

**THIS UPDATE IS PROVIDED
IN RECOGNITION OF WORLD
TUBERCULOSIS DAY
HELD ANNUALLY ON MARCH 24**

Tuberculosis (TB) is still present in Canada with a prevalence rate of 4.8 new cases per 100,000 (a total of 1,737) in 2016. Ontario had the most TB cases of any province; 635 new cases (a rate of 4.5 per 100,000).

THUNDER BAY'S TB OUTBREAK UPDATE

Since the beginning of March 2018, the outbreak investigation identified 11 cases of active tuberculosis in the community, and many cases of latent tuberculosis, with most cases occurring in individuals who lacked adequate housing.

Throughout the year, the TBDHU worked with community partners to support individuals through the lengthy treatment for tuberculosis and to offer screening and treatment for tuberculosis to individuals who were under-housed or experiencing homelessness and may have been exposed to individuals with active TB.

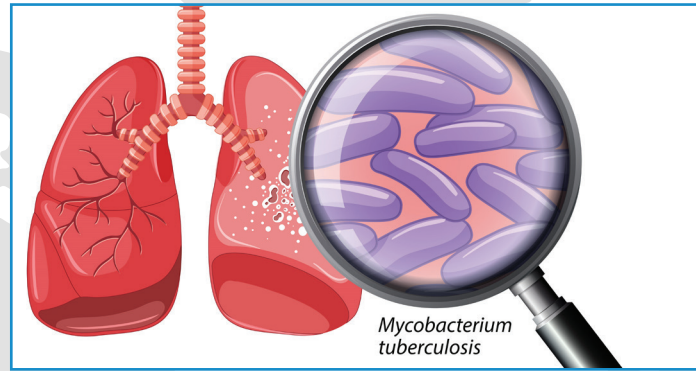
An enhanced TB program was implemented, and, through the work of the Health Unit Infectious Diseases and Street Nursing teams, the TBDHU will continue to identify and screen contacts of active cases and offer treatment and support. Focus now has shifted to identifying those with latent tuberculosis who are at risk of developing active TB in the future. Unfortunately, future cases in this population are likely.

In response to this outbreak, the TBDHU would appreciate your assistance with the following:

- Maintaining a high index of suspicion for TB in patients who are street-involved, homeless, or under-housed.
- Be aware of extrapulmonary presentations of TB, for example, TB lymphadenitis, osteoarticular TB, meningitis, and pericarditis.



- Employ infection prevention and control procedures when examining patients who may have active TB. Active respiratory TB, including pulmonary and laryngeal TB, requires airborne precautions, including fit-tested N95 respirators for healthcare providers.



KEEP TB ON THE DIFFERENTIAL!

With respect to the current outbreak, just over 50% of contacts did not receive a TST or did not have their 8 week break-in-contact TST read. Some declined a TST and some were lost to follow-up, leaving a large pool of contacts for which the TBDHU was unable to establish infection status or offer preventive treatment. The highest risk of progression to TB disease is in the first 2 years after an initial infection.

Active TB symptoms include:

- new persistent cough; > 2 weeks
- hemoptysis
- chest pain, dyspnea
- Fatigue, lethargy, weakness
- weight loss or a lack of appetite
- chills, fever
- night sweats
- lymphadenopathy, for extrapulmonary TB

A sputum acid-fast bacilli (AFB) smear and culture (3 specimens collected at least 1 hour apart) and chest x-ray are also needed for diagnosis.

READING A TB SKIN TEST (TST)

The skin test must be read 48-72 hours after administration. If this "window" is missed, you will need to re-administer the TST.

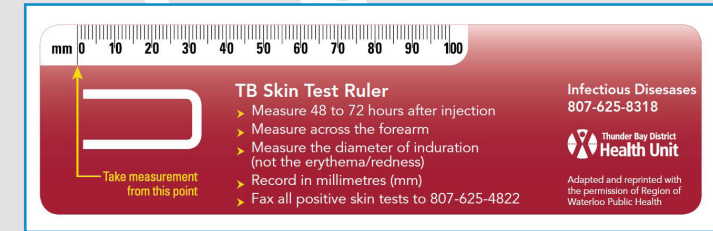
1. **Inspect:** the skin test under good lighting. Note the induration (hard, raised formation)
2. **Palpate:** Use your fingertips to determine if any induration is present
3. **Mark:** the edges of induration across the forearm with a pen held at a 45° angle

4. **Measure:** Using a ruler, measure the distance between pen marks. Measure induration NOT erythema (redness)
5. **Record the Induration:** Induration is measured in millimeters (mm). DO NOT record as positive or negative. No induration is record as 0 mm.

A web-based algorithm is available to assist with interpretation at <http://www.tstin3d.com/>

For more information refer to http://bit.ly/tbdhu_tst.

Reaction size	When the reaction is Positive
0-4mm	Generally negative. NOTE: Positive in children under 5 AND high risk of TB infection
5-9mm	HIV infection, contact with active TB within past 2 years, fibronodular disease on CXR, organ transplantation, Tumor Necrosis Factor alpha inhibitors and other immunosuppressive drugs, end-stage renal disease
≥10mm	All others



REPORTING A POSITIVE TST IS MANDATORY

Under Ontario's Health Protection and Promotion Act, (sec. 26; reporting carrier of disease) all cases of active & LTBI are reportable to the TBDHU. You can find our reporting forms at http://bit.ly/tbdhu_tstform.

ALL ABOUT IGRAs

IGRAs (Interferon Gamma Release Assays) is a type of blood test that measures T-cell release of interferon –gamma following stimulation by antigens specific to Mycobacterium Tuberculosis bacteria. Situations where IGRAs can be used:

- Persons from groups that historically have poor return rates for TST reading
- Persons who have received BCG vaccination after 1 year of age and/or have had BCG vaccination more than once
- Clarifying LTBI diagnosis in low risk reactors

Situations where IGRAs should NOT be used:

- Serial TB testing
- To monitor anti-TB drug treatment response

IGRA testing is now available Monday-Thursday at Life Labs on Oliver Road for \$95. No fasting period required and results take 7-10 business days.

NEXT STEPS CHECKLIST

- Chest x-ray & sputum AFB x3
- Report to TBDHU
- Symptom assessment
- Discuss prophylaxis



RIFAMPIN FOR LTBI

Traditionally, 9 months of Isoniazid with vitamin B6 is prescribed to prevent active tuberculosis in individuals with LTBI. However, this regimen has the disadvantage of poor adherence rates and potential hepatotoxic effects. A newer, shorter drug regimen of Rifampin for 4 months has shown to be equivalent to Isoniazid treatment. A study by Menzies et al. (2018) concluded that the efficacy of the 4 month Rifampin treatment was not inferior to that of Isoniazid. Additionally, the Rifampin regimen was found to have greater rates of completion with lower rates of adverse events, such as hepatotoxicity. Rifampin can stain bodily secretions (saliva, tears, urine, etc.) orange or red, and it is important to make patients aware of this harmless side effect.

DOSING GUIDELINES

- (From the Lung Association of Ontario):
- Isoniazid 5 mg per kg; max dose of 300 mg
 - Rifampin 10 mg per kg; max dose 600 mg

All residents of Ontario are entitled to free tuberculosis medications, and this medication is provided by the TBDHU.

Menzies, D., Adjobimey, M., Ruslami, R., Trajman, A., Sow, O., Kim, H., ... Benedetti, A. (2018). Four months of rifampin or nine months of isoniazid for latent tuberculosis in adults. *New England Journal of Medicine*, 379(5), 440-453.
The Lung Association of Ontario. (2015). *Tuberculosis: Information for health care providers* (5th ed). Toronto, ON.



MEDICAL SURVEILLANCE

Individuals 11 years of age and older who are applying to enter Canada under certain immigration visas or as refugees undergo a medical examination in their home country that includes screening for TB. Those who have been assessed as having pulmonary TB are referred for post-landing medical surveillance and are required to check in with the local public health unit where they intend to reside to undergo further clinical assessment. The TBDHU may follow these clients for a period of 2-5 years post-landing (if not treated for TB or LTBI).

In the past few years, there has been an increase in the reports of medical surveillance cases received by the TBDHU. Many of these immigrants come from countries with a high burden of TB disease.

We would like to remind clinicians to keep TB as a differential diagnosis when assessing clients who have recently immigrated to Canada.

TB FOR HCP RESOURCE

The 6th edition of "Tuberculosis for Health Care Providers" will be released by The Lung Association of Ontario in early April, 2019. Get your copy at <https://lungontario.ca/>.

QUESTIONS?

Contact TBDHU Infectious Diseases Program
(807) 625-8318 or
Toll Free at 1-888-294-6630

TUBERCULOSIS UPDATE 2019

THUNDER BAY & DISTRICT

