results
 - Implement effective work practices for managing clients with TB disease and infection
 - Ensuring proper cleaning, sterilization, or disinfection of equipment and surfaces to prevent contamination
 - Educating, training, and counseling health care workers, clients, and visitors about TB infection and disease
 - Testing and evaluating clinic workers who are at higher risk for becoming infected with TB due to exposure to TB disease
 - Maintain documentation in accordance with local record retention policies and procedures
 - Review results of TB screening for employees at least annually
 - Applying epidemiology-based prevention principles, including the use of setting-related TB infection-control data
 - Using posters and signs to remind clients and staff of proper cough etiquette (covering mouth when coughing) and respiratory hygiene

- Coordinating efforts with high-risk health-care or congregate settings to reduce and prevent exposure to TB
2. Environmental controls prevent the spread and reduce the concentration of infectious droplet nuclei and may include the following activities:
- Using local exhaust ventilation (e.g., hoods, tents, or booths) to control the source of infection
 - Using general ventilation to dilute and remove contaminated air
 - Using high-efficiency particulate air (HEPA) filtration, and/or ultraviolet germicidal irradiation (UVGI) to clean the air
 - Controlling airflow to prevent the contamination of air in areas adjacent to airborne infection isolation (AII) rooms
3. A respiratory protection program further reduces the risk exposure of health care workers to infectious droplet nuclei that have been expelled into the air from a patient with infectious TB and may include the following activities:
- Developing policies and procedures on respiratory protection, to include the type/size of respirators available to staff, routine inspection and maintenance, and appropriate use
 - Providing N-95 fit testing employees who share the same air space with clients suspected or diagnosed with infectious TB disease
 - Fit-test upon initial hire and periodically as needed
 - Maintain documentation in accordance with local record retention policies and procedures
 - Fit-testing employees
 - Using N-95 respirators in situations that pose a high risk of exposure to TB disease
 - Training health care workers on personal respiratory protection
 - Educating clients on respiratory hygiene and the importance of cough etiquette procedures and providing surgical masks as needed
 - Evaluating the effectiveness of the respiratory protection procedures through monitoring employees for conversion of TST or IGRA results
- B. Ensure all environmental control equipment are properly installed, operated and maintained.

1. Outline the responsibility and procedures for all environmental control equipment maintenance in a written TB infectious control plan.
 2. Maintain a log of all environmental control equipment maintenance.
 3. Document any training required for the proper operation of environmental control equipment.
- C. Ensure separation of infectious or potentially infectious clients from other clients in the clinic (e.g., separate clinic spaces or appointment times).
- D. Perform droplet nuclei producing procedures (e.g., bronchoscopy, sputum collection/induction) in ALL rooms of booth, if available. For clinics without these capabilities, sputum specimens must be collected outside in a location that protects client confidentiality.
- F. Determine infectiousness of TB clients.
1. The infectiousness of a TB client is directly related to the number of droplet nuclei carrying *M.tb* that are expelled into the air.
 2. The number of tubercle bacilli expelled by a TB client depends on the following factors:
 - Presence of a cough
 - Cavity in the lung
 - Acid-fast bacilli on sputum smear
 - TB disease of the lungs, airway, or larynx
 - Client not covering mouth and nose when coughing
 - Not receiving adequate treatment or having prolonged illness
 - Undergoing cough-inducing procedures
 - Positive sputum cultures
 3. Clients can be considered noninfectious when they meet **all** of the criteria as outlined in Table 1 of the TB Work Plan.
- G. Conduct an environmental risk assessment (*see Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings, 2005*).
1. For LHDs or PHRs that provide TB services to three or more TB clients should follow, at a minimum, TB screening recommendations for medium-risk settings
 2. LHDs with fewer than three clients with TB disease in the last year should follow, at a minimum, TB screening recommendations for low-



risk settings and may choose to follow the recommendations for medium-risk settings.

XIV. Maintain a Competent Workforce

General Requirements

TB programs will provide professional education, training and orientation for new TB program staff and continuing education for current TB program staff.

Activities

- A. Ensure that all persons providing services under the TB standing delegation orders or equivalent policies and procedures have the requisite experience and/or training to deliver appropriate services.
- B. Provide orientation and training to all employees involved in TB activities, including physicians, nurses, contact investigators, outreach workers, case registry staff, receptionists, and other support staff.
 1. Initial training includes 40 hours of TB training specific to job duties within 90 days of employment:
 - a. Use the CDC “Self-Study Modules on Tuberculosis” for the initial training (see <http://www.cdc.gov/tb/education/ssmodules/default.htm>)
 - b. For registry and surveillance staff, initial training will include CDC “RVCT Self-Study Modules” state (see <https://www.cdc.gov/tb/programs/rvct/default.htm>)
 2. Core training topics for TB program staff include:
 - a. transmission and pathogenesis of tuberculosis;
 - b. epidemiology of TB;
 - c. diagnosis of tuberculosis infection and disease;
 - d. treatment of Tuberculosis infection and disease;
 - e. TB reporting and notifiable conditions;
 - f. cultural awareness; and
 - g. interpreter utilization.
 3. Specialized training topics based on duties and responsibilities include:
 - a. drug Interactions and toxicity;
 - b. contact Investigation for tuberculosis;
 - c. tuberculosis surveillance and case management in hospitals and institutions;
 - d. infectiousness and infection control;



- e. client adherence to tuberculosis control;
 - f. interviewing, investigating and influencing techniques;
 - g. directly observed therapy;
 - h. TB nurse case management;
 - i. TB program management; and/or
 - j. CDC tuberculosis surveillance and reporting.
2. Newly hired TB program managers, nurses, contact investigators and case registry staff must participate in the TB Branch New Employee Orientation *after* three months of hire.
 3. TB program staff must complete 16 hours of continuing education relevant to each staff member's position.
 4. Case registry staff must attend the annual medical records conferences and workshops to obtain current records management procedures.
 5. At least one case registry staff must participate in the monthly TB conference calls.
 6. Attend Heartland National TB Center trainings including webinars provided by all Regional TB Centers of Excellence, as needed.
 7. Participate in DSHS TB and Surveillance Branch trainings
- C. Maintain documentation of training for all employees (including contracted providers) who deliver TB services.
1. Retain a training log that details:
 - a. staff receiving training;
 - b. job titles;
 - c. training dates;
 - d. title of training or course; and
 - e. number of hours received for successful completion of each course.
 2. Retain copies of employee training certificates.
 3. Each medical director and/or local health authority must have sufficient access to training records in order to verify that those operating under their medical license have the requisite experience and training.
- D. Notify the TB Branch of newly hired TB program managers, nurses, contact investigators and case registry staff within 30 days of hire using the Notice of Change of TB Personnel form (See <http://www.dshs.texas.gov/idcu/disease/tb/forms/>).



E. Educate external stakeholders.

1. Provide TB education and training, as resources allow, to:
 - a. schools;
 - b. correctional facilities;
 - c. community health care providers;
 - d. homeless shelters; and
 - e. social service providers who may serve populations at high risk for TB or where the consequences of disease transmission could be severe.
2. Maintain documentation of all external stakeholder TB trainings (including the hours, topics, dates and numbers of participants) and make available upon request to the TB Branch.
3. Report stakeholder trainings on the Annual Progress Report.

XV. Monitor Budget Expenses

General Requirement

LHDs will monitor budget expenses and maintain records in accordance with General Provisions. PHRs will monitor budget expenses and maintain records as outlined in DSHS policies.

Activities

- A. TB programs may shift funds between direct cost categories by 10% (except equipment).
 - 1. LHDs must notify the DSHS Contract Management Section (CMS) of any requests in excess of 10%, including any equipment and indirect requests. The equipment threshold is currently \$5,000.
 - 2. DSHS PHRs must notify the TB Branch of any requests in excess of 10%, including any equipment and indirect requests.
- B. Submit requests for reimbursement or payment monthly by the last business day of the month following the month in which expenses were incurred or services provided.
- D. Provide monthly notification to TB Branch of any changes in personnel, including new hires, vacancies, and changes in salary, job titles or job descriptions.
 - 1. Submit "*Notice of Change in TB Personnel*" form via PHIN (see texas.tb.org).
 - 2. Notify both the CMS and the TB Branch if a personnel change requires a contract amendment.
- E. Lapse no more than 1% of federal and state funds. Lapsing above the maximum percentage may impact future allocations.
 - 1. Maximize the use of federal funds FIRST as federal lapses may impact future Centers for Disease Control and Prevention funding.
 - 2. The TB branch reserves the right to decrease funding amounts as the result of a TB program's budgetary shortfalls and/or due to lapsing more than 1% of total funds.

XVI. Confidentiality and Security Standards

General Requirements

TB programs will perform activities outlined in this plan in accordance with applicable state and federal security and confidentiality standards, policies and guidelines, including but not limited to:

- DSHS Program Policy "Release of TB/HIV/AIDS and STD Data,"
- www.dshs.state.tx.us/hivstd/policy/security.shtm;
- Federal HIV/AIDS Security and Confidentiality guidelines, <https://www.cdc.gov/nchhstp/programintegration/docs/PCSIDataSecurityGuidelines.pdf>;
- DSHS Program Policy No. 2011.01 "TB/HIV/STD Unit," www.dshs.state.tx.us/hivstd/policy/security.shtm; and
- DSHS Program TB/HIV/STD Unit Breach of Confidentiality Response Policy, www.dshs.state.tx.us/hivstd/policy/security.shtm

Activities

A. Submit documentation to the TB/HIV/STD (THS) Unit Security Officer that all staff and subcontractors working on activities outlined in this work plan have received annual training on:

1. employee standards of conduct; and
2. DSHS security and confidentiality training course.

B. Contact THS Unit Security Officer at Jason.Valdez@dshs.texas.gov for information on security training offered at: <https://tx.train.org>.

C. Ensure that all newly hired staff must successfully complete confidentiality and security training provided by DSHS within thirty days of hire.

D. Complete an annual refresher training course on confidentiality requirements/confidential information security (i.e., within one year of having taken the previous confidentiality and security course).

E. Submit all appropriate documentation of confidentiality and security training to DSHS within ten (10) days of completing each course.



F. Designate and identify a HIPAA Privacy Officer authorized to act on behalf of the TB program in developing and implementing requirements outlined in federal and state privacy laws.

G. Designate a TB program staff (i.e. manager) to serve as the Local Responsible Party (LRP); the LRP will:

1. Ensure appropriate policies/procedures are in place for handling confidential information, releasing confidential TB/HIV/STD data, and for the rapid response to suspected breaches of protocol and/or confidentiality.
 - a. These policies and procedures must comply with DSHS policies and procedures.
 - b. TB Programs may choose to adopt DSHS policies and procedures as their own.
2. Approve any program staff requiring access to TB/HIV/STD confidential information. The LRP will grant authorization to program staff who have a work-related need to view TB/HIV/STD confidential information.
3. Maintain a current list of authorized staff persons who have been granted permission to view and work with TB/HIV/STD confidential information.
4. Conduct a monthly review authorized user list throughout the fiscal year beginning ten (10) days from September 1 of each year.
5. Ensure that all program staff with access to confidential information have a signed copy of a confidentiality agreement on file; ensure that the agreement is updated annually.
6. Train all program staff with access to confidential information on TB/HIV/STD security policies and procedures, including federal and state privacy laws and policies before access to confidential information is granted.
7. Consult with THS Unit Security Officer regarding all suspected breaches of confidentiality in compliance with the DSHS Program Policy "TB/HIV/STD Breach of Confidentiality Response Policy," www.dshs.state.tx.us/hivstd/policy/security.shtm.
8. Submit all required quarterly reports on time.
9. Incorporate following security procedures:
 - a. Ensure computers and networks meet DSHS security standards.



- b. Maintain and provide a current list to DSHS TB/HIV/STD security officer of all personnel with access to secured areas and of all identified personnel who have received security training.
 - c. Submit requests for TB/HIV/STD systems user account terminations to DSHS within one business day of identifying the need for account termination.
 - d. Identify point of contact for changes in user access to secure data, secure network, secure reason and for receipt of notifications once a user account has been terminated.
 - e. Transfer secure data electronically via PHIN.
 - f. Maintain a visitor's log for individuals entering secured areas and LRP conducts quarterly reviews of this log.
 - g. Verify user password changes occur at least every 90 days.
 - h. Ensure that portable devices used to store confidential data are approved by the LRP and encrypted.
- H. Ensure confidential data are:
- 1. maintained in a secured area when not in use;
 - 2. not left in plain sight; and
 - 3. shredded before disposal.

XVII. Monitor Surveillance, Reporting and Case Management Activities in Correctional and Detention Facilities

General Requirement

TB programs will monitor and participate in TB prevention and care activities in correctional and detention activities, with the exception of Texas Department of Criminal Justice (TDCJ) facilities. The goals of correctional TB activities are early detection (case-finding), containment, treatment and prevention in correctional and detention facilities.

The TDCJ is responsible for directing TB care related services within all prison units and community corrections under their purview. The TDCJ Health Services Division oversees medical services provided by contractors in state prisons and has the statutory authority and responsibility to ensure access to care, monitor the quality of care, investigate medical grievances, and conduct operational review audits of health care services.

Regardless of size and ownership, all correctional and detention facilities in Texas, including federal, state prisons, local jails and community correction facilities are subject to the provisions of the Communicable Disease Prevention and Control Act (Texas Health and Safety Code, Chapter 81, Rule § 81.065, 2016) and other applicable federal and state laws.

Activities

- A. Provide technical assistance on TB prevention and care for all correctional and detention facilities, except TDCJ, and monitor compliance with state laws.
- B. Promote TB screening and treatment.
 - 1. Offer guidance to promote correct and timely screening practices (e.g., symptom screening, testing with TST or IGRA).
 - 2. Provide medical oversight for TB cases, suspects and contacts.
 - 3. Provide consultation for TB infection treatment for high-risk groups. (Note: The initiation of treatment for TB infection should include consideration and planning for likelihood of client continuing and completing treatment under supervision, if released from facility before completion of treatment regimen).

- C. Provide assistance with discharge planning and continuity-of-care.
1. Facilitate discharge planning for inmates with confirmed or suspected TB who are scheduled to be released or transferred to other correctional facilities or jurisdictions.
 2. Follow-up to ensure that TB cases and suspects continue TB treatment at the TB clinic nearest their residence or at a receiving correctional facility.
 3. Provide continuity-of-care for employees and any inmates released to the community who are undergoing treatment for TB disease or infection.
 4. Provide technical consultation to ensure adequate precautions are taken while transporting clients between correctional facilities or detention centers.
 5. Refer foreign nationals to CURE-TB or TBNet for continuity-of-care coordination outside of U.S.
 6. Conduct at least an initial effort to contact all referred, discharged inmates on treatment for TB infection to encourage completion of therapy. Repeated efforts to follow non-compliant, HIV-negative, released inmates are not cost-effective.
- D. Coordinate, plan, and actively participate in TB CIs (see Section VII).
1. Conduct an interview to identify contacts and determine an inmate's infectious period.
 2. Provide TB education and counseling to client.
 3. Assess TB transmission risk based on the index case's degree of infectiousness, length of exposure to index, environmental factors and contact characteristics (e.g., HIV-positive).
(Note: TB testing may be conducted by the health department or the jail medical staff under the strict guidance by the health department).
 4. Evaluate identified contacts based on CDC priority classification.
 5. Ensure that contacts start and complete treatment for TB infection or TB disease, as indicated.
- E. Provide oversight for Texas Health and Safety Code Chapter 89 facilities (see <http://www.statutes.legis.state.tx.us/Docs/HS/htm/HS.89.htm>).
1. Review and submit *Monthly Correctional TB Report* (DSHS form TB EF-12-11462) and the Positive Reactors/Suspects/ Cases Report (DSHS



- form TB EF-12-11461) to DSHS Congregate Settings Program no later than 15th day of each month.
2. To the extent funds are available, distribute Purified Protein Derivative (PPD) and syringes for TB skin testing to jails and community corrections facilities that meet Texas Health and Safety Code, Chapter 89 criteria upon their request (except private jails).
 - a. Chapter 89 facilities must submit the *Monthly Correctional TB Report* to the PHR or LHD by the fifth (5) working day of the following month.
 - b. Monitor monthly jail reports to ensure the number of TB tests reported justifies the amount of PPD and syringes provided.
 - c. Address suspected misuse of state funded supplies immediately with the correctional facility and report to the TB Branch.
 - d. Submit screening plans to the DSHS Congregate Settings Program at CongregateSettings@dshs.state.tx.us.
 3. Review and submit correctional TB screening plans for completion and accuracy.
 - a. Chapter 89 facilities must submit the *Correctional Tuberculosis Screening Plan* (form EF 12-11463) to the DSHS Congregate Settings Program for review and approval 90 days prior to the current Screening Plan expiration date or plan anniversary date.
 - b. Prior to final approval, the TB Branch will forward the Screening Plan to the PHR or LHD for review. The reviewed Plan with the health department comments must be returned to the TB Branch within 10 days of receipt.
 - c. Review and submit the *Tuberculosis Screening Plan* (form EF 12-11463) to the DSHS Congregate Settings Program for review and approval 90 days prior to the current Screening Plan expiration date or plan anniversary date.
 4. Provide training and education to jail staff, as resources allow; report on the DSHS Annual Progress Report.

XVIII. Initiate and Maintain Self-Auditing Practices

General Requirement

TB programs will implement practices that meet clinical and reporting quality standards and assure the appropriate use of state and federal funds.

Activities

- A. Designate staff to review program practices to ensure services are delivered in accordance with DSHS program standards as outlined in the Work Plan.
- B. Ensure medical record documentation include and follow current Texas Administrative Code requirements, Title 22, Part 9, Chapter 165, Rule §165.1.
- C. Develop a checklist to ensure the completeness of medical records.
- D. Ensure the most current SDOs are reviewed and signed annually by authorizing physician (see DSHS TB Policy 5003 and 22 TAC §193.2).
 - 1. Regional staff providing clinical or data services will sign/acknowledge understanding of SDOs and the policies and procedures under which SDO activities are performed.
 - 2. TB managers will ensure that the SDOs and subsequent policies and procedures are reviewed and signed at least annually by employees delivering TB Services.
 - 3. PHRs will submit signed attestation pages from the SDOs to the TB Branch by October 14th of each month via the PHIN to the NurseAdmin folder.
- E. LHDs will submit a signed TB Policies and Procedures signature page and table of contents by October 14th of each month.
- F. Regions must provide technical TB support and guidance, as needed, to LHDs that provide TB services.
- G. Perform self-audits (see TB Branch's onsite review tool).

XIX. Conduct Continuing Quality Improvement Activities to Maintain a Robust TB Infrastructure

General Requirement

TB programs will evaluate program performance by determining rates of completion of therapy, contact identification, and initiation of and completion of treatment for TB infection

Activities

- A. Conduct quarterly cohort reviews in accordance with DSHS TB Branch policies and procedures.
 - 1. Compare treatment completion and contact evaluation rates by cohort periods and years to assess program progress.
 - 2. Identify trends that support or hinder effective TB prevention and care activities.
 - 3. Prepare, complete and submit the Cohort Review Summary and each individual Presentation Form to the DSHS TB Branch in accordance with DSHS submission schedule documented in Cohort Review Policy.
- B. Review CDC's National Tuberculosis Indicators Project (NTIP).
 - 1. Use NTIP measure to assess your TB program's progress in achieving national performance outcomes.
 - 2. Contact the TB Branch if assistance is needed to help setting up an account.
- C. Perform routine case management review and document findings.
 - 1. Develop corrective action plans and conduct follow-up reviews (see the TB Branch's onsite review tool).
- D. Update policies and procedures to support continuing quality improvement (CQI) efforts.
- E. Meet Texas Performance Measures (FY19).
 - 1. For FY19, reporting data will be drawn from calendar year 2018 (1/1/2018 -12/31/2018).



2. If a program’s performance falls short of desired benchmarks, DSHS may (at its sole discretion) require additional measures to improve that percentage on a timeline set by DSHS (see Table 9).

Table 13. Texas FY19 Performance Measures

Performance Measure	Benchmark
1. Newly reported TB cases have an HIV test performed, unless they are known HIV-positive, or the client refuses.	85.3%
2. Cases and suspected cases of TB under treatment are placed on timely and appropriate DOT [†] .	93.4%
3. Newly reported suspected cases of TB are started on the recommended initial 4-drug regimen in timely manner	93.5%
4. Newly reported TB clients ages 12 and older who have a pleural or respiratory site of disease must have sputum AFB-culture results*.	93.5%
5. Newly reported cases of TB with AFB-positive sputum culture results have documented conversion to sputum culture-negative within 60 days of initiation of treatment.	54%
6. Newly diagnosed TB cases that are eligible to complete treatment within 12 months complete therapy within 365 days or less. Exclude TB cases: <ul style="list-style-type: none"> • diagnosed at death • who die during therapy • who are resistant to rifampin • who have meningeal disease; and • who are younger than 15 years with either miliary disease or a positive blood culture for TB. 	89.4%
7. Increase the proportion of culture-confirmed TB cases with a genotyping result reported.	94.3%
8. TB cases with initial cultures positive for <i>M. tb</i> complex are tested for drug susceptibility with results documented in the medical record	97%
9. Newly reported TB clients with a positive AFB sputum-smear result have at least three contacts evaluated as part of the contact investigation.	96%



Performance Measure	Benchmark
10. Newly identified contacts identified through the contact investigation that are associated with a sputum AFB smear-positive TB case are evaluated for TB infection and disease.	86%
11. Contacts identified through the contact investigation that are associated with a sputum AFB smear-positive case and that are newly diagnosed with TB infection are started on timely and appropriate treatment.	76%
12. Contacts identified through the contact investigation that are associated with a sputum AFB smear-positive case that are newly diagnosed with TBI and that were started on treatment complete treatment for TB infection.	58%
13. For Class-B immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB, increase the proportion who initiate medical evaluation within 30 days of arrival.	63.5%
14. For Class-B immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB, increase the proportion who initiate and complete evaluation within 90 days of arrival.	50%
15. For Class-B immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB and who are diagnosed with TB infection (TB infection during evaluation in the US), increase the proportion who start treatment.	74%
16. For Class-B immigrants and refugees with abnormal chest X-rays read overseas as consistent with TB and who are diagnosed with TB infection (TB infection during evaluation in the U.S. and started on treatment), increase the proportion who complete TB infection treatment.	54%
<p>*Report results to DSHS according to the surveillance reporting schedule. †The CDC recommends treatment initiation for TB clients with positive AFB sputum-smear results within 7 days of specimen collection. ^βArrival is defined as the first notice or report, whether by fax, phone call, visit to the health department, or EDN notification.</p>	

- Maintain documentation used to calculate performance measures as required by General Provisions Article VIII "Records Retention," and by Texas Administrative Code Title 22, Part 9 Chapter 165, §165.1, regarding retention of medical records.

XX. Court-Ordered Management

General Requirement

TB programs will manage non-compliant persons diagnosed with TB disease whose actions pose a public health threat. Court-order management ensures that:

1. non-adherent TB clients complete an adequate course of TB treatment;
2. clients receive appropriate evaluation and care when treatment is interrupted due to client's violation of the terms of the signed control order; and
3. the public is protected from infectious TB patients who have refused voluntary isolation when their actions pose a public health threat.

Activities

- A. Establishing provider/client agreement for TB care services.
 1. Ensure all clients with suspected or confirmed TB disease understand their role in receiving treatment and care for TB.
 2. Ensure clients understand services they will receive from the local TB program for successful treatment outcomes.
 3. Complete DSHS TB-410 *Order to Implement and Carry Out Measures for a Client with Tuberculosis*. This form serves as Texas' control orders for TB.
 - a. Ensure the provider and client sign DSHS TB 410 acknowledging understanding of treatment and compliance expectations.
 - b. All clients with suspected or confirmed TB disease are required to sign DSHS TB 410 at the time of intake.
 - c. A violation of any terms of the control order serves as grounds for court-ordered management.
- B. Consult with your local or DSHS attorney to begin court-ordered management process. The court may remand client to receive DOT at his/her residence or involuntary admission to Texas Center for Infectious Disease (TCID). A locked wing for involuntary admissions opened at TCID on April 3, 2017.

C. Ensure client's medical record includes the following:

1. A description of the physical and mental condition of the client
2. The degree of infectiousness
3. Proposed threat to public health and supporting documentation of clinician, health authority, or DSHS-recognized medical consultant
4. A description of non-compliant behaviors and the steps taken to address non-compliance to include all attempts to contact, whether calls or visit
5. Documentation from the clinician, health authority or an DSHS-recognized medical consultant if client has converted to smear negative but is expected to become infectious again

D. Work closely with the jurisdiction's district attorney and DSHS attorney to ensure completion and processing of the following forms throughout the court-ordered process (see_

<http://dshs.texas.gov/idcu/disease/tb/forms/default.asp#CourtOrder>):

- DSHS form 86749_1: Health Authority's Affidavit of Medical Evaluation (**Note: Include the length of time client is expected to remain at TCID if involuntary admission is being sought**)
- DSHS form 86963_1: Application for the Extended Management of a Person with Communicable Disease
- DSHS form 86964_1: Motion for Protective Custody
- DSHS form 86966_1: Notification of Probable Cause Hearing
- DSHS form 86970_1: Order Appointing Attorney for Inspection, Setting, Hearing and Notice to Proposed Client
- DSHS form 86965_1: Order Appointing Special Master
- DSHS form 86968_1: Order for Protective Custody
- DSHS form 86969_1: Order for Continued Protective Custody and Setting Hearing on Application
- DSHS form 86972_1: Order for Court Reporter to Create Redacted Reporter's Records
- DSHS form 84004_1: Order of Transport
- DSHS form 84044_1: Waiver of Jury Trial and Right to be Present at Trial
- DSHS form 86972_1: Order of Commitment on Application for Extended Management of Person with Communicable Disease



E. Establish legal justification for isolation. Refer to Health and Safety Code, Chapter 81, Communicable Diseases, Subchapter E. Control, 81.081.

(Note: "A health authority has supervisory authority and control over the administration of communicable disease control measures in the health authority's jurisdiction unless specifically preempted by the department."

See <http://law.justia.com/codes/texas/2005/hs/002.00.000081.00.html>).

Appendix A: DSHS TB Formulary

The following medications and supplies are available to Tuberculosis (TB) Programs approved by the Texas Department of State Health Services (DSHS) TB and Hansen’s Disease Branch, for outpatient TB management. All orders must be placed through the Inventory Tracking Electronic Asset Management System (ITEAMS), or by contacting the Pharmacy Branch to facilitate the order (512-776-7500).

Drug Name: Generic (Brand)*	Item Description	Route	Comments
Amikacin	Vial	IM, IV	Requires consult**
Azithromycin (Zithromax)	Susp/Tab/Vial	PO, IV	Requires consult**
Capreomycin (Capastat)	Vial	IM, IV	Requires consult**
Clarithromycin (Biaxin)	Tab	PO	Requires consult**
Cycloserine (Seromycin)	Cap	PO	Requires consult**
Ethambutol (Myambutol)	Tab	PO	First Line
Ethionamide (Trecator)	Tab	PO	Requires consult**
Gentamicin	Vial	IM, IV	Requires consult**
Isoniazid	Soln/Tab/Vial	PO, IM	First Line
Levofloxacin (Levaquin)	Soln/Tab/Vial	PO, IV	Requires consult**
Linezolid (Zyvox)	Susp/Vial	PO, IV	Requires consult**
Moxifloxacin (Avelox)	Tab/Vial	PO, IV	Requires consult**
Para-amino salicylic acid (Paser)	Packet	PO	Requires consult**
Pyrazinamide	Tab	PO	First Line
Pyridoxine (Vitamin B-6)	Tab	PO	First Line
Rifabutin (Mycobutin)	Cap	PO	First Line
Rifampin	Cap/Vial	PO, IV	First Line
Rifapentine (Priftin)	Tab	PO	First Line
Streptomycin	Vial	IM, IV (off label)	Requires consult**

Other Supplies			
Sterile Water for Injection	Vial	IM, IV	
Lidocaine (Xylocaine) 1% or 2%	Vial	IM, IV	
Pregnancy Tests	Test	NA	
Simple Syrup (Cherry flavor)	Bottle	PO	
X-ray envelopes	Each	NA	
Syringes (1/2", 27 gauge)	Syringe	NA	
Tuberculin Skin Test	Vial	SC	
Amber RX bottles	Vial	NA	For self-admin. DOT

*This list was developed by the TX DSHS TB and Hansen's Disease and Pharmacy Branches. Other anti-TB medications *may be available* for out-patient use; first, contact the DSHS Pharmacy. If the drug is not available, you may request changes or additions of other anti-TB medications by emailing: TBEpiEvaluation@dshs.texas.gov or by calling 512-533-3144.

**See DSHS SDOs for medical consultation requirements

Appendix B: Auxiliary Medications for TB Treatment

When providers request medications not listed on the *Tuberculosis Medication Formulary* (e.g., ondansetron, corticosteroids, lidocaine etc.) to support individualized patient care, the following options exist:

1. The TB provider may write a prescription.

- The licensed prescriber may write a prescription for the medication, and the patient may fill that prescription at their own expense.

2. The managing TB Program can coordinate with the patient's medical home.

- TB Programs may work with the patient to develop a medical home and collaborate with the treating clinician there to prescribe the medication needed.
 - For example, a TB program could seek written permission from the patient (using the L-30 or equivalent) to coordinate the order of ondansetron from the patient's primary care provider, and the patient could use their insurance to cover the cost of the medication.
- For uninsured patients, TB programs may provide a list of low-cost pharmacies or refer patients to Federally Qualified Health Centers (FQHCs) or Community Health Clinics to ensure patient has a medical home outside of the TB program.

3. The provider may consider over-the-counter medications, if applicable.

- Providers can consider over-the-counter medications with generic brands that the patient may purchase at their own expense.

4. The managing TB Program may request the medication via the DSHS TB and Hansen's Disease Branch, *when the above options have been exhausted.*

- If a patient has an extreme medical need requiring another drug to support their tuberculosis management (e.g., a patient with MDR/XDR- TB who is discharged from TCID and needs an anti-



emetic for vomiting; a patient with TB meningitis needing corticosteroids), send the following to the TB and Hansen's Disease Branch:

- DSHS form TB-400B (or equivalent): overview of case information.

Plus, at least one of the following:

- Provider's/prescriber's note: progress note or email from the prescriber indicating the medical necessity for the medication with dosage and expected duration.
- Medical Consult: copy of a [DSHS-recognized TB medical consultant's](#) recommendation of the supportive medication with anticipated duration.
- TCID consult or discharge summary: If patient was receiving care at TCID, a discharge summary or note indicating the medications needed and expected duration of the need.

Upload the above information to the PHIN and email file location and password to: TBEpiEvaluation@dshs.texas.gov. Once uploaded, **contact the DSHS pharmacy directly to arrange the order: 512-776-7500**. For questions regarding this process contact the TB and Hansen's Disease Branch at 512-533-3144 or 512-533-3000.

Appendix C: NTIP Reporting Requirements

For TB cases, registries are required to ensure at least 99.2% valid responses for all NTIP reporting variables by the end of the current reporting year, and 99.4% by the Surveillance Branch deadline in mid-March of the following year.

The following is a list minimum NTIP variables required at the time of initial report:

- Date of initial report
- Date case was confirmed as a class 3
- Criteria for the published case definition for a lab confirmed diagnosis or clinical case of TB or a clinical case of TB by provider diagnosis
- Valid and verified address
- Race and ethnicity
- Date of birth
- Country of birth; if not U.S., and date of arrival into the U.S.
- Initial susceptibilities, including MDR and XDR cases, for culture-confirmed cases
- HIV status
- Site of disease (select all that apply); if military, must provide at least two sites of disease when one of the sites is pulmonary
- Vital status at diagnosis
- History of prior disease

The following is a list of additional variables are required to be reported within the current year:

- Additional information for pediatric client
- Sputum smear
- Sputum culture
- Smear/pathology/cytology of tissue and other body fluids
- Culture of tissue and other body fluids
- NAA test result
- Initial chest radiograph and other chest imaging study
- Tuberculin skin test
- IGRA test result
- Occupation
- Primary reason evaluated for TB

- Homeless within past year
- Primary occupation within the past year
- Injection drug use within past year
- Non-injection drug use within past year
- Excess alcohol use risk factor identified within past year
- Additional TB risk factors
- Immigration status
- Date therapy started
- Initial drug regimen

Upon case closure, registries must also provide valid responses for the following NTIP variables, if the case was alive at diagnosis:

- Sputum culture conversion date (collection date must be at least one day (from last known positive sputum culture)
- If moved, specify if in-state and use DSHS TB-220 to submit to corresponding jurisdiction
 - Use IJT form if out-of-state
 - Use CDC notification forum or Cure-TB form if outside the U.S.
- date therapy stopped
- type of outpatient provider (all that apply)
- DOT
- final drug susceptibility testing
- final drug susceptibility test results; collection date must be at least 30 days from date of collection of initial susceptibility results

Appendix D: DACTS Audit Tool

TB/HIV/STD Unit
Epidemiology and Surveillance Branch

DACTS Audit Tool for State-Designated Case Registries (Draft)

Num 1	Procedures for Training Requirements	Yes	No	If no, plan for improvement
1.1	<p>Have all members of TB Case Registry team completed their training?</p> <ul style="list-style-type: none"> • How many members? _____ • How many completed? _____ • How many did not complete? _____ 			
1.2	Basic TB Facts			
1.3	Core Curriculum on Tuberculosis, Sixth Edition 2013			
1.4	Diagnostic Standards/Classification of TB in Adults and Children; AM J Respir Crit Care Med 2000;161			
1.5	Guidelines for the Investigation of Contacts of Persons with Infectious Disease; MMWR 2005, 54 (No RR-15, 1-37)			
1.6	Aggregate Reports for TB Program Evaluation, Training Manual and Users Guide			
1.7	RVCT Instructions Manual			
1.8	A Guide and Toolkit for QA for TB Surveillance Data			
1.9	<p>TB101 for Health Care Workers</p> <p>https://www.cdc.gov/tb/wecourses/TB101/intro.html</p>			
1.10	Central Office Orientation			
1.11	Annual Workshop			

1.12	Monthly TB Surveillance Conference Calls			
1.13	TBNN Workgroup			
Num 2	Procedure for System Access Requirements	Yes	No	If no, plan for improvement
2.1	Do all team members have access to the necessary systems to perform their surveillance duties?			
2.2	PHIN – Public Health Information Network			
2.3	Access to state and federal training websites			
2.4	THISIS			
2.5	PHLIMS/Labware – Public Health Laboratory Information Management System			
2.6	NTIP – National TB Indicators Project System			
2.7	NTSS – National Telecommunications Surveillance System			
2.8	TB GIMS – TB Genotyping Information Management System			
2.9	EDN – Electronic Disease Notification System			
Num 3	Procedures for Protocol Requirements	Yes	No	If no, plan for improvement
3.1	Written Protocol for Surveillance QA			
3.1	Case Detection			
3.2	Data Accuracy			
3.3	Data Completeness			
3.4	Data Timeliness			
3.5	Data Security and Confidentiality			
3.6	Plan for Improvement			

Num 4	Procedures for Case Detection Requirements	Yes	No	If no, plan for improvement
4.1	Maintain a Registry of TB Records: <ul style="list-style-type: none"> • Cases-contacts • Suspects-contacts • LTBI's referred or targeted testing 			
4.1a	Records Inventory			
4.2	Established liaisons with appropriate reporting sources to enhance quality assurance of TB surveillance data.			
4.3	Developed and implemented active case detection activities.			
4.4	Evaluated the completeness of reporting of TB cases to the surveillance system.			
Num 5	Procedures for Data Accuracy Requirements	Yes	No	If no, plan for improvement
5.1	Evaluated accuracy or validity of RVCT data.			
5.2	Assessed knowledge, skills, and abilities of staff and provided training if needed.			
5.3	Provides training on Data Entry Standards.			

5.3a	Adheres to Data Stamping policy.			
5.2b	Adheres to complete record search.			
Num 6	Procedures for Data Completeness Requirements	Yes	No	If no, plan for improvement
6.1	Maintains Completeness of all RVCT variables.			
6.2	Matches TB and HIV Case Registries			
6.3	Evaluates programmatic performance by using TB surveillance data, at least annually.			

Num 7	Procedures for Data Timeliness Requirements	Yes	No	If no, plan for improvement
7.1	Reports all newly diagnosed cases of TB to central office according to schedule			
7.1a	Cases			
7.1b	Suspects			
7.1c	Contacts			
7.1d	IJNs			
7.1e	LTBI s			

7.2	Submits complete RVCT reports to central office according to schedule			
7.3	Analyzes TB surveillance data at least quarterly.			
7.4	Evaluates programmatic performance by using TB surveillance data at least annually.			
Num 8	Procedure for Security and Confidentiality Requirements	Yes	No	If no, plan for improvement
8.1	List of the minimum standards required for data sharing and use of surveillance data for public health action.			
8.2	Guidelines on how to initially assess the TB program's data security and confidentiality policies and procedures.			
8.3	Checklist for conducting ongoing assessment of TB program compliance with the data security and confidentiality guidelines.			
8.4	Questions and Answers to clarify issues regarding the Data Security and Confidentiality Guidelines.			

8.4a	Guidelines filed with Surveillance Procedures Manual			
8.4b	Records in locked cabinet, in locked room.			
8.4c	Fax machine and copier in locked room.			
8.4d	Use only iron key flash drives for storing working files containing data.			
8.4e	Data files have a back-up system.			
Num 9	Maintains log for TB employees and other entities and dates of training and presentations.	Yes	No	If no, plan for improvement
9.a	Log for TB employees			
9.aa	Date, name of employee, jurisdiction or clinic, name of training			
9.b	Log for other entities			
9.bb	Date, employee, entity, name of training, number participated			
Num 10	Maintains personal folder of training materials in common or shared drive.	Yes	No	If no, plan for improvement
10.a	Slide Presentations from conferences and workshops			



10.b	World TB Day Presentations			
10.c	TB Surveillance Brown Bag Presentations			
10.d	What is TB, Questions and Answers Test			
10.e	THISIS Instructions and Updates			
	Other Training Documents			

Appendix E: Tuberculosis Funding Formula

Component	Weight (%)
Needs Distribution	
<i>Laboratory or Clinically Confirmed Cases</i>	38
<i>MDR-TB</i>	5
<i>TB Suspects</i>	15
<i>HIV/TB Co-Infected Cases and Suspects</i>	10
<i>TB Cases and Suspects from Special Populations</i>	10
<i>Subtotal</i>	78
Performance Distribution	
<i>TB Cases Completing Treatment</i>	7
<i>TB Infections Completing Treatment*</i>	5
<i>Subtotal</i>	12
Geographic Distribution	
<i>Total Population in Funded Area</i>	5
<i>Total Square Miles in Funded Area</i>	5
<i>Subtotal</i>	10
Total	100

*Data supplied by Surveillance Branch

Appendix F: TB Funding Formula Glossary of Terms

Laboratory or Clinically Confirmed TB Cases – All culture-confirmed and provider-diagnosed Texas and non-Texas cases assigned to a jurisdiction. Funding formula combines all confirmed counted cases within a five-year period.

Texas Cases – Cases that meet the current Texas case definition for verified TB to determine annual incidence.

MDR-TB Cases – Multi-drug resistant TB cases resistant to at least isoniazid and rifampin. MDR-TB cases are a subset of all counted cases assigned to a jurisdiction.

TB Cases Completing Treatment – All Texas and non-Texas cases completing treatment based on the National TB Indicators Project (NTIP).

TB Suspects – Persons started on a four-drug TB regimen while awaiting laboratory or clinical information resulting in a disposition that TB was ruled out.

HIV/TB Co-infected Cases and Suspects – Confirmed or suspected TB cases with comorbid HIV condition.

TB Cases and Suspects from Special Populations – Confirmed or suspected Texas and non-Texas TB cases who fall in one or more of the following groups:

- A child less than five years at diagnosis
- U.S. born minority
- Homeless
- Foreign born
- Person with history of substance abuse
- Border resident-La Paz counties
- Person with diabetes
- Client of a DSHS-funded refugee clinic

Total Population in Funded Area – Based on Population Censuses' Datasets



Total Square Miles in Funded Area – Calculated from County Level Geometry using ArcGIS 10.2.2. Data set downloaded from the Texas Natural Resources Information System. File last updated April 2012.

TB Infections Completing Treatment – Persons identified as asymptomatic, having a positive test IGRA or TST, and a normal chest X-ray. These persons shall receive and complete treatment for TB infection using a DSHS Branch approved treatment regimen that were identified as:

- contacts to a counted case in Texas; or
- member of a special population.