Tuberculosis

Subject

Instructions for the screening of clients to detect tuberculosis (TB) in the context of the Canadian immigration medical examination (IME).

Goal/Objective

These instructions are provided to ensure that Panel Physicians (PPs) follow a consistent and appropriate process in the following:

- Identification of clients with active or latent pulmonary or extra-pulmonary TB;
- Investigation of clients where there is clinical suspicion of active pulmonary TB;
- Investigation of clients who are close contacts of an individual with active TB;
- Referral to a specialist (e.g. TB Control) for further investigation and treatment of suspected active TB and latent TB; and
- Completion and grading of an IME of a client with suspected tuberculosis.

Instructions

Rationale

TB remains an important and serious global public health challenge that requires coordinated international and national prevention and control efforts. Although the incidence of TB in Canada is low and the disease is no longer common in the general population, TB remains a serious problem in certain sub-populations, such as First Nations and Inuit, persons living in Canada who have arrived from regions of the world with a high incidence of TB and those with other health problems such as HIV/AIDS. The many and varied conditions in which Canadians live mean that the risks and impacts of TB are not uniformly distributed within our boundaries. There is a pressing need to better understand and target groups at increased risk, and tailor prevention and control efforts to meet their specific needs. In addition, resistance to some of the drugs used to treat TB is a growing problem in some locations. In a globalized, interconnected world the implications of drug-resistant strains are a concern for all nations. Keeping in mind the Global Plan to Stop TB 2006-2015, the overarching goal is now of reducing the national incidence rate of reported TB in Canada to 3.6 per 100,000 or less by 2015.

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CIC's mandate to protect Canadian public health is aligned with this Canadian TB strategy. CIC has the obligation to report to Canadian health authorities any cases of TB (active or inactive) identified amongst the immigrant population. Thorough TB screening is a mandatory part of the IME regardless of age. In order to guide PPs in the TB screening of clients, we recommend they read carefully the Canadian Tuberculosis Standards 6th Edition, 2007 http://www.phac-aspc.gc.ca/tbpc-latb/pubs/pdf/tbstand07_e.pdf

Screening and Testing

History and Physical Examination

All clients whether excessive demand exempt (EDE) or not, must be screened for TB disease through history and physical examination. Questions in addition to those in the IME medical history, which may assist the PP in screening for the presence of TB include:

- Do you have a chronic cough? If so, have you had any blood-tinged sputum (haemoptysis)?
- Do you have any fatigue, fever, night sweats, or weight loss?

Note that the following investigations are **not** presently included as part of routine screening:

- Tuberculin skin testing (**TST**) with purified protein derivative (ppd); and
- Interferon gamma release assay (**IGRA**).

However, the above tests should be considered for close contacts of active TB cases as recommended in the Canadian Tuberculosis Standards 6th Edition, 2007 http://www.phac-aspc.gc.ca/tbpc-latb/pubs/pdf/tbstand07_e.pdf

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Radiology

Postero-anterior chest radiography is required for:

- All clients **11 years of age** and over; and
- Clients regardless of age:
  - with symptoms suggestive of active TB;
  - who have been in close contact with an active TB case; or
  - with a past history of treatment for TB.

The radiology section of the new IME form includes a question for completion by the radiologist:

This x-ray is suspicious of active TB	Yes / No

Radiologists reporting in paper-based system:

- must notify the PP immediately if the x-ray is suspicious of active TB. The PP should refer the client, without delay, to a TB specialist for investigation and treatment.

eMedical Radiologists:

- a "Yes" response to this question will trigger a system-generated "active TB" flag to the client's eMedical file to notify the PP of the need for immediate referral.

TB investigation

Upon submission of the complete IME, the RMO may decide to further the client for additional TB investigation in order to verify abnormalities detected on the chest x-ray and to rule-out active TB.

Standard and acceptable TB investigation includes:

- Repeat chest x-ray 3 months after the initial chest x-ray; and
- TB smears and solid cultures done on 3 sputum's collected under direct observation on 3 consecutive mornings; or
- If sputum production is impossible, chest x-ray must be repeated 6 months after the initial to ensure stability.

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Active TB

For clients with physical, symptomatic, and/or radiographic findings suggestive of **ACTIVE TB**, the PP must include the following upon submission of the IME:

- immediate referral to a TB centre or specialist who can complete investigations and provide treatment for **active TB** aligned with
  - WHO recommendations: http://whqlibdoc.who.int/publications/2010/9789241547833_eng.pdf; or
  - the Canadian Tuberculosis Standards http://www.lung.ca/cts-sct/pdf/tbstand07_e.pdf (**chapter 6, page 114**);
- complete the IME and submit to the Regional Medical Office (RMO) noting that the client has been referred for further investigation and possible treatment;
- where active TB is confirmed, proceed with Hepatitis B and C screening, HIV screening (if not already done), screen for latent TB in family members and close contactst hat are also CIC clients then provide interim reports and x-rays to RMO with details of ongoing treatment; and
- send the final report with proof of completion of treatment and any additional x-rays and lab reports.

Latent TB Infection (LTBI)

When a client is diagnosed with active pulmonary TB, family members or close contacts who are also CIC clients and have had significant exposure with these people, **should undergo TB screening of contacts as part of their respective IME** (see Canadian Tuberculosis Standards http://www.phac-aspc.gc.ca/tbpc-latb/pubs/pdf/tbstand07_e.pdf) **chapter 12, page 263**.

Screening of TB contacts is done through:

- an interview of close contacts regarding the circumstances and duration of contact, presence of symptoms, previous history of tuberculosis, TB exposure and prior TST. If an interpreter is used, PPs must select and ensure that the interpreter is unbiased and has no connection to the client. Family members or friends cannot act as an interpreter for a client. The use of a professional interpreter is at the client's expense;
- PPs should ensure that close contacts with no previous history of TB or documented positive tests **receive a TST**. A history of BCG vaccination does not alter the interpretation of the skin test results; and
- Clients with positive TST, as well as all children under age 5, all those who are symptomatic and all those who are HIV seropositive or severely immunocompromised (regardless of the results of the initial TST) should have a **chest radiography**.

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Treatment of LTBI should be recommended for contacts with the following TST Result:

< 5 mm:

- HIV infection and high risk of TB infection (contact with infectious TB, from high TB incidence country or abnormal chest x-ray);
- Other severe immunosuppression and high risk of TB infection; or
- Child less than 5 years and high risk of TB infection.

5 to 9 mm:

- HIV infection;
- Recent contact with infectious TB;
- Fibronodular disease on chest radiograph (healed TB but not previously treated, or if treated, not adequately treated);
- Organ transplantation (related to immune suppressant therapy); or
- Other immunosuppressive drugs, e.g. corticosteroids (equivalent of ≥ 15 mg/day of prednisone for 1 month or more; risk of TB disease increases with higher dose and longer duration).

≥10 mm:

- All contacts including converters with a normal chest x-ray and no symptoms of active disease.

Treatment of LTBI should only be considered after the possibility of active TB has been excluded. Persons suspected of having active TB should be referred to a specialist.

Non Respiratory TB or Extra-pulmonary (EP)

The PP should be vigilant for signs of extra-pulmonary (EP), i.e. non-respiratory disease, such as lymphadenopathy, pleural effusion, and abdominal or bone and joint involvement, as these may be present concomitantly, particularly in HIV-infected individuals. Suspected non-respiratory TB should also be referred to a specialist for examination of sputum, a chest radiograph and HIV testing if not already done.

Grading

All IMEs with evidence of TB, including family or contacts of active TB cases, must be graded B

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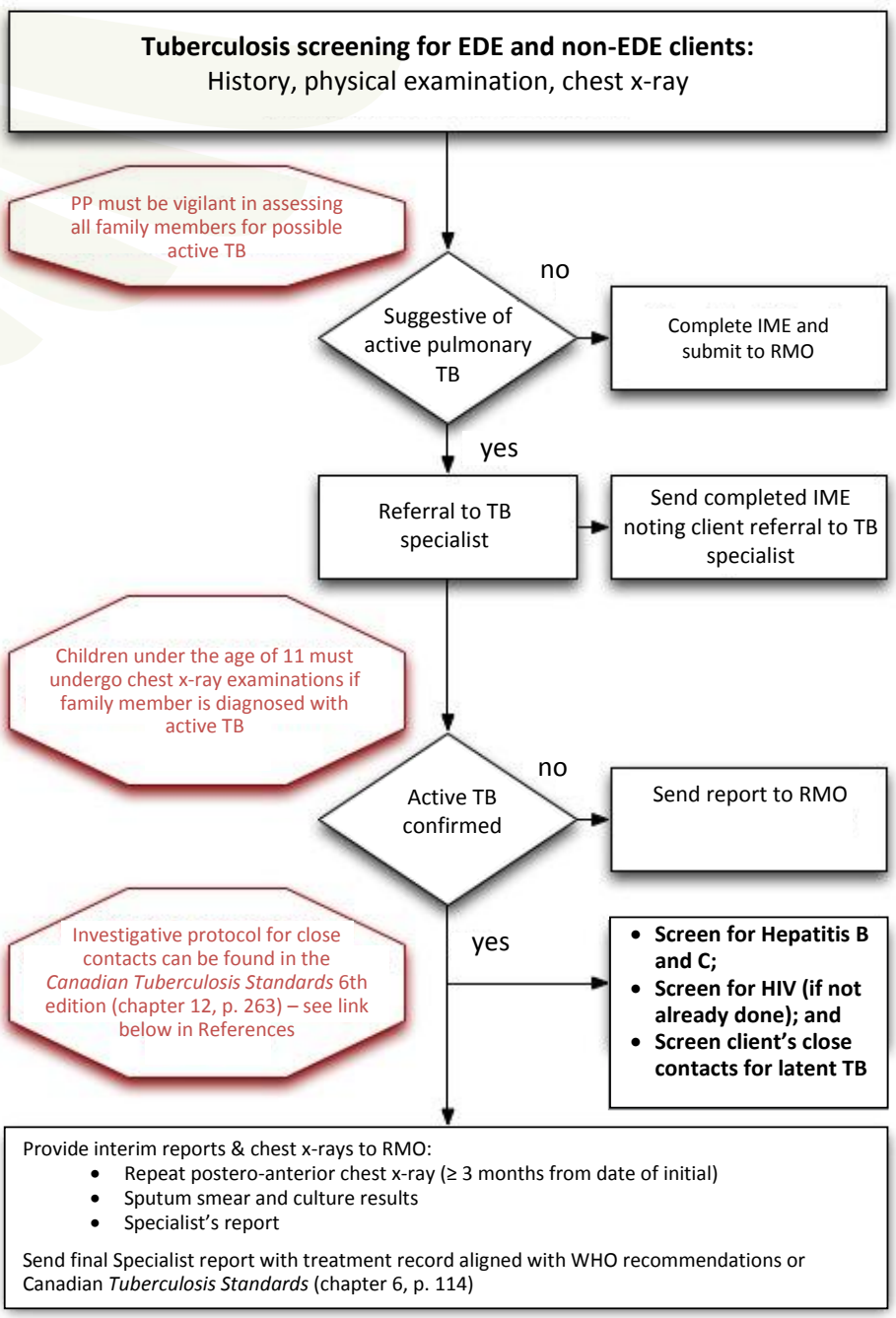
Algorithm



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References

1) Canadian Tuberculosis Standards 6th Edition – 2007
http://www.phac-aspc.gc.ca/tbpc-latb/pubs/pdf/tbstand07_e.pdf

2) World Health Organization
http://whqlibdoc.who.int/publications/2010/9789241547833_eng.pdf

3) http://www.stoptb.org/global/plan/

4) Tuberculosis - Information for Health Care Providers - Fourth Edition by the Ontario Lung Association
http://www.healthunit.org/professionals/Resources/TB.pdf

5) BC Strategic Plan for Tuberculosis Prevention, Treatment and Control BC Communicable Disease Policy Advisory Committee
http://www.bccdc.ca/NR/rdonlyres/371821DC-D135-4BC6-8AD9-4F09CF667B29/0/BC_Strategic_Plan_Tuberculosis.pdf

6) Centre for Disease Control (CDC)
http://www.cdc.gov/tb/publications/factsheets/default.htm http://www.cdc.gov/tb/publications/factsheets/treatment/LTBItreatmentoptions.htm

HB Approval and Authority

Director General, NHQ, Health Branch, CIC

Implementation Date

2012/11/01

Revision Date(s)

2013/11/01