**BCCDC Clinical Prevention Services**
**Decision Support Tool: Non-Certified Practice - Tuberculosis Screening**

# TABLE OF CONTENTS

# TUBERCULOSIS SCREENING

## Practice Update

The Canadian TB Standards, 8th edition has updated tuberculosis (TB) terminology used in practice to more accurately reflect the importance of testing and treating TB infection (also known as latent TB infection) and TB disease (also known as active TB disease). The terms "TB infection" and "TB disease" are used in this document and elsewhere in the BCCDC Provincial TB Manual (1).

## Practice Summary

### Focus

Nursing professionals can improve equitable access to TB care through the application of trauma informed practice[1] and cultural safety[2] principles in all client interactions. The TB Screening Decision Support Tool (DST) provides direction on:

1. TB screening indications
2. TB tests to complete based on the information gathered from the TB history and TB risk assessment
3. Follow-up and referrals based on the TB screening results
4. Infection prevention and control measures to implement during TB screening activities

Even with the availability of effective treatment, rates of TB remain universally tied to the social determinants of health and health inequities. TB disease continues to disproportionately affect individuals born outside of Canada, Indigenous Peoples, and people experiencing homelessness or under-housed populations[3].

### Practice Level

The BC College of Nurses and Midwives (BCCNM) lists TB screening as a restricted activity and provides limits and conditions on nursing practice (5). BCCNM Scope of Practice documents for Licensed Practical Nurses (LPN), Registered Nurses (RN), and Registered Psychiatric Nurses (RPN) state that nurses who administer purified protein derivative (LPN, RN, RPN) or order a chest x-ray (RN, RPN) for TB screening:

- must possess the competencies established by the BC Centre for Disease Control (BCCDC)
- follow the decision support tool (DST) established by the BCCDC

### Site Applicability

All health authorities in BC are engaged in TB screening activities. This includes public or community health centres, outreach clinics, correctional facilities, some physician offices and acute care settings. It also applies to private organizations such as residential treatment programs, shelters and travel clinics as well as some pharmaceutical and research settings.

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[1] For more details on trauma informed practice, refer to Helping Families, Helping Systems: A Trauma-Informed Practice Guide for Working with Children, Youth and Families (2).
[2] For more details on culturally safe care, refer to the BCCNM Practice Standard: Indigenous Cultural Safety, Cultural Humility, and Anti-Racism (3).
[3] For more details on TB health inequity in Canada, refer to The Time is now: CPHO Spotlight on Eliminating Tuberculosis in Canada (4).

**Key Points**

- *Mycobacterium tuberculosis* complex is a group of mycobacteria that can cause TB disease in humans. Transmission is primarily airborne, from person-to-person. It usually infects the lungs, but can occur anywhere in the body. It is preventable and curable.
- Diagnosis and treatment of TB disease is the first priority in TB prevention and care. A second important priority is diagnosing and treating TB infection in people with TB risk factors in order to prevent TB disease.
- The tuberculin skin test (TST) and interferon gamma release assay (IGRA) are both TB screening tests with clinical limitations. The results MUST be interpreted in the context of the reason for screening, a person's risk assessment, and clinical evaluation, which may include a chest x-ray (CXR).
- For clients with untreated TB infection and ongoing risk factors, consider revisiting TB Preventive Treatment (TPT) as part of a persons' ongoing care plan. Reactivation TB disease is the majority of TB cases in BC, which can be prevented with short, safe, and effective TPT regimens.
- Trauma-informed, culturally safe and linguistically tailored care are an essential part of TB screening. (6,7).

# RISK ASSESSMENT

## Practice Statement

The TB risk assessment outlines information required for efficient and effective TB screening and appropriate client referral to BCCDC TB Services (TBS). It provides information regarding potential TB exposure and/or infection, and the risk for the development of TB disease.

Identify any barriers to care before initiating the assessment, including the need for translation services and/or a support person. Clearly outline the purpose of the TB risk assessment, what the client can expect at the appointment and the role of the health care provider.

**Consider strategies to build rapport and trust:**

- Ensure confidentiality, promote cultural safety, and engage in compassionate communication by asking open-ended questions in a non-judgmental manner.
- Invite questions throughout the assessment and avoid technical jargon and stigmatizing language[4].
- Acknowledge and validate people's concerns and promote client-centred care. For example, consider a person's health and social needs and recognize that TB screening in some circumstances may require multiple visits.

[4] Refer to the STOP-TB Partnership Words Matter Language Guide, 2nd ed (8) and the BCCDC COVID-19 Language Guide (9).

## Screening Indications

TB screening programs support populations who are at increased risk of exposure to and development of TB disease. The Population-based TB Screening section outlines specific recommendations.

**In BC, TB screening is indicated for:**

- people presumed to have TB disease.
- people at increased risk for TB infection (**see Table 1**).
- people at increased risk for the development of TB disease (**see Table 2**).
- people undergoing immigration medical surveillance screening (see Table 12).
- employees, students, and volunteers in some workplace settings (see Table 7a).

**Fee for testing is applicable for:**

- International travellers to a country with a high TB incidence, unless clear contact or exhibiting symptoms. See Travellers screening recommendations for details.
- Persons requiring testing for an educational program, a volunteer position, or for employment.
- Persons who self-refer that do not meet the criteria for testing without cost.

## History

### Practice Statement

Gathering a relevant TB history including details related to past testing results, treatment, exposure and bacille Calmette-Guerin (BCG) vaccination, impact decisions on what TB tests to consider. For example, the TB history will help determine when to use a TST, a CXR and/or an IGRA.

The following is considered relevant information to collect for a "TB History" and is outlined in Part 2 of the TB Screening Form:

- Prior history of TB disease and treatment
- Prior history of TB infection and treatment
- Prior TB screening test results
- History of BCG vaccination and/or BCG scar
- Country of origin and date of arrival to Canada
- Recent contact (within the past 2 years) to a person with TB disease. Refer to Section 7 and Section 8 for contact tracing principles and the assessment and follow-up of TB contacts.
- Historical contact (more than 2 years ago) to a person with TB disease (if known, include source case, approximate date and other relevant details).

## Risk Factors

### Practice Statement

The risk of TB exposure related to having been born, traveled to or resided in a country with a high TB incidence* can be difficult to determine based on the changing rates of TB over time. Canada, the United States, Australia, New Zealand, and countries in western or northern Europe are not considered areas with a high TB incidence.

* annual number of new cases in a specified time period for a particular country, region or setting.

In BC, clients screened for TB who report birth, residence or travel of a specific type in:

- A country with a TB rate of 50/100 000 or more should be considered relevant to the TB risk assessment.
- Use the WHO TB country, regional and global profiles for TB to identify high TB incidence countries (TB disease rate of 50/100 000).

**Table 1: Risk factors for TB exposure and TB infection***

| | |
|---|---|
| • Recent or historical close contact to a case of respiratory TB disease, especially if under the age of 5 or PLWH<br>• Born in a high TB incidence country♦<br>• Persons who inject drugs (PWID)† and/or use inhaled crack/cocaine substances (10,11)<br><br>**Live, work or spend time in regions or settings where TB exposure may be increased related to**:<br><br>• A community's historical experience with TB (6)Ω<br>• A high incidence of TB disease related to a TB cluster or outbreak (12)§<br>• The experience of homelessness or being under housed (i.e., shelters, no fixed address)<br>• Residence in a congregate living setting (e.g., correctional facility, treatment programs) | **Travel to a country with a high TB incidence♦**<br><br>• For more than 3 months.<br><br>or<br><br>• With very high-risk contact (e.g., direct patient care in a hospital, prison, homeless shelter, refugee camp, underserved inner city neighbourhood) (7). |

* Consider exposure risk factors since the last negative TST result or TB treatment date, as applicable.

♦ A country with a TB rate of 50 per 100 000.

† Although precise estimates are not available, people who inject drugs appear to have a higher risk of TB infection. Multiple factors likely impact this risk such as co-morbid conditions, undernutrition and social factors. In addition, people who inhale crack or cocaine often have lung damage that increases their risk.

Ω TB rates can vary dramatically within regions in Canada and BC, with some areas experiencing recurrent TB clusters and outbreaks due to historical and current inequities related to colonialism.

§ TB clusters and outbreaks are uncommon in Canada and BC. However, they are more likely to occur in populations or settings experiencing social and health inequities.

**Table 2: Risk factors for developing TB disease if infected with TB***

| Very High Risk♦ | High Risk | Moderate Risk |
|---|---|---|
| • People living with HIV (PLWH)<br>• TB contact within the past 2 years, especially if child less than 5 years old or adolescent<br>• Silicosis | • Chronic kidney disease on dialysis or end-stage<br>• Transplant recipients (related to immune-suppressant treatment and underlying chronic disease)<br>• Some cancers (lung, sarcoma, leukemia, lymphoma, gastrointestinal, head and neck)<br>• Abnormal CXR – fibronodular disease<br>**Receiving immunosuppressant drugs:**<br>• Biologics such as tumour necrosis factor alpha inhibitors (TNFi) and/or other disease modifying anti-rheumatic drugs (DMARDs)<br>• Steroid treatments equivalent to 15 mg or more per day for 1 month or longer | • Diabetes mellitus (all types)<br>• Heavy alcohol consumption<br>(3 drinks/day or more)<br>• Cigarette smoker<br>(1 pack/day)<br>• Abnormal CXR-granuloma (may reflect healed TB)<br>• Underweight (less than 90% ideal body weight or BMI less than 20) |

* This table is modified from the Canadian TB Standards, Chapter 4, Table 2. Risk of TB disease and the incidence rate ratio of TB disease among different populations stratified by risk.
♦ PLWH and children less than 5 years old are candidates for window period prophylaxis (WPP). Refer to Table 11 for further information.

## Signs and Symptoms Evaluation

### Practice Statement

Interpret a person's signs and symptoms of TB disease in the context of the reason for screening, their risk assessment and TST result, since TB symptoms are non-specific and may be caused by other medical conditions. This will support appropriate referrals for CXR and the decision to collect sputum samples.

Additionally, gather a person's history of their reported symptoms, including trends or patterns. For example, a person with ongoing respiratory symptoms and limited response to multiple courses of antibiotics requires diagnostic tests to investigate TB disease.

**Table 3: Signs and symptoms of TB disease**

| Systemic Signs & Symptoms | Respiratory TB Disease | Non respiratory TB disease |
|---|---|---|
| • Fever *<br>• Night sweats *<br>• Loss of appetite (anorexia)<br>• Unexplained weight loss<br>• Fatigue | • Systemic signs and symptoms<br>• Cough (dry or productive) for more than 2-3 weeks, with/without fever<br>• Bloody sputum (hemoptysis)<br>• Chest pain<br>• Shortness of breath<br>• Abnormalities on CXR♦ | • Systemic signs and symptoms<br>• Pain, swelling, and/or dysfunction of the involved body site(s) (i.e., swollen lymph node) |

* May be absent in the very young and elderly
♦ Radiographic presentation can be atypical in the very young, old or immune compromised.

**Physical Assessment**

A physical assessment may be appropriate in certain situations, such as when clients present with symptoms of TB disease and/or they are being screened as a recent contact. For example, temperature, weight, and/or noting site and size of lymph node(s).

## Infection Prevention and Control

Generally, most people undergoing TB screening are asymptomatic. However, if there is a high degree of clinical evidence of TB disease, for example, a person with TB signs and symptoms who is being screened due to recent contact to a person with TB disease, appropriate infection prevention and control measures should be implemented. Refer to Appendix B Infection Prevention and Control for guidance and refer to Symptomatic TB Screening for details on clinical management.

**Note:** For clients in the community, consult with TBS or your local CD unit if considering placing someone on isolation. If a client is placed on isolation, it is important to have clear communication with the client and a follow-up plan to determine when to end airborne precautions.

# SCREENING TESTS

## Practice Statement

In BC, two types of TB screening tests are used to help clinicians determine the presence of TB infection: the Tuberculin Skin Test (TST) and Interferon Gamma Release Assay (IGRA). Both tests have limitations as they do not directly measure TB infection, rather, they work by measuring a host's immune response to antigens found in *Mycobacterium tuberculosis*. Neither test can distinguish between TB infection and TB disease. Neither test is confirmatory.

Therefore, TB screening tests are important and helpful tools, but a diagnosis of TB infection involves interpreting the test result in the context of clinical details (e.g., risk assessment, signs and symptoms evaluation and diagnostic tests).

## Tuberculin Skin Test

In general, a TST is the test most often used to screen for TB infection in BC. There are circumstances where a TST is not required to complete TB screening, or, it is contraindicated to administer the test, or an IGRA is the preferred test. For information on administering a TST, refer to Appendix A.

**Approach to TB skin testing:**

1. Consider the reason for TB screening and review the applicable Population-based TB Screening section to determine if a TST is recommended.

2. If a TST is recommended, review the following to determine if a TST is appropriate for your client.

   **Contraindications:**
   - TUBERSOL® should not be administered to clients with **a** prior acute allergic reaction, including anaphylaxis to TUBERSOL® or to any components of the formulation or container.
   - Severe injection site reaction to a previous TST (e.g., necrosis, blistering, or ulcerations).

   **Precautions:**
   - Those with extensive burns or eczema present over TST testing sites, because of the greater likelihood of adverse or severe reactions or difficulty measuring induration. If localized, consider using alternate sites (see Appendix A, Figure A-1). If extensive, avoid administering TST and consult TBS for guidance.
   - If client reports past positive TST but there is no documentation: Look for historical TB documentation in your agency EMR, the provincial TB database or ask the client if they have a record of their previous TST result. If the client is unable to provide a clear description of the positive TST, use your clinical judgement to determine if a TST is appropriate.

   **No clinical utility[5] in performing TST**
   Clear history of previous TB disease or TB Infection, whether treated or not; current diagnosis of TB disease or documented previous positive TST or a previous reactive IGRA.

3. If a TST is appropriate for your client, refer to Table 5: Special Considerations for TST and IGRA for guidance on client scenarios that may impact the timing of the TST and/or the need for repeat testing.

[5] If a health care provider decides that a TST is truly positive, there is no clinical utility in performing a TST in the future, so long as the test was properly performed, read and interpreted (13).

### TST Results

A TST result, considered in context with other clinical factors, is used to help determine if further testing (e.g., CXR) and referral to TBS is required. Not all positive TST results indicate TB infection nor lead to treatment, and not all negative TST results indicate an absence of TB infection (See Section 4(a)).

Persons with TB infection may display a wide range of induration sizes and multiple factors impact the cut-off threshold of the TST result.

- Review **Table 4** for information on the TST reaction size and cut-off thresholds in various populations.
- Review Table 5: Special Considerations for TST and IGRA testing for information on clinical factors such as immune suppressing treatment or recent vaccination that may impact a result.

### TST Documentation

Measure and document the TST result as per Appendix A. TST results are documented in millimeters (e.g., 12 mm). Do not use decimal points.

Document the results of the TB risk assessment, signs and symptoms and other relevant clinical data and refer to TBS.

**Practitioner Alert!**

Clients with clearly documented positive TST results should not have this test again.

**Table 4: TST cut-off threshold points ***

| TST reaction (mm) | Situations where the TST reaction size may be considered positive |
|---|---|
| **5 mm or more** | • People living with HIV infection ♦<br>• Children less than 5 years and at high risk for TB infection (e.g., close contact to a case of TB disease) ♦<br>• Contacts to a case of TB disease within the past two years<br>• Fibronodular disease on CXR (evidence of healed, untreated TB)<br>• Prior to organ transplant † and immunosuppressive therapy Ω<br><br>**Prior to receipt of:** Ω<br><br>• biologic drugs (e.g., TNFi) and/or other DMARDs<br>• immunosuppressant drugs (e.g., steroid treatments equivalent to 15 mg or more per day for 1 month or longer) |
| **10 mm or more** | **All others, including (but not limited to):**<br><br>• Diabetes (controlled or uncontrolled)<br>• Malnutrition (less than 90% of ideal body weight)<br>• Current tobacco smoker (any amount)<br>• Daily consumption of greater than 3 alcoholic drinks<br>• Silicosis<br>• Hematologic malignancies (lymphomas and leukemia) and certain carcinomas (i.e., cancers of head, neck, lung and/or gastrointestinal tract)<br>• Any population considered at low risk of TB disease |

* Baseline IGRA testing is recommended for renal patients. Refer to BC Renal TB Screening Guidelines (e.g., Kidney Care Patients Not on Dialysis, Peritoneal dialysis or Hemodialysis).
♦ If client is a contact, consider WPP (refer to Section 8: Assessment and Follow Up of TB Contacts).
† Transplant programs in BC recommend using an IGRA for those greater than 2 years of age.
Ω The preference is to complete TB screening prior to the start of immunosuppressive therapy. However, if the client is already receiving treatment, the same TST cut-off threshold applies.

## Interferon Gamma Release Assay

An IGRA is recommended by TBS in specific circumstances or populations (see the Physician IGRA Guidelines). For example, to support the diagnosis of TB infection in Indigenous or foreign-born persons with BCG vaccination. In addition, some provincial programs have TB screening guidelines recommending IGRA for their clients who are at increased risk for exposure and progression to TB disease. For general information on IGRAs see Section 4(a).

**It is important to emphasize that IGRA:**

- cannot distinguish between TB infection and TB disease.
- is not confirmatory.
- is not a "better" test but is a supplementary test to aide clinicians in evaluating for TB infection.

Direct IGRA testing (without doing a TST first) is recommended for some clients, but generally the decision to offer an IGRA is made by TBS and other specialty practice areas.

If previous IGRA testing is identified during the TB assessment, the Population-based TB Screening section will offer guidance on next steps. For clients previously offered TPT that declined treatment, revisit the recommendation with clients.

If IGRA testing is recommended for a client, refer to **Table 5 for special considerations for TST and IGRA testing**. The Nurse IGRA Guidelines provide further details on the ordering process and IGRA testing sites in BC.

## Special Considerations for TST or IGRA testing

### Practice Statement

Some client scenarios may affect the sensitivity of a TST or IGRA. However, do NOT delay these tests if a client has a time-sensitive medical need. Repeat testing may be considered for some clients with a high likelihood of TB infection* and a potential false-negative TST or IGRA.

**Table 5: Special considerations for TST or IGRA testing (continued on next page)**

| Client Scenario | TB Infection Testing (TST or IGRA) | Refer to TBS |
|---|---|---|
| • History of BCG vaccination(s).<br>• Common cold, mild illness (with or without fever).<br>• Pregnant or breast or chest feeding.<br>• Immunized within the previous 4 weeks with vaccines not specified below.<br>• Low dose steroid treatments (less than 15 mg). | Proceed with testing, these do not interfere with the result. | |
| **Immune compromised due to medical condition or treatment** (e.g.) steroid treatments equivalent to 15 mg or more per day for 1 month or longer may suppress TST and IGRA reactivity. | **Proceed with testing if screening due to:**<br>• a time-sensitive medical need, or;<br>• the client is on chronic immune suppressing treatment (e.g. long-term steroid treatment).<br>Otherwise, wait until 4 weeks after treatment completion. | If screening due to medical need:<br>• Obtain CXR<br>• Refer, regardless of test result |
| **TB exposure in the last 2-8 weeks.** It can take 2-8 weeks after a TB exposure to reliably respond to tuberculin or IGRA testing, if infected. | Proceed with testing as per Section 8 Assessment and Follow-Up of TB Contacts | |
| **TST and IGRA performed in the same month.** Theoretically, a previous TST may "boost" a subsequent IGRA result if the IGRA is collected within 1 month of TST. | Proceed with testing. TBS will factor in timing of testing, as appropriate. | |
| * Clients with a high likelihood of TB infection are those with recent close contact with a person with infectious TB disease or those born in a high TB incidence country who are starting biologics or other immune suppression treatment. | | |

**Table 5: Special considerations for TST or IGRA testing continued**

| Client Scenario | TB Infection Testing | Repeat Testing | Refer to TBS |
|---|---|---|---|
| **Current or recent (within 4 weeks) major viral infection.** Major viral infections (e.g., measles, mumps and varicella) have the potential to impact cell-mediated immunity (14). | Proceed with testing at anytime after a major viral infection if screening due to a time-sensitive medical need.<br><br>Otherwise, defer testing until 4 weeks after the resolution of symptoms. | Repeat testing may be considered for clients with a high likelihood of TB infection*<br><br>**AND**<br><br>a negative TB infection test result within 4 weeks of:<br>• major viral infection<br>• severe COVID-19 infection<br>• injectable live-virus vaccine<br>• COVID-19 vaccine<br><br>A repeat TST or IGRA would occur 4 weeks after the resolution of symptoms or administration of the vaccine. | If screening due to a medical need:<br>• Obtain CXR<br>• Refer, regardless of test result |
| **Current or recent (within 4 weeks) severe COVID-19 infection.** There is limited evidence that severe COVID-19 infection impacts cell-mediated immunity and IGRA or TST results (15–17). There is a theoretical potential to impact cell-mediated immunity. | Proceed with testing at anytime after a severe COVID-19 infection. | | If screening due to a medical need<br><br>**OR**<br><br>if a positive TST result:<br>• Obtain CXR<br>• Refer to TBS |
| **Injectable live-virus vaccine within the past 4 weeks.** Only the measles vaccine has been shown to increase the likelihood of false-negative TST results, but it is prudent to follow the same 4-week guideline for other injectable live-virus vaccines (13). | Proceed with testing on the same day or 4 weeks after an **injectable** live-virus vaccine.<br><br>**At any time following vaccination if:**<br>• screening due to time-sensitive medical need, or;<br>• if the opportunity to perform the TST in the future might be missed. | | |
| **Current or recent (within 4 weeks) COVID-19 vaccine.** There is a theoretical risk that mRNA or viral vector vaccines could temporarily affect cell-mediated immunity, resulting in false-negative TST or IGRA test results. However, there is no direct evidence for this interaction (18). | Proceed with testing on the same day or anytime before or after a COVID-19 mRNA or viral vector vaccine. | | |
| * Clients with a high likelihood of TB infection are those with recent close contact with a person with infectious TB disease or those born in a high TB incidence country who are starting biologics or other immune suppression treatment. | | | |

# DIAGNOSTIC TESTS & REFERRALS

## Chest X-Ray

### Practice Statement

A CXR is an important part of the TB screening process, but it is not always required. The Population-based TB Screening section will outline CXR recommendations based on the reason for screening and information gathered in the TB assessment.

If ordering a CXR for clients with a high degree of clinical evidence for TB disease, collect 1 stat sputum specimen for acid-fast bacilli (AFB), plus two additional AFB specimens. See Symptomatic TB Screening.

**Pre-existing CXR**
In some circumstances, a recent CXR may be used for referral to TBS. Refer to **Table 6: Timeframes for use of a pre-existing CXR and when to order a new one**.

**CXR Contraindications**
If a client is pregnant or possibly pregnant, consult TBS or a most responsible provider (MRP) to determine if a shielded CXR is indicated. CXR may be deferred until after delivery for most asymptomatic clients. In lieu of a shielded CXR, TBS may recommend sputum specimen testing, or defer screening if not deemed essential.

**CXR Limitations**
Abnormal CXR findings are not all specific for TB therefore additional tests, such as sputum specimen testing and a relevant TB risk assessment, are required to confirm or exclude TB disease.

**Practitioner Alert!**

**CXR views:**

- For children less than 5 years of age and people living with HIV infection, order posterior-anterior (PA) **and** lateral CXR views
- Order PA view only for all other clients

**Table 6: Timeframes for use of a pre-existing CXR and when to order a new CXR**

If the Population-based TB Screening section recommends a CXR, in some situations, a recent CXR may be appropriate to include as part of the referral to TBS.

| **Client Scenario** | | |
|---|---|---|
| Symptomatic | A new CXR is required. | |
| Contact<br>• with a NEW positive TST; or<br>• reactive IGRA result | | |
| **Client Scenario** | | |
| **Asymptomatic and reason for screening is:** | **Use CXR* from past 6 months** | **New CXR required** |
| Contact less than 5 years old | | Yes ♦ |
| Contact greater than 5 years old<br>• with a previous positive TST/IGRA; or<br>• prior TB treatment | | Yes, at 8-week post-exposure assessment |
| Medical risk factors | Yes | * |
| PLWH | | Yes ♦ |
| Work, school or volunteer | Yes | * |
| Congregate living | Yes | * |
| Immigration | If CXR* completed in Canada from the past 9 months, it is valid for the initial Medical Surveillance assessment. | |

* If prior CXR is abnormal (e.g. showing evidence of pneumonia) a new CXR is required.
♦ Order PA and lateral views.

## Referral to BCCDC TB Services

All clients requiring a CXR must be referred to TBS. If applicable, follow your health authority's policy for how to submit a referral.

A complete referral includes:

- TB screening documentation and results
- A recent CXR or imaging **(See Table 6 above)**

Further recommendations from TBS will follow. Delays should be expected with incomplete referrals as they will be returned to the clinician to obtain missing documentation, results, CXR or imaging.

## Sputum Collection

### Practice Statement

Mycobacterial culture is the gold standard method for the detection of respiratory TB disease. Proper collection and processing of respiratory specimens is essential in providing valid results for lab confirmation of the *Mycobacterium tuberculosis* complex by either nucleic acid amplification testing (NAAT) or culture.

**When to collect three sputum samples:**

- The client has signs and symptoms of respiratory TB disease (see Table 3)
- The client has a CXR result suggestive of TB disease
- The client has HIV infection and is newly TST positive and/or IGRA reactive (see HIV section)
- The client has or is presumed to have non-respiratory TB disease (concurrent respiratory TB disease needs to be ruled out; CXR would be indicated as well)

### Practitioner Alert!

Collect **1 stat sputum specimen** for AFB plus two additional AFB specimens when a client:

- Has a high degree of clinical evidence for TB
  - TB exposure risk and TB symptoms or CXR findings suggestive of TB
  - See Symptomatic TB Screening
- Has TB exposure risk and barriers to care impact ability to return for sputum collection.

**Sputum Collection Practices**

- Collect three sputum specimens for AFB smear and culture. See Appendix C for information on sputum collection processes and Appendix D for guidance on sputum induction.
- For client education resources, see the Client Education Resources.
- For access to lab requisitions, see the Health Care Professional Resources.

## HIV Testing

Offer an HIV test to all clients tested for or diagnosed with TB disease (see HIV Testing Guidelines for the Province of British Columbia). For clients referred for IGRA testing, offer an HIV test at the same time.

# POPULATION-BASED TB SCREENING

Recommendations provided here will be appropriate in most but not every situation. Consult TBS when there is uncertainty on TB screening for individual clients.

The TB Screening Form provides the framework for TB screening, and acts as referral pathway for TBS to communicate recommendations.

- Incomplete information may result in a delayed response time.
- The reason for screening code must be clear on all TB screening documentation, as this greatly influences the interpretation of the screening assessment by the TB clinician.

**A TB risk assessment and TB signs and symptom evaluation is required for ALL TB screening.**

The following tables outline further testing recommendations for TB infection or TB disease.

**Practitioner Alert!**

Follow Figure 1. Symptomatic TB screening for any client presenting with TB signs or symptoms.

## Screening for Work, School or Volunteers

If a referral to TBS is not indicated, a nurse may provide a client with TB clearance documentation for work, school or volunteer screening.

Employees, Volunteers or Student settings include: Corrections, Shelters, Drop-In Centres, Addiction Treatment Centres, Licenced Child Care Facilities, and Public Service Employees. Each Health Authority determines which Public Service Employee groups require TB screening.

For work, school or volunteer TB screening includes a risk assessment and symptoms evaluation. Refer to Tables 1, 2 and 3.

**Table 7a: TB Screening for work, school or volunteers with NO TB testing or treatment history**

<table>
<tr><th rowspan="2">Client Scenario</th><th rowspan="2">Timeframe for TB Screening</th><th rowspan="2">TST *</th><th colspan="2">Plan if:</th></tr>
<tr><th>TST negative<br>No TB exposure ♦<br>No symptoms</th><th>TST positive<br>and/or<br>TB symptoms</th></tr>
<tr><td>Employee or Volunteer</td><td rowspan="2">• Upon hire or pre-requisite for volunteering or program admission.<br>• At the discretion of the employer, organization or institution.</td><td rowspan="3">Yes, if appropriate§</td><td rowspan="3">Provide TB clearance and documentation to the client.</td><td rowspan="3">Refer to TBS<br>• CXR Ø required<br>• Sputum required if symptomatic</td></tr>
<tr><td>Student</td></tr>
<tr><td>Health Care Worker † Ω</td><td>• Upon the first hire in BC.<br>• Repeat testing for workplace TB exposures.</td></tr>
<tr><td>Health Care Volunteer †</td><td colspan="4">• TST is not required.<br>• TB symptom checks for volunteering with vulnerable groups are recommended (e.g., neonatal intensive care or dialysis units).<br>• Refer to Symptomatic TB Screening for volunteers with symptoms.</td></tr>
</table>

* A two-step TST at baseline is recommended if no prior TST or previous TB treatment.
♦ If recent exposure was less than 8 weeks ago refer to Table 11 for further TB screening guidance.
† Recommendations based on review of local epidemiology in BC health care facilities (19).
Ω Defined as all workers in a healthcare institution.
§ See TST section to determine if a TST is contraindicated or inappropriate.
Ø Refer to CXR section and Table 6 for use of pre-existing CXRs and CXRs during pregnancy.

**Table 7b: TB Screening for work, school or volunteers with historical TB testing or treatment**

Clients with prior TB infection or treatment, require a risk and symptom assessment to rule out TB disease and provide TB clearance. Those with untreated TB infection and ongoing risk factors are at higher risk of progression to TB disease. TB screening also provides an opportunity to discuss TPT completion with clients.

<table>
<tr><th colspan="3">Client Scenario*</th><th colspan="2">Current TB assessment and screening plan♦</th></tr>
<tr><td colspan="3">TB HISTORY: Negative test results</td><td colspan="2">Plan: Screen per Table 7a (above)</td></tr>
<tr><th colspan="3">Client Scenario*</th><th colspan="2">Current TB assessment and screening plan ♦</th></tr>
<tr><td colspan="3">TB HISTORY: Prior TPT (or TPT not indicated)</td><td rowspan="4">If:<br>• NO new exposure<br>and<br>• NO TB symptoms<br><br>Plan: No TST indicated. Provide TB clearance.</td><td rowspan="4">If:<br>• NEW exposure†<br>or<br>• TB symptoms<br><br>Plan: Refer to TBS. Include CXR<sup>Ω</sup> and if symptomatic, collect sputum.</td></tr>
<tr><th>TST</th><th>IGRA</th><th>Treatment</th></tr>
<tr><td>Positive</td><td>Non-Reactive</td><td>No</td></tr>
<tr><td>Positive</td><td>Not done</td><td>Yes</td></tr>
<tr><td>Positive or Negative or Contraindicated or not done</td><td>Reactive</td><td>Yes</td></tr>
<tr><th colspan="3">Client Scenario*</th><th colspan="2">Current TB assessment and screening plan ♦</th></tr>
<tr><td colspan="3">TB HISTORY: Untreated TB infection</td><td rowspan="3">If:<br>• NO new risk factors<br>and<br>• NO new exposure<br>and<br>• NO TB symptoms<br><br>Plan: No TST indicated. Provide TB clearance. This is an opportunity to discuss TPT completion.</td><td rowspan="3">If:<br>• NEW risk factors<br>or<br>• NEW exposure†<br>or<br>• TB symptoms<br><br>Plan: Refer to TBS. Include CXR<sup>Ω</sup> and if symptomatic, collect sputum.</td></tr>
<tr><th>TST</th><th>IGRA</th><th>Treatment</th></tr>
<tr><td>Positive and/or Contraindicated</td><td>Not done</td><td>No</td></tr>
<tr><td>Positive</td><td>Reactive</td><td>No</td><td></td><td></td></tr>
</table>

* For timeframes for TB screening refer to Table 7a.
♦ Refer to Tables 1, 2 and 3 for a list of TB risk factors for exposure and progression to TB disease and symptoms of TB disease.
† If recent exposure was less than 8 weeks ago refer to Table 11 for further TB screening guidance.
Ω Refer to CXR section and Table 6 for use of pre-existing CXRs and CXRs during pregnancy.

## Clients with Medical Risk Factors

For people with medical risk factors, TB screening includes a risk assessment and symptoms evaluation. Refer to Tables 1, 2 and 3.

**Table 8: TB Screening for Clients with Medical Risk Factors**

<table>
<tr><th colspan="6">SCREENING PATHWAY – No history of TB testing or treatment</th></tr>
<tr><th>Clients</th><th>Timeframe to initiate TB screening</th><th>TST</th><th>IGRA</th><th>CXR*</th><th>Refer to TBS</th></tr>
<tr><td>BC Renal Agency clients♦</td><td>Within 1 month of their 1st chronic dialysis start or<br>upon referral for a Living Donor Transplant.</td><td>No</td><td>Yes</td><td>Yes</td><td>Yes</td></tr>
<tr><td>Transplant recipient†</td><td>Prior to receiving transplant.</td><td>If under 2 years old</td><td>If 2 years or older</td><td>Yes</td><td rowspan="2">Yes</td></tr>
<tr><td>Living solid organ transplant donor †</td><td>Prior to donating organ. Proceed with TB testing if TB exposure identified.</td><td>No</td><td>Yes</td><td>Yes†</td></tr>
<tr><td>Newly diagnosed HIV positive (see Table 10)</td><td>At baseline.</td><td rowspan="4">Yes</td><td rowspan="4">TBS may recommend as a sequential test.<br><br>See Physician IGRA Guidelines.</td><td colspan="2" rowspan="4">Yes</td></tr>
<tr><td>Pre-biologics clientΩ</td><td rowspan="2">Prior to starting treatment, if possible.<br><br>Only repeat if new TB risk factors NOT new biologic or change in regimen.</td></tr>
<tr><td>Immunosuppressant drugs§</td></tr>
<tr><td>Other immune compromising conditions Ø</td><td>At baseline</td></tr>
<tr><th colspan="6">SCREENING PATHWAY – History of TB testing or treatment</th></tr>
<tr><td colspan="6">Refer clients with prior TB disease or documented TB infection with or without treatment to TBS and include pertinent clinical information (see TB Screening Form) and a recent CXR*. TBS will review the information and effectiveness of treatment (if applicable) and arrange follow-up or clearance as needed.</td></tr>
</table>

* Refer to CXR section and Table 6 for use of pre-existing CXRs and CXRs during pregnancy.
♦ Refer to the BC Renal Agency Tuberculosis Screening and Follow-Up Guidelines for further details.
† Transplant specialists follow specific provincial workflows to assess for TB risk factors and recommend appropriate diagnostic tests and referral to TBS, as needed. Transplant Specialists often order a CXR. Examples: acute leukemia, pre-bone marrow transplants, solid organ transplant donors and recipients.
Ω Taking (or about to begin) treatment with immune suppressing therapies such as TNF-alpha inhibitors or disease-modifying anti-rheumatic drugs. Refer to Table 4.
§ Taking (or about to begin) chemotherapy or steroids (equivalent of 15 mg or more per day for 1 month or longer). Refer to Table 4.
Ø Determined by clinical judgement or TBS consultation. Diabetes is a known risk factor for developing TB disease, but the condition on its own is not a reason to refer to TBS if the TST is negative.

## Clients Entering Congregate Settings

### Practice Statement

The most important step of TB prevention in congregate settings is completing a risk assessment and symptom evaluation to rule out TB disease before admission into a facility. TST testing should not delay or otherwise impact admission. Refer to Tables 1, 2 and 3.

After admission into the facility, offer further TB screening as part of client-centred care. Clients with untreated TB infection and ongoing risk factors are at higher risk of progression to TB disease. While at the facility, there is an opportunity to discuss completion of TPT as part of TB care.

**Table 9: TB Screening for Clients Entering Congregate Settings**

<table>
<tr><th colspan="2">Clients</th><th>Rule out TB Disease</th><th>TST* for TB Infection</th><th>CXR♦ Indications</th><th>Refer to TBS</th></tr>
<tr><td colspan="2">Entering an acute, short-term† in-patient withdrawal management program</td><td rowspan="7">Yes, complete a risk assessment Ω and symptom evaluation before admission</td><td>No</td><td>If symptomatic</td><td rowspan="7">If CXR done</td></tr>
<tr><td colspan="2">Entering a long-term drug and alcohol treatment services program</td><td>Yes, AFTER admission</td><td rowspan="2">If new TST positive and/or symptomatic</td></tr>
<tr><td rowspan="2">Entering an adult care facility (e.g.) Long Term Care</td><td>Under 60 years of age</td><td>Yes§</td></tr>
<tr><td>60 years of age and up</td><td>No</td><td>If symptomatic</td></tr>
<tr><td rowspan="2">Living in a Correctional Facility</td><td>Short-term sentence<br>(under 2 years)</td><td>Yes, in select populations (See PHSA Policy)</td><td rowspan="2">If new TST positive and/or symptomatic</td></tr>
<tr><td>Long-term sentence<br>(2 years or longer)</td><td>Yes<br>At admission</td></tr>
</table>

* Previous TST results valid if within past 6 months and no new TB risk factors, signs or symptoms.
♦ Refer to CXR section and Table 6 for use of pre-existing CXRs and CXRs during pregnancy.
†Typical stays are approximately 1 week.
Ω For clients with prior untreated TB infection, counsel the client on their individual TB risk and the importance of seeing a Health care provider if TB symptoms develop.
§ May be offered within 1 month of admission if asymptomatic. If a client's TB screening is completed, but there is a delay in admission to facility, there is no need to repeat TB screening unless new TB risk identified.

## People Living with HIV

All people living with HIV (PLWH) should be screened for TB at the time of their HIV diagnosis. For PLWH, a TB risk assessment, TB signs and symptoms evaluation and a review of historic and new TST, IGRA, and/or CXR results is required.

- **IGRA is currently recommended as an adjunct test** to TST and may be valuable in the following situations:
  PLWH with CD4 count less than 200 cells/mm3 who are TST-negative.
  PLWH with a history of contact with infectious TB disease and who are TST-negative (20).
- **Routine annual TB screening is not recommended**.
  In the future, TB screening should be promptly initiated if TB risk factors are identified for a PLWH such as TB symptoms, a TB exposure, or travel to a region with moderate to high TB incidence (20).
- **A PLWH who has untreated TB infection** should be aware of the signs and symptoms of TB and to seek medical attention if symptoms occur. The importance of TPT should be revisited as part of their overall care plan.

**Table 10: TB Screening for People Living with HIV**

<table>
<tr><th>Reason for Screening</th><th>Timeframe to initiate screening</th><th>Test for TB Infection *</th><th>Test for TB Disease</th><th>Refer to TBS</th></tr>
<tr><td>Person newly diagnosed with HIV</td><td>At time of diagnosis</td><td rowspan="3">TST and if indicated, IGRA♦</td><td>Order CXR †<br><br>If TST or IGRA positive or CXR abnormal, sputum for AFB x 3</td><td rowspan="3">Yes</td></tr>
<tr><td>PLWH and TB exposure Ω §</td><td rowspan="2">High priority</td><td>Order CXR † and sputum for AFB x 3</td></tr>
<tr><td>PLWH and TB symptoms</td><td>Order CXR † and stat sputum for AFB</td></tr>
<tr><td colspan="5">SCREENING PATHWAY – History of TB testing or treatment</td></tr>
<tr><td colspan="5">Refer clients with prior TB disease or documented TB infection with or without treatment to TBS and include pertinent clinical information (see TB Screening Form), a recent CXR and collect sputum. TBS will review the information and effectiveness of treatment (if applicable) and provide recommendations.</td></tr>
</table>

* Among PLWH not receiving antiretroviral therapy (ART) with a CD4 less than 200 cells/mm3 and with a negative TST or IGRA, re-testing after ART has been established and CD4 cell counts increase to greater than 200 cells/mm3 is recommended if the person's risk for TB infection is elevated (e.g. known previous contact) (13).
♦ T-SPOT is preferred if CD4 less than 200 cells/mm$^3$ (20).
† Order PA and lateral views.
Ω Exposure can be defined as recent contact to anyone with infectious TB disease or travel to a moderate or high TB incidence country.
§ PLWH who are identified as a close contact to someone with infectious TB should be assessed for TPT, regardless of their TB screening result. This should be in discussion with their local HIV provider (20).

## Symptomatic TB Screening

### Practice Statement

Symptomatic TB Screening requires appropriate and urgent referrals to TBS.

For example:

- a person with known TB exposure risk and persistent respiratory symptoms despite multiple courses of **antibiotic treatment, exhibits a high degree of clinical evidence for TB disease.**
- a person being evaluated for non-respiratory TB is at increased risk for respiratory TB and prompt TB evaluation is necessary.
- a person with no TB exposure risk and non-specific TB symptoms (e.g. fatigue) is NOT considered having a high degree of clinical evidence for TB disease.

Refer to **Figure 1: Management of clients with a high degree of clinical evidence for TB disease.**

**Figure 1: Management of clients with a high degree of clinical evidence for TB disease**

Signs or symptoms of TB disease (see Table 3) AND
Risk factors for the exposure to & development of TB disease (see Table 1 & Table 2)

↓

- Complete TB risk assessment and documentation.
- Consult TBS Nurse Consultants (604-707-5678) or your local CD unit to confirm a clinical care plan and to discuss infection control and prevention recommendations.

↓

| Clinical care plan* | Airborne Precautions |
|---|---|
| **Order diagnostic tests**<br><br>**Sputum: 3 specimens for AFB smear and culture, at least 1 hour apart**<br>• If possible, collect 1 x sputum stat<br>• If unable to spontaneously produce sputum, consult TBS. Gastric lavage is typically recommended in young children, and induced sputum for adults.<br>• See Sputum collection section<br><br>**CXR: posterior-anterior (PA) views**<br>• Order both PA and lateral views if less than 5 years old or PLWH<br>• Consult TBS if client is pregnant<br>• Offer an HIV test<br><br>**Note:** Cases of non-respiratory TB disease should be assessed for respiratory TB disease (3 sputum samples and CXR). | **For clients in a facility:**<br>Consult Infection Control Practitioner (ICP) team and attending physician for further direction.<br><br>**For clients in community:**<br>Request the client to self-isolate until TBS or your local CD unit has been consulted. Ensure communication with the client regarding their isolation plan. This includes:<br>• Masking (surgical mask)<br>• Home isolation<br>• If there are essential medical appointments, alert other health care providers of the recommended precautions<br><br>Refer to Appendix B for more on Infection Prevention and Control recommendations. Section 1.1 outlines indications for airborne precautions. |

*The use of TST or IGRA alone for the diagnosis of TB disease (as a rule-in or rule-out test for TB) in adults is NOT recommended. To support the diagnosis of TB disease in children, the TST or IGRA may be used, in addition to other testing. See the Canadian TB Standards, Chapter 9, Pediatric TB (21).

## Contacts to TB Disease in the Past Two Years

### Practice Statement

Clients exposed to a person with infectious TB disease in the past two years are at risk of TB infection (see Table 1). While any exposure to infectious TB brings risk, in practice, almost all transmission occurs with close, prolonged or repeated contact over days or months (12).

Amongst contacts, risk for progression to severe forms of TB disease is highest among children (less than 5 years) and PLWH (see Table 2) (3). Prompt evaluation of high-risk priority contacts is key. Low priority contacts only need a single TST 8 weeks after the last date of contact.

Refer to Section 7 and Section 8 for more information on contact tracing principles and clinical follow-up of contacts.

**Consultation Recommendations**

**Consult with the TBS Nurse Consultants:**

- For any contacts who are symptomatic (see Table 3) or who reside in other Regional Health Authorities.
- If there is ongoing exposure and concern that the source case has not been effectively self-isolating. A discussion on extending the infectious period and delaying the 8-week post-exposure assessment would be appropriate.

Consult with the First Nations Health Authority for any contacts residing in First Nations communities.

For contacts, a TB risk assessment includes history, risk factors and a signs and symptom evaluation. Refer to Tables 1, 2 and 3.

**Table 11: TB Screening for contacts to infectious TB disease within the past 2 years**

<table>
<tr><th colspan="2">Contacts</th><th>Consult with TBS at time of screening to discuss WPP*</th><th>Recommend initial TST<br>If negative, 2nd TST at least 8 weeks after the last date of exposure♦ (unless contraindicated)</th><th>CXR<br>(see Table 8)</th><th>Refer to TBS</th></tr>
<tr><td rowspan="2">Children †</td><td>less than 6 months</td><td rowspan="2">Yes<br><br>Refer to primary HCP if outside the Lower mainland</td><td>In consultation with TBS</td><td rowspan="2">Yes</td><td rowspan="2">Yes,<br>obtain weight</td></tr>
<tr><td>less than 5 years and older than 6 months</td><td>Yes</td></tr>
<tr><td colspan="2">People living with HIV (PLWH) not taking ARTΩ</td><td>Yes</td><td rowspan="3">Yes</td><td>If new TST positive or WPP candidate</td><td rowspan="4">Yes, if TST positive and/or CXR done.</td></tr>
<tr><td colspan="2">Other immune compromised</td><td>No</td><td rowspan="2">If new TST positive</td></tr>
<tr><td colspan="2">Immune competent</td><td>No</td></tr>
<tr><td colspan="2">Transient/ marginalized populations</td><td>No</td><td colspan="2">Yes, if feasible. If contact is unable to return for TST read, offer sputum testing and CXR to promote client-centred care.<br><br>If accessible, consider IGRA draw at 8 weeks, but the priority is always ruling out TB disease.</td></tr>
<tr><td colspan="6">SCREENING PATHWAY – History of TB testing or treatment</td></tr>
<tr><td colspan="6">For contacts with prior TB disease or documented TB infection with or without treatment conduct an initial assessment and if asymptomatic and not a candidate for WPP, advise CXR at least 8 weeks after the last date of contact and refer to TBS.</td></tr>
</table>

* For more information about WPP during contact tracing see Section 8.
♦ Low priority contacts only need a single TST 8 weeks after the last date of contact (see Section 7).
† Children less than 5 years are always classified as high-risk priority contact regardless of the nature of the contact (i.e. household, close, non-household, casual). A CXR should always be included in their initial assessment, regardless of the TST result and/or the timing of the initial assessment (i.e. if the initial assessment is more than 8 weeks since exposure, both a TST and CXR are required).
Ω Collect sputum for AFB x 3 for PLWH (see Table 10).

## Indigenous Peoples

Past and present constructs of colonialism continue to impact the health and well-being of Indigenous people and contribute to increased rates of TB Infection and TB disease within First Nations communities. In 2022, the BCCNM released their Indigenous cultural safety, cultural humility, and anti-racism practice standard. The purpose of this standard is to set clear expectations for how BCCNM registrants are to provide culturally safe and anti-racist care for Indigenous clients. The BCCNM states "Nurses must continually seek to improve their ability to provide culturally safe care for Indigenous clients."

Chapter 12 of the Canadian TB Standards (6) provides "An introductory guide to TB care to improve cultural competence for health care workers and public health professionals serving Indigenous Peoples of Canada." The Standards call on health care workers providing services on Indigenous lands and/or working with Indigenous Peoples to educate themselves and acknowledge the role of on-going colonization, personal and systemic racism, and privilege as they relate to health equity in TB care delivery, and take steps to prevent their harmful effects.

In BC, people who self-identify as Indigenous are eligible for annual routine screening at no cost regardless of place of residence (see Screening Indications). Additionally, as a part of ongoing surveillance and preventative measures, the First Nations Health Authority (FNHA) recommends annual and enhanced screening guidelines for Indigenous people and persons living and working within First Nations communities.

For further information on these screening guidelines, programming and/or consultation, please refer to FNHA TB Services or call 1-844-364-2232 or email FNHATB@fnha.ca.

## Immigration Medical Surveillance Screening

Medical surveillance is a required medical check-up for a person who has newly arrived in Canada to check that their inactive TB has not progressed to TB disease. Immigration, Refugees and Citizenship Canada (IRCC) define inactive TB as an assessment that a person may have had TB in the past, or have TB infection, or have been exposed to TB bacteria. It is usually based on IGRA or CXR results and/or history of TB or treatment information reviewed during the immigration medical examination (IME). Medical surveillance ensures that proper investigation and treatment can be provided, which in turn helps protect the health and safety of people in Canada (22). Inactive TB is the only medical condition for which medical surveillance is currently required. See Section 4(a) Immigration Medical Surveillance Program for more details.

### Practice Statement

In the context of immigration screening, a key component of the TB risk assessment is prioritizing a detailed history of TB diagnosis, treatment and/or known close exposure. This information helps TBS determine if prior treatment was satisfactory or if the client remains at risk of progression to TB disease. BCG vaccination or travel history are less important in the context of immigration screening.

For immigration medical surveillance screening, a TB risk assessment should include a TB diagnosis and treatment history, risk factors and a signs and symptom evaluation. Refer to Tables 1, 2 and 3.

**Table 12: Immigration Medical Surveillance Screening**

| Medical Surveillance Visit | Risk screen and symptom evaluation to rule out TB disease | Test for TB Infection | Test for TB Disease | Refer to TBS |
|---|---|---|---|---|
| **Initial visit** | Yes, include detailed diagnosis & treatment history, if relevant<br><br>If symptomatic* follow Symptomatic TB Screening guidance | No | If asymptomatic♦:<br>• CXR once medical insurance coverage† active<br>• Order 3 sputum for AFBΩ<br><br>If symptomatic* follow **Symptomatic TB Screening** guidance | Yes |
| **Follow-up Visit** | Review sputum smear and culture results, CXR reports, and the TBS physician recommendations. Follow-up recommendations may include testing or treatment of TB infection. | | | |

* TBS will cover the cost of testing for TB disease if the client is symptomatic and does not have MSP.
♦ CXR and sputum results completed in BC within the last 9 months are valid for the initial visit, as long as the client is asymptomatic. Please indicate on the referral that recent results exist in BC.
† Refugees have immediate medical coverage through the Interim Federal Health Program for refugees. MSP coverage is active 90 days after arrival in BC. Other clients may have medical coverage through a private insurance provider, as they are not eligible for MSP.
Ω Sputum samples must be submitted to Public Health Units or Outpatient Hospital Labs using a BCCDC Public Health Laboratory Mycobacteriology/TB Requisition form.

## Travellers

See appropriate sections of this DST for the management of travellers who are immune compromised, starting immune suppressing therapy, symptomatic, a PLWH, or who self-identify as a contact to a person with TB disease outside of Canada.

For travellers, a TB risk assessment includes reviewing TB history, risk factors and symptoms, and if appropriate, a physical examination, for the following travellers to moderate or high TB incidence countries:

- Any travel with very high-risk contact, particularly direct patient contact in a hospital or indoor setting, and potentially work in prisons, homeless shelters, refugee camps or under-served inner-city neighbourhoods.
- Three months or more of travel to a country with a TB incidence of 400 or more per 100,000 population
- Six months or more of travel to a country with a TB incidence of 200-399 per 100,000 population
- Twelve months or more of travel to a country with a TB incidence of 100-199 per 100,000 population

Use the WHO TB country, regional and global profiles for TB to determine a country's TB incidence.

**Recommendation:** Complete a single post-trip TB screening assessment at least 8 weeks after returning to Canada (7).

**Table 13: TB screening for Travellers**

<table>
<tr><th>Clients</th><th>Timeframe to initiate Screening</th><th>TST</th><th>CXR*</th><th>Refer to TBS</th></tr>
<tr><td>Under 6 months of age</td><td rowspan="4">Post-trip assessment at least 8 weeks after returning to Canada</td><td>If indicated, consult TBS for interpretation of results</td><td rowspan="2">If TST positive and/or under 5 years of age and high risk for TB infection (e.g. WPP)</td><td>Yes, if TST completed</td></tr>
<tr><td>6 months up to 5 years of age</td><td>Yes♦</td><td rowspan="3">Yes, if TST positive and/or CXR</td></tr>
<tr><td>5 to 16 years of age</td><td rowspan="2">Yes</td><td rowspan="2">If TST positive and/or symptomatic</td></tr>
<tr><td>16 years of age and older</td></tr>
<tr><td colspan="5">SCREENING PATHWAY – History of TB testing or treatment</td></tr>
<tr><td colspan="5">For clients who have prior TB disease or documented TB infection with or without treatment, recommend CXR at 8 weeks post-trip assessment if they are a close contact to a person with infectious TB disease, especially if at high risk for progression to TB disease.</td></tr>
</table>

* Refer to CXR section and Table 6 for use of pre-existing CXRs and CXRs during pregnancy.
♦ Consult TBS for interpretation of TST results for children with history of BCG vaccination.

# CLIENT AND FAMILY EDUCATION

## Practice Statement

Client and family education is an important part of TB screening and nursing care. Your organization may have TB specific resources, but at a minimum, a review of the following key topics is recommended.

**Table 14: Client and Family Education**

| **Pre-Test Discussion** HealthlinkBC Health file 51d, TB Skin Test | |
|---|---|
| • The purpose of the screening and diagnostic tests and why they are being recommended<br>• The difference between TB infection and TB disease<br>• Window periods and timing for repeat testing if necessary<br>• How the test is done<br>• When to expect results (ensure up to date contact information)<br>• Significance of TST and IGRA results | |
| **Post-Test Discussion** HealthlinkBC Health file 51a, Tuberculosis | |
| **Greater than 10mm** | **Less than 10mm** |
| **If TST is greater than 10mm, advise the client:**<br>• not to have this test done again<br>• of the need to do a CXR to rule out TB disease<br>• that this TST result does not exclude the client from school, work, treatment centres or volunteering<br>• to keep their TST result in a safe place for future reference | **If referral to TBS required:**<br>Inform the client that their TST result and clinical information will be reviewed by TBS to determine next steps.<br><br>**If providing clearance:**<br>Inform the client that their TST result indicates no evidence of TB infection. Advise the client to keep their TST result in a safe place for future reference. |
| **Follow-up Discussion of TBS Recommendations** * | |
| **Topics may include, but are not limited to:**<br>• TBS assessment and recommendation (e.g., TPT offer)<br>• Risk factors that could increase the chances of developing TB disease<br>• Signs and symptoms of TB disease<br>• When to contact a health care provider<br>• If a client declines TPT, remind them they can contact their health care provider anytime to talk about TPT again.<br>• Reinforce that changes in their health (e.g., new medical conditions, medications that lower the immune system, or TB exposures) may require TB screening in the future. | |

* Some clients receive all of their follow-up at a BCCDC TB clinic and therefore the local health authority does not need to review TBS recommendations with the client.

**Client Education Resources**

- Translated Resources on BCCDC website includes client handouts on TB, TB Infection (previously LTBI), Active TB Disease, TB tests and TB medication
- Video: "How to get a good sputum sample for your tuberculosis test" video in English. Additional languages on the BCCDC's YouTube channel
- HealthlinkBC Healthfiles: TB | TB Skin Test | Sputum Testing for TB | Home Isolation
- FNHA TB Services Educational Resources

# HEALTH CARE PROFESSIONAL RESOURCES

**Related Guidelines & Practice Standards**

- BCCDC TB Manual
- BCCNM Indigenous Cultural Safety, Cultural Humility, and Anti-Racism practice standard
- BC Renal Hemodialysis Guideline: Tuberculosis Screening & Follow-Up
- Canadian TB Standards, 8th edition
- FNHA TB Services Community Programming Guide
- HIV Testing Guidelines for the Province of British Columbia
- Nurse IGRA Guidelines
- Physician IGRA Guidelines
- Helping Families, Helping Systems: A Trauma-Informed Practice Guide for Working with Children, Youth and Families

**Related Forms & Practice Tools**

- BCCDC Mycobacteriology/tuberculosis requisition
- BCCDC TB Screening Form & Documentation Guide
- BCCDC TB chest x-ray only requisition
- BCCDC Quick Reference Guide – TB skin testing
- PERISKOPE TB
- The Online TST/IGRA Interpreter, Version 3.0

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