

	<b>POLICIES &amp; PROCEDURES</b> Number: <b>40-175</b> Title: <b>Tuberculosis (TB) Management Program</b>
<b>Authorization:</b> <input checked="" type="checkbox"/> SHR Infection Control Committee <input type="checkbox"/> Facility Board of Directors	Source: <b>Infection Prevention &amp; Control</b> Date Initiated: April, 2007 Date Reaffirmed: Date Revised: Scope: SHR Agencies & Affiliates

### **Introduction**

Mycobacterium tuberculosis (TB) continues to be seen in Canada and hospitals play an important role in the primary care of patients with TB. A TB management program ensures both optimal care for the patient and effective protection for other patients and healthcare workers.

### **Definitions**

Airborne infection isolation	Isolation used for patients infected with organisms spread through airborne droplet nuclei. The isolation area receives substantial air changes per hour (12 for construction completed since 2001 and at least 6 for construction before 2001) and is under negative pressure (i.e. the direction of the air flow is from the outside adjacent space into the room). The air in the room is preferably exhausted to the outside, but can be recirculated if the return air is filtered through a high efficiency particulate respirator (HEPA) filter.
Air change rate	Ratio of the airflow to the space volume per unit time, usually expressed as the number of air changes per hour.
Contact	A person who is exposed to TB by sharing air space with an infectious TB patient.
Conversion	Tuberculin skin test (TST) conversion is a change in a test result; an increase of >10mm in induration during a maximum of 2 years.
Directly observed therapy	Adherence-enhancing strategy in which a healthcare worker or other trained person watches a TB patient swallow each dose of medication. DOT is the standard of care for all TB patients in Saskatchewan.

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Extrapulmonary TB	TB disease in any part of the body other than the lungs (i.e. kidney, spine, lymph node). The presence of extrapulmonary TB does not exclude pulmonary TB disease. Extrapulmonary disease is not considered infectious unless nuclei from the site are being aerosolized.
Fit test	The use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on a person.
Infectious (contagious) TB	TB disease which can be transmitted from one person to another. Patients with smear positive pulmonary TB disperse droplet nuclei in the air during coughing, sneezing, singing or when undergoing aerosol generating procedures such as bronchoscopy.
Infectious period	The period during which a person with TB might have transmitted TB to others. For patients with AFB smear positive results, the infectious period begins 3 months before collection date of the first positive smear results or the symptom onset date, whichever is earlier, and ends when the patient is placed in airborne infection isolation or the date of collection of consistently negative smear results.
Suspect...TB	An illness marked by symptoms, laboratory tests, or radiographic findings consistent with or indicative of TB.
Tuberculin skin test	A diagnostic aid for finding TB infection. A small dose of tuberculin is injected intradermally by the Mantoux method, and the area is examined for induration by palpation 48-72 hours after the injection.

### **Policy**

Saskatoon Health Region will have a tuberculosis management program which delineates administrative, environmental and respiratory protection controls to prevent transmission of TB within its facilities. The program will be overseen by the regional Infection Control Committee.

### **Purpose**

1. To ensure prompt detection, airborne precautions and treatment of persons who have suspected or confirmed TB disease or prompt referral for settings in which persons with TB disease are not expected to be encountered.
2. To apply current Canadian TB control recommendations to processes and procedures in SHR.

## **Procedures**

### **1. Administrative Control Procedures**

#### Isolation/Isolation Rooms

Airborne infection isolation is instituted for all patients with suspected or confirmed infectious TB and continues until the person is determined not to have TB, the infectious period is over or until the patient is ready for discharge from hospital. This may involve transfer of patients to/from other units or facilities during the period of investigation to rule out suspected TB. Patients will be moved into isolation as soon as possible. Children with pulmonary TB are not usually as infectious as adults however isolation of children with extensive pulmonary or laryngeal involvement, cavitary disease or positive smears from sputum or gastric washing is prudent.

Airborne infection isolation rooms are preferentially used for patients requiring airborne isolation when the room is occupied by any patient not on airborne isolation.

A list of airborne isolation rooms within the Region for use when home isolation is not appropriate is maintained by the Infection Prevention & Control program. The list will be available in the Infection Prevention and Control Manual policy "Airborne Precautions".

#### Nursing Care

Policies pertaining to Nursing care and management of infectious TB patients as it relates to infection control are found in Infection Prevention and Control Manual policies Tuberculosis (TB) and Airborne Precautions. Policies are reviewed and updated whenever new Canadian TB related guidelines are published.

Patient/resident tuberculin skin testing is carried out in accordance with Nursing policy "Tuberculin Skin Testing (Mantoux)".

Long term care facility resident screening for TB is conducted on admission and according to the Tuberculosis Control manual of the Saskatchewan Tuberculosis Program.

#### Investigations/Specimens

Postpone non urgent procedures that might put healthcare workers at risk for possible exposure to TB until the patient is determined not to have TB disease or is non-infectious.

Urgent surgery on suspected or confirmed infectious TB patients is performed following Surgical Services Policy "Airborne Precautions in Surgical Suite".

Laboratory Services manual, Microbiology section, "TB/AFB Collections" outlines procedures which apply to collection and transportation of specimens.

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Sputum induction to procure a specimen for AFB testing from patients suspected or confirmed to have TB is done in a negative pressure setting. The TB clinic may be able to assist.

Bronchoscopy is not the primary diagnostic method for pulmonary TB. Bronchoscopy on a patient suspected or confirmed to have pulmonary TB is done in a negative pressure suite (RUH Rm 5747) or in an airborne infection isolation room. Children have bronchoscopy performed in an airborne infection isolation room in Pediatric Intensive Care Unit.

Autopsy on a person with known or suspected infectious TB is performed in the negative pressure autopsy suite at SCH Laboratory and must be coordinated with the receiving pathologist.

#### Risk assessment

Facility risk assessment is performed annually for each acute care inpatient setting in the Region by the Infection Prevention & Control and Occupational Health and Safety programs. Assessment findings are reviewed by the Infection Control Committee and the committee recommends action.

## **2. Environmental Control Procedures**

Facilities Services is responsible for maintaining airborne infection isolation rooms to the current Canadian standard, ensuring proper directional air flow and adequate air change rate for each room. This also applies to surgical, bronchoscopy and autopsy suites, where applicable. Facilities Services procedures include HEPA filter changes and cleaning of TB rooms.

Endoscopy service is responsible to ensure proper cleaning and disinfection or sterilization processes for contaminated endoscopes/bronchoscopes to prevent transmission via contaminated equipment.

## **3. Personal Control Procedures**

#### Staff Testing

The Occupational Health & Safety Program is responsible for health care worker employment and post-exposure tuberculin skin testing (TST), identification of high risk groups of workers, annual TST for high risk groups, referral of workers with TST conversion, and the respiratory protection program. See OH&S manual policies "Tuberculosis Screening and Surveillance Program" and "Personal Protective Equipment- Respiratory Protection".

#### Education

Education regarding prevention, transmission and symptoms of TB is provided via the Infection Prevention & Control, Public Health Services and Occupational Health and Safety programs, based on Infection Prevention and Control Manual policy "Tuberculosis (TB)".

Clinical staff (nursing, respiratory therapy, physical therapy, etc) provide education to patients on respiratory hygiene and cough etiquette procedures.

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References:

1. Canadian Tuberculosis Standards, 5<sup>th</sup> Edition, 2000.
2. Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care Settings, 2005, Department of Health and Human Resources, CDC.
3. Saskatchewan Tuberculosis Control Program manual, 1998.