

Section 7:	Biological Product Information	Standard #: 07.330
Created by:	Tuberculosis Program	
Approved by:	Tuberculosis Program	
Approval Date:	February 12, 2013	Revised: June 1, 2017

Tubersol®	
Manufacturer	Sanofi Pasteur Ltd.
Indications for Provincially Funded Vaccine	<ul style="list-style-type: none"> • Recent contacts of a known infectious tuberculosis case • Individuals with medical conditions/therapies that increase risk of progression from latent tuberculosis infection (LTBI) to active TB disease: <ul style="list-style-type: none"> ○ HIV infection/AIDS ○ Transplantation (donor and recipient) ○ Chronic renal failure requiring hemodialysis ○ Silicosis ○ Carcinoma of head & neck ○ Treatment with immunosuppressive drugs (current/anticipated)* ○ Hemolytic malignancies ○ Fibronodular or other changes suggesting prior TB disease** • Children aged 6 months up to and including 14 years of age who have lived in a country with high TB incidence*** AND have immigrated within the past two years • All refugees less than 50 years of age from countries with high TB incidence AND have arrived in Canada within the past two years • Individuals at risk for potential occupational exposure to infectious TB: <ul style="list-style-type: none"> ○ Health care workers (HCW). See Notes Section for definition of health care worker and Standard for Immunization of Health Care Workers #08.301 ○ Post-secondary health care students. See Notes Section and Standard for Immunization of Post-Secondary Health Care Students #08.302 ○ Other individuals who work in programs, facilities or institutions that provide services <i>to populations at increased risk for TB disease</i>: <ul style="list-style-type: none"> • the homeless/under-housed (i.e., individuals who access homeless shelters) • people who reside in congregate living settings such as correctional facilities, substance abuse rehabilitation centres, or continuing care facilities • foreign-born individuals from countries with high TB incidence • Aboriginal Canadians from communities with high rates of TB ○ Regular volunteers who work with populations at increased risk for TB who will be volunteering for 150 or more hours in a year (i.e., approximately one-half day per week) • Residents of long term (greater than 3 months) substance abuse/misuse rehabilitation centre AND have a risk factor for progression from LTBI to active TB disease • Travelers to high incidence TB countries who meet specific criteria. Consult travel health services for specific criteria • Inmates at Provincial Correctional Institutions (not including Remand Centres) • Ophthalmologist referred individuals for assessment of Uveitis <p>Note: *Commonly used immunosuppressive drugs</p> <ul style="list-style-type: none"> • Corticosteroids (equivalent of ≥15mg/day of prednisone for ≥ 1 month) • TNF-alpha inhibitors (e.g., Remicade, Humira, Enbrel etc.) • Interleukin-12 and Interleukin-23 inhibitors (treatment for psoriasis) • Chemotherapy

Tubersol®									
	<ul style="list-style-type: none"> • Azathioprine (Imuran) • Cyclosporine (Cyclosporin A) • Leflunomide <p>** A Tuberculin Skin Test should NOT be performed to diagnose active TB disease. Please consult TB services before performing a TST on individuals with abnormal chest radiograph or symptoms of active TB disease</p> <p>***Countries with high TB incidence are identified by the World Health Organization listed at http://www.who.int/tb/publications/global_report/gtbr15_annex04.pdf?ua=1 refer to table A4.1. To find incidence rates, review column “Notified cases” and look a “rate”. Definition of high TB incidence countries/territories is 30 per 100,000 or greater for all forms of active TB cases (3-year average)</p>								
Schedule	<p>Timeframe for Tuberculin Skin Test (TST) reading</p> <ul style="list-style-type: none"> • 48 to 72 hours after administration. If the TST is not read within 72 hours, the test needs to be repeated at a different site. Self-reading of TSTs is not an acceptable practice under ANY circumstances. <p>Interpretation</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #d9ead3;">TST reaction size (mm of induration)</th> <th style="background-color: #d9ead3;">Situation in which reaction necessitates referral to the AHS TB Program</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">0 to 4 mm</td> <td> <ul style="list-style-type: none"> • HIV AND the expected likelihood of TB infection is high (e.g., the client is from a population with a high incidence of TB infection, is a close contact of an active infectious case, or has an abnormal x-ray) • Child under 5 years of age and high risk of TB infection (i.e. recent contact of infectious TB case) </td> </tr> <tr> <td style="text-align: center;">5 mm and greater</td> <td> <ul style="list-style-type: none"> • HIV infection • Close contact of an active infectious case • History of abnormal chest x-ray with fibronodular disease (healed TB not previously treated) • Organ transplantation (related to immune suppressant therapy) • TNF inhibitors • Other immune suppressive drugs* such as corticosteroids (equivalent of 15mg/day and greater of prednisone for 1 month or more), chemotherapy • End-stage renal disease/dialysis </td> </tr> <tr> <td style="text-align: center;">10 mm and greater</td> <td> All others meeting indication criteria for TST, including individuals with: <ul style="list-style-type: none"> • TST conversion • silicosis, carcinoma of head or neck, hematologic malignancies (leukemia, lymphoma) • Ophthalmologist referred individuals for Uveitis </td> </tr> </tbody> </table> <p>*Commonly used immunosuppressive drugs listed above.</p> <p>Single-step TST</p> <ul style="list-style-type: none"> • Single-step (one TST only) is recommended for most persons, including post-secondary students at risk for potential occupational exposure to infectious TB 	TST reaction size (mm of induration)	Situation in which reaction necessitates referral to the AHS TB Program	0 to 4 mm	<ul style="list-style-type: none"> • HIV AND the expected likelihood of TB infection is high (e.g., the client is from a population with a high incidence of TB infection, is a close contact of an active infectious case, or has an abnormal x-ray) • Child under 5 years of age and high risk of TB infection (i.e. recent contact of infectious TB case) 	5 mm and greater	<ul style="list-style-type: none"> • HIV infection • Close contact of an active infectious case • History of abnormal chest x-ray with fibronodular disease (healed TB not previously treated) • Organ transplantation (related to immune suppressant therapy) • TNF inhibitors • Other immune suppressive drugs* such as corticosteroids (equivalent of 15mg/day and greater of prednisone for 1 month or more), chemotherapy • End-stage renal disease/dialysis 	10 mm and greater	All others meeting indication criteria for TST, including individuals with: <ul style="list-style-type: none"> • TST conversion • silicosis, carcinoma of head or neck, hematologic malignancies (leukemia, lymphoma) • Ophthalmologist referred individuals for Uveitis
TST reaction size (mm of induration)	Situation in which reaction necessitates referral to the AHS TB Program								
0 to 4 mm	<ul style="list-style-type: none"> • HIV AND the expected likelihood of TB infection is high (e.g., the client is from a population with a high incidence of TB infection, is a close contact of an active infectious case, or has an abnormal x-ray) • Child under 5 years of age and high risk of TB infection (i.e. recent contact of infectious TB case) 								
5 mm and greater	<ul style="list-style-type: none"> • HIV infection • Close contact of an active infectious case • History of abnormal chest x-ray with fibronodular disease (healed TB not previously treated) • Organ transplantation (related to immune suppressant therapy) • TNF inhibitors • Other immune suppressive drugs* such as corticosteroids (equivalent of 15mg/day and greater of prednisone for 1 month or more), chemotherapy • End-stage renal disease/dialysis 								
10 mm and greater	All others meeting indication criteria for TST, including individuals with: <ul style="list-style-type: none"> • TST conversion • silicosis, carcinoma of head or neck, hematologic malignancies (leukemia, lymphoma) • Ophthalmologist referred individuals for Uveitis 								

Tubersol®	
	<p>Two-step TST</p> <ul style="list-style-type: none"> • Indication for baseline two-step testing (meet one or more of the following criteria): <ul style="list-style-type: none"> ○ It is anticipated that the individual will undergo repeated screening with TSTs at regular intervals <ul style="list-style-type: none"> • HCW involved in high-risk activities <ul style="list-style-type: none"> - cough-inducing procedures (this does not include throat and or nasal swabs) - autopsy - morbid anatomy and pathology examination - bronchoscopy - designated mycobacteriology laboratory procedures especially handling cultures of <i>M. tuberculosis</i>. • HCW who work on high-risk units** to which patients with active TB are admitted • Other employees or volunteers at facilities that require TST screening at regular intervals such as targeted*** high-risk homeless shelters or inner city agencies • Travelers to high incidence TB countries who meet specific criteria. Consult travel health services for specific criteria. • Administration of two-step TST <ul style="list-style-type: none"> ○ The first TST of a two-step TST is administered in the same manner as a single-step TST. If the initial TST is positive, the second TST should not be done. If the initial TST result is negative, a second TST should be administered at a different site. ○ The second TST should be given no sooner than 7 days after the first TST and no later than 28 days after the first TST. <p>Note:</p> <ul style="list-style-type: none"> • **High-risk units are determined by the TB program based on the Canadian Tuberculosis Standards risk classification of health care facilities • ***Targeted inner city agencies are identified by the TB program based on active TB case rate
Preferred Use	At this time Tubersol® is the only product licensed for tuberculin skin testing in Canada.
Dose	0.1 mL
Route	Intradermal
Contraindications/Precautions	<p>Contraindications:</p> <ul style="list-style-type: none"> • Anaphylactic or other allergic reaction to previous tuberculin PPD • Known hypersensitivity to any component of TUBERSOL® • History of past active tuberculosis or treatment for latent tuberculosis infection • History of blistering TST reaction • Well documented* history of a positive TST reaction • Inflammatory skin condition at the site of injection (i.e., burns or eczema) • Have received a live virus vaccine within the past 28 days/4 weeks • Major viral infections <p>Precautions:</p> <ul style="list-style-type: none"> • Do not inject subcutaneously, intramuscularly or intravenously. • False positive reaction may occur in individuals who have been: <ul style="list-style-type: none"> ○ infected with non-tuberculous mycobacterium (NTM) ○ vaccinated with BCG • False negative reactions may occur due to: <ul style="list-style-type: none"> ○ immune suppression due to HIV, advanced age, treatment with immune suppressive drugs or therapies ○ severe illness (which may include active TB disease) ○ major viral illness (e.g., mononucleosis, mumps, measles but NOT the common cold) ○ immunization with MMR, varicella, or yellow fever vaccine within the previous four

	Tubersol®
	<p>weeks</p> <ul style="list-style-type: none"> ○ very young age (less than six months) – validity of TST is unknown, thus TST in this group is not generally recommended <p>Note: *Individuals with a history of undocumented positive TST reaction (other than blistering) can receive a TST; if these individuals decline to have baseline TST they do require baseline chest X-ray through their family physician</p>
Possible Reactions	<p>Common Local pain, itchiness and discomfort at the test site may occur.</p> <p>Rare 2 to 3% will have localized redness or rash without induration within 12 hours of testing (does not indicate TB infection)</p> <p>Very Rare</p> <ul style="list-style-type: none"> • Ulceration or necrosis at the test site in highly sensitive persons • Acute allergic reactions including anaphylaxis, angioedema, urticaria and/or dyspnea
Pregnancy	Can be administered to eligible pregnant women. While pregnancy is not a contraindication, administration of TST in the absence of HIV infection or recent contact with a confirmed TB case is usually deferred until after delivery.
Lactation	Can be administered to eligible breastfeeding women.
Composition	<p>Tubersol® contains:</p> <ul style="list-style-type: none"> • Purified protein derivative of M tuberculosis – 5 TU per 0.1 mL • Polysorbate 80 – 0.0006% • Phenol – 0.22% to 0.35% <p>in sterile isotonic phosphate buffered saline.</p>
Blood/Blood Products	Does not contain blood/blood products
Bovine/Porcine Products	
Latex	There is no latex in product or the stopper of the vial.
Interchangeability	
Administration with Other Products	<ul style="list-style-type: none"> • Tuberculin skin test can be administered either before or at the same time as live virus vaccines; otherwise, the tuberculin skin test should be delayed for 28 days/4 weeks following the live virus vaccine. • When tuberculin screening is required at the same time as a live virus vaccine, administration of the Tuberculin skin test and the vaccine at separate anatomic sites is preferred. • There is no spacing required between Tuberculin Skin Testing (TST) and quadrivalent live attenuated influenza vaccine (QLAIV). TST may be given at any time before or after QLAIV. • Do not use EMLA cream (or similar local anesthetic cream), as application of this cream has been reported to cause localized edema, which could easily be confused with a positive TST result
Appearance	Clear, colorless liquid
Storage	<ul style="list-style-type: none"> • Store product between +2°C and +8°C at all times. • Do not freeze • Label product with the day opened on the vial (using yyyy=4 digit year, mon=3 letter month, dd=2 digit date) once opened and discard any unused solution after 30 days of first puncture of the vial • Store in original packaging to protect from light
Vaccine Code	PPD

	Tubersol®
Antigen Code	PPD
Licensed for	All individuals as based on indications
<p>Notes:</p> <ul style="list-style-type: none"> • Draw up solution with tuberculin syringe just prior to giving, do not pre-load syringe, do not inject air into vial • If wheal does not appear, repeat TST immediately in opposite arm • Do not massage or cover the site with a bandage after injection • Measure only the transverse diameter of induration; redness is to be ignored • Record the result in millimeters • If a TST cannot be performed in the preferred site of the inner forearm (e.g. double mastectomy), alternate site is the upper back, intra dermally within the skin overlying the scapula <p>Health care worker (HCW) (adapted from Alberta Health (AH)):</p> <ul style="list-style-type: none"> • Includes all hospital employees, other staff who work or study in hospitals (e.g., students in health care disciplines and contract workers) physicians, volunteers and other health care personnel (e.g., those working in clinical laboratories, long term care facilities, home care agencies and community settings), who are at risk of exposure to infectious TB because of their contact with individuals or material from individuals with infectious TB both diagnosed and undiagnosed. • Students in dental programs would not be included routinely as an eligible group for baseline TST unless they are working with high risk clients or in high risk settings. <p>All individuals with symptoms of active TB should be referred immediately to the TB program. Call for an appointment before the client leaves the clinic. A TST is not appropriate.</p> <ul style="list-style-type: none"> • For all positive reactors, please refer to your local zone referral process for the Calgary, Central and Edmonton TB programs. • Complete referral form (found at http://www.albertahealthservices.ca/frm-07980.pdf) and fax to the appropriate TB program. 	
<p>Related Documents:</p> <p>Referral process for Calgary TB Services Referral process for Central TB Services Referral process for Edmonton TB Services</p>	
<p>References:</p> <ol style="list-style-type: none"> 1. Alberta Health and Wellness (2010). Tuberculosis Prevention and Control Guidelines for Alberta. Edmonton AB. 2. Ministry of Health (2013). <i>Canadian Tuberculosis Standards (7th ed)</i>. Ottawa ON: Tuberculosis Prevention and Control, Public Health Agency of Canada, The Canadian Lung Association. http://www.phac-aspc.gc.ca/tbpc-latb/pubs/tb-canada-7/index-eng.php 3. Sanofi Pasteur Limited. (2012, October 2). TUBERSOL® Tuberculin Purified Derivative (Mantoux). <i>Product Monograph</i> 	