20–002: TARGETED PEDIATRIC SCREENING

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1. Overview and Purpose

Although the rate of pediatric TB cases in Saskatchewan is decreasing, pediatric tuberculin skin test (TST) screening continues in many communities across the province. This policy is an attempt to bring variable screening practices into alignment with the epidemiology of TB in Saskatchewan, based on evidence of its effectiveness for early detection and prevention of active TB disease and its cost-effectiveness relative to other active case finding activities.

Providing a policy direction for pediatric TST screening requires careful consideration of the opportunity costs of screening, both across risk groups and in relation to other interventions aimed at improving early diagnosis, treatment and prevention.

According to the Canadian Tuberculosis Standards (2014), "Screening for and treatment of latent tuberculosis infection (LTBI) should only be undertaken if the local TB control program already effectively manages active TB cases and their contacts" (p.321).

According to the World Health Organization (2013), "When resources are available, and when cost-effectiveness is assessed against a range of other health interventions, TB screening in selected risk groups may be affordable and have relatively low opportunity costs" (p. 2).

The purpose of this policy and procedure is:

1. To align pediatric screening practice across Saskatchewan Regions and jurisdictions based on the epidemiology of TB in the province and informed by evidence; and
2. To establish criteria and outline requirements for targeted pediatric screening in order to:
    - Identify children with LTBI or active TB who would benefit from treatment of latent TB infection;
    - Identify associates of children with LTBI who are themselves infected with LTBI or active TB and thus would benefit from treatment; and
    - Obtain epidemiologic data to assess trends in communities and overall program effectiveness.
3. To allow flexibility at the discretion of the TBPC SK or local MHO to support needs of local communities and manage changes in screening practice over time.

2. Definitions

Associate means a person who regularly sleeps in the same household as the index child with latent TB infection on an ongoing basis (e.g., three or more times per week). Associates may be other children, parents, grandparents, a babysitter, friend, or other relatives.

Associate investigation means an investigation conducted to identify associates of children infected with LTBI who are themselves infected with LTBI or active TB and thus would benefit from treatment. Associates will undergo tuberculin skin testing, if previously negative, and will be screened for symptoms of active TB. Associates previously TST positive will be screened for symptoms of active TB and risk factors for progression to active TB.

High-incidence community means a community that meets the following criteria:

1. Two or more cases of active TB in the current (reporting) year, of which at least one is primary TB or smear-positive pulmonary TB; **OR**

2. A five-year average incidence of TB that is **greater** than 100 cases per 100,000 population with at least one case in the previous three years; **OR**
3. A five-year average incidence of TB that is **less** than 100 cases per 100,000 population but with two or more cases per year in at least two of the previous three years.

Note: This definition was developed by the First Nations and Inuit Health Branch TB Outbreak and High Incidence Definitions Discussion Group and is referenced in Health Canada's Monitoring and Performance Framework for Tuberculosis Programs for First Nations On-Reserve. In Saskatchewan, flexibility is required in applying this definition such that communities may be designated high incidence at the discretion of the TB Prevention and Control Saskatchewan (TBPC SK) Medical Health Officer (MHO) or local MHO.

Northern Saskatchewan means geography under the jurisdiction of Athabasca Health Authority, Northern Saskatchewan Population Health Unit, or the Northern Inter-Tribal Health Authority.

Pediatric means persons less than 15 years of age.

Targeted pediatric screening means a targeted prevention program aimed at reducing the incidence of pediatric cases of TB through early identification and treatment of latent TB infection. The program may be referred to as pre-school/school screening or childhood screening.

TBPC SK means TB Prevention and Control Saskatchewan.

TBIS means TB Information System; the electronic data management system maintained by TB Prevention and Control Saskatchewan.

3. Recommendations for Screening

1. Screening is recommended for children for one age cohort around the time of school entry (i.e., 4, 5 or 6 years of age) that:
    - Reside or attend school within high-incidence communities in Northern Saskatchewan where risk of LTBI infection is higher; or
    - Reside on-reserve in south and central Saskatchewan where risk of LTBI is lower, but monitoring epidemiologic trends and program effectiveness is useful.
2. Children are eligible for screening if:
    - They are a member of the pediatric population to be screened as defined by birth year cohort, and
    - Their previous tuberculin skin test (TST) was negative or there is no record of a previous TST, and
    - They have not received the BCG vaccine, and
    - They have not been treated for latent TB infection or active TB.
3. The screening population cohort will be defined by the MHO for the local jurisdiction.

    Note: Eligible children not screened during the course of the screening year should be offered screening the following year. Although recommended, local Regions and jurisdictions are responsible for determining if resources allow for this.

4. Screening shall include a tuberculin skin test and assessment for symptoms of active TB in those found to have a positive TST.
5. Children found to have a positive TST will be medically evaluated by TBPC SK. Refer to TBPC SK clinical policy and procedure 30-001: Tuberculin Skin Testing for additional information regarding medical evaluations for persons with a positive TST.
6. Associate investigations will be initiated for children who are diagnosed with latent TB infection through screening.
7. The screening program shall be evaluated annually to inform decisions for the subsequent screening year based on the following results by community:
    - Number of eligible children screened compared with the total population of eligible children,
    - Number of children with a new positive TST requiring medical evaluation,
    - Number of children requiring medical evaluation that were evaluated,
    - Number of children diagnosed with active TB,
    - Number of children diagnosed with latent TB,
    - Number of children diagnosed with latent or active TB who were initiated on treatment,
    - Number of children treated for latent or active TB who completed treatment, and
    - Number of associates investigated and number diagnosed with latent or active TB.

4. Procedure

Screening

1. The reporting year begins January 1st and ends December 31st.
2. Perform tuberculin skin tests in accordance with TBPC SK clinical policy and procedure 30-001: Tuberculin Skin Testing. Local guidelines shall be followed for all remaining procedures such as obtaining informed consent and arranging screening with school authorities.

Documentation and Reporting

1. Tuberculin Screening Form for Targeted Pediatric Screening:
    - Complete the community information contained in the top right hand corner. The name of the primary nurse and contact number must be included. This section must be completed for each page submitted.
    - Columns shaded grey are to be used when organizing screening procedures; completion of these fields is optional. All other columns contain information TBPC SK requires for surveillance purposes; completion of these fields is mandatory.
    - Dates shall be formatted year-month-day. Date stamps may be used provided the month is identified alphabetically (e.g., JUL 06 2011 *or* 06 JUL 2011).
    - List all eligible children within the population cohort to be screened. If screening is not completed for a child, indicate the reason under comments (e.g., absent for reading, child moved, consent refused, etc.). Include other names the child may use

such as an alternate last name used currently or in the past, or any other name the child has used or is using.

Note: The child's full name, date of birth, gender, provincial health number and/or treaty number is mandatory information for surveillance purposes. The information uniquely identifies the child thereby ensuring accurate identification of the child and further provides a link to their medical record locally and within TBPC SK. The child's parent or next of kin is not an acceptable substitute for any of the child's unique identifiers.

2. Make a copy of the completed screening forms and file as per agency protocol.
3. Fax a copy of the forms to the First Nations TB RN if screening was performed on-reserve or to the Population Health Unit in La Ronge if screening was performed off-reserve in the three northern health regions.
4. Mail the original Tuberculin Screening Forms to the TBPC SK Saskatoon office within one month of each round of screening ensuring all forms are submitted within one month of the end of the reporting year (i.e., January 31st). Write the date the form is being mailed to TBPC SK at the bottom of the form.
5. Immediately report all children with a positive TST or symptoms of active TB to the area TBPC SK nurse clinician by fax using the Tuberculin Skin Test Screening Record. Document findings of the symptom assessment. Include additional information in the comments (e.g., if referred to a primary care provider, if sputum specimens requested or sent, chest x-ray requested, etc.). Refer to Appendix A for situations in which a TST is considered positive.
6. If, at the time the child is being screened, a request is made for a TST to be completed on someone outside of the population cohort (e.g., child`s parent, teacher or older sibling requests a TST), the TST must be reported to TBPC SK on the Tuberculin Skin Test Screening Record; do not include it on the Tuberculin Screening Form.

5. Roles and Responsibilities

TB Prevention and Control Saskatchewan

1. Maintain results of screening in TBIS. *Exception: results submitted on the screening form for persons not included in the targeted population group, such as teachers or older siblings, will not have their data entered in the TBIS survey section.*
2. In collaboration with partners, evaluate the screening program annually to determine effectiveness and establish priorities for prevention and control activities.
3. Support staff training and education regarding the screening program and related procedures such as tuberculin skin testing.

TBPC SK Nurse Clinicians

1. Receive and review positive screening results. Contact the local nurse if information is incomplete.
2. Notify the TB physician when symptoms of active TB are documented.
3. Schedule clinic appointments in collaboration with the TB physician and administrative support staff.
4. Initiate associate investigations for children found to have a positive TST during screening.

TBPC SK Physicians

1. Complete medical evaluations and prescribe treatment as required.

First Nations and Inuit Health Branch, Saskatchewan Region; Northern Inter-Tribal Health Authority; Regional Health Authority MHOs

1. Identify communities for inclusion in the screening program.
2. In collaboration with TBPC SK, evaluate the screening program annually to determine effectiveness and establish priorities for prevention and control activities.
3. Support staff training and education regarding the screening program and related procedures such as tuberculin skin testing.

Nurse Responsible for Screening

1. Perform tuberculin skin tests in accordance with TBPC SK clinical policy and procedure 30-001: Tuberculin Skin Testing.
2. Lead screening programs at the community level and forward screening results to TBPC SK ensuring demographic information is completed in full.
3. Inform parents/legal guardians of positive findings and if medical evaluation by TBPC SK is anticipated.

Appendix A: TST Size

TST Reaction Size (mm induration)	Situation in which the reaction is considered positive
0 – 4 mm	In general, considered negative and treatment not indicated
	Child under 5 years of age and high risk of TB infection
≥ 5 mm	HIV Infection
	Contact with a person with infectious TB within the past 2 years
	Presence of fibronodular TB on CXR (healed TB and not previously treated)
	Organ transplantation (related to immune suppressant therapy)
	Tumour necrosis factor-alpha inhibitors (anti-TNF drugs)
	Other immunosuppressive drugs (e.g., corticosteroids – equivalent of ≥ 15 mg/day prednisone for one month or more; risk of TB disease increases with higher dose and longer duration)
	End-stage renal disease
≥ 10 mm	All others, including the following specific situations: – TST conversion (within 2 years) – Diabetes, malnutrition (less than 90 % ideal body weight), cigarette smoking, daily alcohol consumption (greater than 3 drinks per day) – Silicosis – Hematologic malignancies (leukemia, lymphoma) and certain carcinomas (e.g., head and neck)

Adapted from: Public Health Agency of Canada, Canadian Thoracic Society & Canadian Lung Association. (2013) *Canadian Tuberculosis Standards, 7th edition.* Retrieved October 25, 2015 from http://www.respiratoryguidelines.ca/tb-standards-2013.

Appendix B: Tuberculin Screening Form for Targeted Pediatric Screening

Saskatoon Health Region

TB Prevention and Control SK
Saskatoon Main Office
Royal University Hospital
103 Hospital Drive
Saskatoon, SK S7N 0W8
Phone: 306-655-1740
Toll Free: 1-866-780-6482

Central TB Program
STC Health & Family Services, Inc.
200-235 Packham Ave.
Saskatoon, SK S7N 4R1
Phone: 306-956-0307
Fax: 306.956.0307

South TB Program
c/o South Service Centre TB RN
FNIHB
Box 220
Fort Qu'Appelle, SK
S0G 1S0
Fax: 306.332.4352

NITHA TB Program
Box 787
Prince Albert, SK
S6V 5S4
Fax: 306.953.5030

Population Health Unit – Northern Saskatchewan
Box 6000
La Ronge, SK
S0J 1L0
Fax: 306.425.8530

Community: _____

Target Group: Age _____ Screen done: ☐ On reserve ☐ Off reserve

Screening year (yyyy-mm-dd) _____ to _____

RN (print): _____ Phone: _____

TUBERCULIN SCREENING FORM for Targeted Pediatric Screening

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Please print or type

1. **Complete all fields in columns shaded white.** Grey columns optional.
2. **Immediately refer** children with a positive TST to TB Prevention & Control SK (TBPC SK) by completing a Tuberculin Skin Test Screening Record and faxing to the area TBPC SK nurse clinician.
3. **Mail original Tuberculin Screening Form** to TB Prevention & Control SK once screening round is complete. All records must be submitted within one month of the end of the screening year.
4. **Fax a copy** of the form to the First Nations TB RN if screening completed on-reserve. Fax a copy to the Population Health Unit if screening completed off-reserve.
5. Retain a copy of the screening form for local health centre as required.

Consent	Previous TST Date YYYY-MM-DD	Previous Result (mm)	BCG Yes No	TST Date YYYY-MM-DD	Result (mm)	Last Name	First Name	Other Name	Gender M/F	Date of Birth YYYY-MM-DD	FHN and/or Treaty number	Comments

MAIL Original: TB Prevention & Control SK, date sent: _____ **Copy:** First Nations TB RN if screening on-reserve **Copy:** Population Health Unit if screening off-reserve **Copy:** Health Centre

The personal health information collected on this form is collected for the purpose of carrying out a TB screening program and providing health services and public health surveillance. Information is collected, used and disclosed under the authority of the Public Health Act of Saskatchewan. Questions regarding the collection, use and disclosure of this information may be directed to TB Prevention and Control Saskatchewan.

TBPC SK 2017-06-22

References

Health Canada. (2016). Monitoring and Performance Framework for Tuberculosis Programs for First Nations On-Reserve. Retrieved May 19, 2017 from https://www.canada.ca/en/health-canada/services/publications/science-research-data/monitoring-performance-framework-tuberculosis-programs-first-nations-reserve-2015.html.

Pediatric Tuberculosis Collaborative Group. (2004.) Targeted tuberculin skin testing and treatment of latent tuberculosis infection in children and adolescents. *Pediatrics*. 114(4):1175-1201.

Public Health Agency of Canada, Canadian Thoracic Society & Canadian Lung Association. (2013) Canadian Tuberculosis Standards, 7th edition. Retrieved January 17, 2015 from http://www.respiratoryguidelines.ca/tb-standards-2013.

World Health Organization. (2013.) Systematic screening for active tuberculosis: principles and recommendations. Geneva: Author. Retrieved January 17, 2017 from http://www.who.int/tb/publications/Final_TB_Screening_guidelines.pdf.