POLICY & PROCEDURE NUMBER: 4.16

DEPARTMENT: *Infection Control* **SUBJECT:** *Guidelines for Management of Tuberculosis*

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MANAGEMENT OF TUBERCULOSIS

In Canada, the overall rate and annual number of cases of tuberculosis have continued to decline. Certain population groups and geographic regions; foreign-born individuals and Aboriginal people are disproportionately affected. While the incidence of tuberculosis in Canada is low, exposure to people with unsuspected active respiratory disease followed by transmission of *M. tuberculosis* does occur in health care settings.

Tuberculosis (TB) is a disease caused by a bacterium, *Mycobacterium tuberculosis*. Residents with respiratory (pulmonary or laryngeal) TB can transmit infection to other residents and health care workers. The most important contributors to health care associated transmission of *M. tuberculosis* are residents with unrecognised, respiratory TB disease. For that reason, the most important part of a TB management program is rapid diagnosis, isolation and start of effective therapy for those residents.

TB is transmitted from person to person mainly through the inhalation of the bacteria. Aerosolization of infectious *M. tuberculosis* occurs when individuals with respiratory TB disease cough, sneeze, sing or speak. Cough inducing procedures as well as some laboratory procedures can also cause aerosolization. The risk of transmission increases with the following: smear positive, cavitary and laryngeal disease; amount and severity of cough; duration of exposure; proximity to case; poor ventilation and delays in diagnosis and/or effective treatment.

Transmission rarely occurs from persons with extrapulmonary TB because infectious particles cannot be aerosolized.

Most people are unaware that they have become infected with TB. They are not ill and have no symptoms of illness because their immune system prevents the development of TB disease. Approximately 10% of all individuals infected with *M. tuberculosis* progress to active TB disease sometime during their life. The risk of developing disease is greatest in the first two years after initial infection.

Each long-term care facility should have policies in place to help them identify and recognize persons with TB disease and prevent transmission to other residents and staff.

The TB program should include the following:

- TB screening for staff/volunteers
- TB screening for residents
- TB education
- Case referral to Public Health
- Contact follow-up
- Additional precautions for residents with TB

1. **TB Testing for Staff and Volunteers (See below** for definition of regular volunteer and additional volunteer requirements))**
   - **A person (staff member/volunteer) with unknown Tuberculosis Skin Test (TST):** Requires a 2-step TST. If both tests are negative, no further testing is required. If either test is positive, refer to "person with a positive TST". The results of the TST should be recorded in millimeters on the personnel file.
   - **A person with documented results of previous 2-step TST:** If both tests were negative and if done > six (6) months ago, require a 1-step TST– NOTE: if the result of this TST is positive, refer to "person with a positive TST". If done < six (6) months ago, no further testing is recommended. If any previous test was positive, refer to "person with a positive TST"
   - **Person with a positive TST**: Report person with positive TST to Public Health. A physical exam including symptom review (by their physician) and a chest x-ray are recommended to rule out active TB. Note: the chest x-ray can be from within the last three (3) months unless the person is symptomatic. Further skin testing is not recommended. The person should be informed of the signs and symptoms of active TB.
     - If the person with a positive TST has an abnormal chest x-ray or symptoms of respiratory TB disease, he/she should be referred to their physician. Three sputum samples, collected at least 1 hour apart should be collected; and, the person should not work until physician provides documentation that the person does not have active respiratory TB.
     - If the person with a positive TST has no symptoms: he/she can continue to work while physician completes assessment to rule out active respiratory TB.
   - **Persons with medical conditions that severely weaken the immune system** may have a negative TST even though they have TB infection or disease. Recommend further assessment by a specialist with expertise in tuberculosis (i.e. infectious disease physician or a respirologist).
   - **Requirements for contract workers and students:** The supplying agencies or schools are responsible for pre-placement TB assessment and follow-up. The homes are responsible for confirming that these arrangements are in place prior to accepting contract workers/students.
   - **Regular TB skin testing for employees and volunteers is not recommended**. **Annual chest x-rays are also not recommended in the assessment of people with positive tests.**

2. **TB Screening for Residents**
   - See "Tuberculosis Screening" and "Tuberculosis Skin Testing" Nursing policy and procedures.

3. **TB Education**
   - Education should be provided to staff, volunteers, residents and residents' families on employment/admission to the home and annually.
   - Education should include information on signs and symptoms of TB and management of individuals with infection or disease.

4. **Case Referral to Public Health**

   All staff directly involved with clients will:
   - Be aware of the signs and symptoms of TB;
   - Refer clients who are demonstrating signs of TB to the physician for diagnosis and treatment as soon as possible
   - Consult with Public Health regarding precautions, which should be implemented and follow-up for staff, volunteers and residents in the home.

5. **Additional Precautions for Residents With TB**
   - Residents diagnosed with pulmonary or laryngeal TB may present a risk to the residents, staff and volunteers in the facility. Consultation with Elgin Public Health should be undertaken to determine the best method for caring for the resident and minimizing the risk of transmission. Refer to "Tuberculosis Screening" Nursing Policy and Procedure
   - A single room in a well-ventilated area with the door closed, away from high risk residents, where the case can be maintained until they are transferred is the preferred location

6. **Contact Follow-up**
   - If a case of active TB occurs in the facility, contact follow-up will be coordinated with public health.
   - TST is no longer recommended as a primary assessment tool in the contact follow-up of elderly residents in long-term care, in whom it is less reliable and for many of whom the risks of LTBI treatment outweigh the benefit. The focus for these individuals should be on early detection of secondary cases.

- Staff and volunteers should be tested by their family physician or the facility and the result, in millimetres, communicated to the Infection Control Practitioner (ICP) in the facility.
- A single evaluation at least 8 weeks after the end of the exposure (with TST and symptom assessment) is recommended in most non-household contact settings. For high priority contacts, an initial TST plus another TST at 8 weeks post-exposure is recommended. Two-step TST is not recommended in the context of contact investigation.
- Individuals who convert from a negative to positive skin test should be referred to a respirologist or infectious disease specialist for follow-up and a report made to Public Health.
- In the context of contact investigation, a positive TST is 5 mm induration or greater on initial or repeat testing or an increase of at least 6 mm from a previous TST of 5-9 mm.

- TB skin testing is free for persons identified as a contact of a case of TB disease. Medication for treatment of TB infection and TB disease is free through Public Health.

**A regular volunteer may be defined as one who expects to work 150 or more hours during the coming year, meaning approximately a half day per week. Volunteers expecting to work less than 150 hours during the coming year should be tested if they are known to belong to an at-risk population group listed below:

- People with a history of active TB;
- Staff and residents of homeless shelters;
- The urban poor;
- Staff and inmates of correctional facilities and previously incarcerated people;
- Injection drug users;
- Aboriginal Canadians residing in communities with high TB rates;
- People infected with HIV;
- People born in Canada and other low TB incidence countries prior to 1966;
- People born or previously residing in countries with a high TB incidence in Asia, Eastern Europe, Africa and Latin America;
- People with high risk factors (listed in Canadian TB Standards, Chapter 6, Table 1);
- HCWs serving at-risk groups.

- N.B. If volunteers have a history of active TB, or a history of a chest x-ray suggesting possible past TB, or have symptoms consistent with active TB (fever, cough for more than 2 weeks with or without fever, unexplained weight loss, hemoptysis, loss of appetite and night sweats), they should be referred for full medical evaluation rather than simply a TST".

Reference: Canadian Tuberculosis Standards, 7th ed., 2014