

Guidelines for the investigation and follow-up of individuals under medical surveillance for tuberculosis after arriving in Canada: a summary

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New immigrants to Canada and refugees often come from countries where tuberculosis (TB) is common. It is important to screen new arrivals to Canada for active or latent TB so that they can be treated, and to prevent the spread of TB in Canada.¹ Thus, Canadian immigration authorities screen new immigrants and those seeking refugee status for TB. TB prevention and control is a public health responsibility, as is the overseeing of the medical surveillance program described here. The level of involvement of primary care physicians in this program varies between provinces. However, all physicians in practice in Canada need to play an active role in the early recognition and diagnosis of TB. Here we summarize the recent guidelines for the screening and management of TB in immigrants and refugees who have been referred to local public health authorities for medical surveillance for TB as a result of the immigration medical examination.²

Although individuals referred for medical surveillance most often present directly to public health authorities, they may also make their first contact with a physician in the community. If this happens, the physician should notify public health officials who are responsible for monitoring and quality assurance of the medical surveillance program. It is very important not to miss an opportunity to make the diagnosis of active TB, because early diagnosis and treatment will prevent further transmission of the disease. Therefore, every attempt should be made to ensure that such individuals have an adequate assessment and do not become lost to follow-up, an additional responsibility of public health authorities. Active medical surveillance with physician participation among individuals at increased risk for TB is designed to improve rates of detection of active TB and optimize preventive efforts.³⁻⁵ The immigration medical examination is carried out by immigration authorities usually before arrival in Canada and surveillance by local physicians once the person has arrived. A summary of the surveillance process is described in Fig. 1.

What is the immigration medical examination?

All immigrant applicants to Canada, those who wish to come to Canada as refugees and certain visitors are required to undergo an immigration medical examination to

identify those who may pose a risk to public health or safety, or may place excessive demands on Canadian health and social services.

The immigration medical examination, completed in the country of origin before arrival in Canada for those who apply from abroad, and in Canada for those who apply locally, consists of a medical history-taking, physical examination and 3 age-related routine tests: urinalysis (for applicants > 5 years), chest radiograph (at > 11 years) and syphilis serology (at > 15 years). Since the guidelines that are summarized here were written,² HIV has been added to the panel of tests done routinely as part of the immigration medical examination. Further medical examinations and laboratory tests can be requested by the examining immigration physician. Applicants who apply from abroad and are found to have *active* TB are denied entry until they have completed a satisfactory course of treatment.

Those who are known to have or suspected of having *latent* (or inactive) TB and deemed to be at increased risk for progression to active TB are accepted for immigration but are required to be under medical surveillance as a condition of entry. This condition requires that they report within 30 days of arrival to a public health authority in the province or territory of destination.

What is the role of the community or specialist physician?

Individuals identified as having had TB in the past or as having high-risk latent TB are referred to public health officials by Citizenship and Immigration Canada for follow-up. Documents and radiographs pertaining to the immigration medical examination undertaken by Citizenship and Immigration Canada may assist the in-Canada evaluation.

The guidelines recommend that referred individuals undergo a complete medical evaluation by, or in consultation with, a physician experienced in the diagnosis and management of TB. The key component of the first in-Canada examination is to evaluate the applicant for active TB and will include a screen for symptoms (e.g., cough, weight loss, fatigue, fever, night sweats, hemoptysis), as well as a chest radiograph and, where appropriate, sputum collection for mycobacterial smear and culture.² For individuals who are referred because of a past history of TB, it is essential to

evaluate the adequacy of previous treatment (how and where the individual was treated, or whether the individual completed treatment satisfactorily). Individuals with previous inadequate treatment for TB should be recognized as being at particularly high risk for drug-resistant disease, if they were to develop active disease again.

Tuberculin skin testing is not part of the routine immigration medical examination, even though skin testing remains the only available test for the detection of latent TB infection. The reasons for this include the following: the test may be a false positive because of BCG (bacille Calmette–Guérin) vaccination or infection with environmen-

tal mycobacteria, and more than half of adults screened would be expected to have a positive result. In addition, most of those with a positive result would be considered “low-risk reactors.”^{6,7} In these individuals, the benefit of therapy for latent TB infection is modest. Greater priority should be placed on the identification and tuberculin testing of people at increased risk of progression to active disease if infected. Factors that increase the risk of progressing to active disease include the following: HIV, recent TB infection, upper lung zone fibronodular changes on chest radiograph, previous inadequately treated active TB, organ transplantation, prolonged use of corticosteroids or

other immunosuppressing agents, chronic renal failure, hematologic malignancies, silicosis and, to a lesser extent, diabetes and malnutrition. Practitioners who provide health services to people at high risk for TB infection, including individuals born in TB-endemic countries, should be well acquainted with these risk factors for progression to active disease, because the presence of these risk factors is an indication for TB screening (see the *Canadian Tuberculosis Standards*).¹

Individuals diagnosed with latent TB infection should be considered for treatment using standard treatment regimens, as outlined in the *Canadian Tuberculosis Standards*.¹ People who are at high risk of progressing to active disease receive priority. Consultation with a TB expert is required if infection with a multidrug-resistant strain of *Mycobacterium tuberculosis* is known or suspected.

Based on the results of the initial in-Canada medical evaluation, the physician should make a recommendation for follow-up. If the patient has evidence of active TB, this requires notification of public health officials and the timely initiation of treatment with an appropriate regimen, as defined by the *Canadian Tuberculosis Standards*.¹ The treatment regimen should take into account the possibility of drug-resistant TB being present, because this is a relatively common problem in parts of the world from which many patients are emigrating.

Those who complete an adequate course of treatment for either active or latent disease can usually be discharged from follow-up. The duration of follow-up for those not treated may last up to 3–5 years, depending upon the risk of relapse or reactivation, especially with a

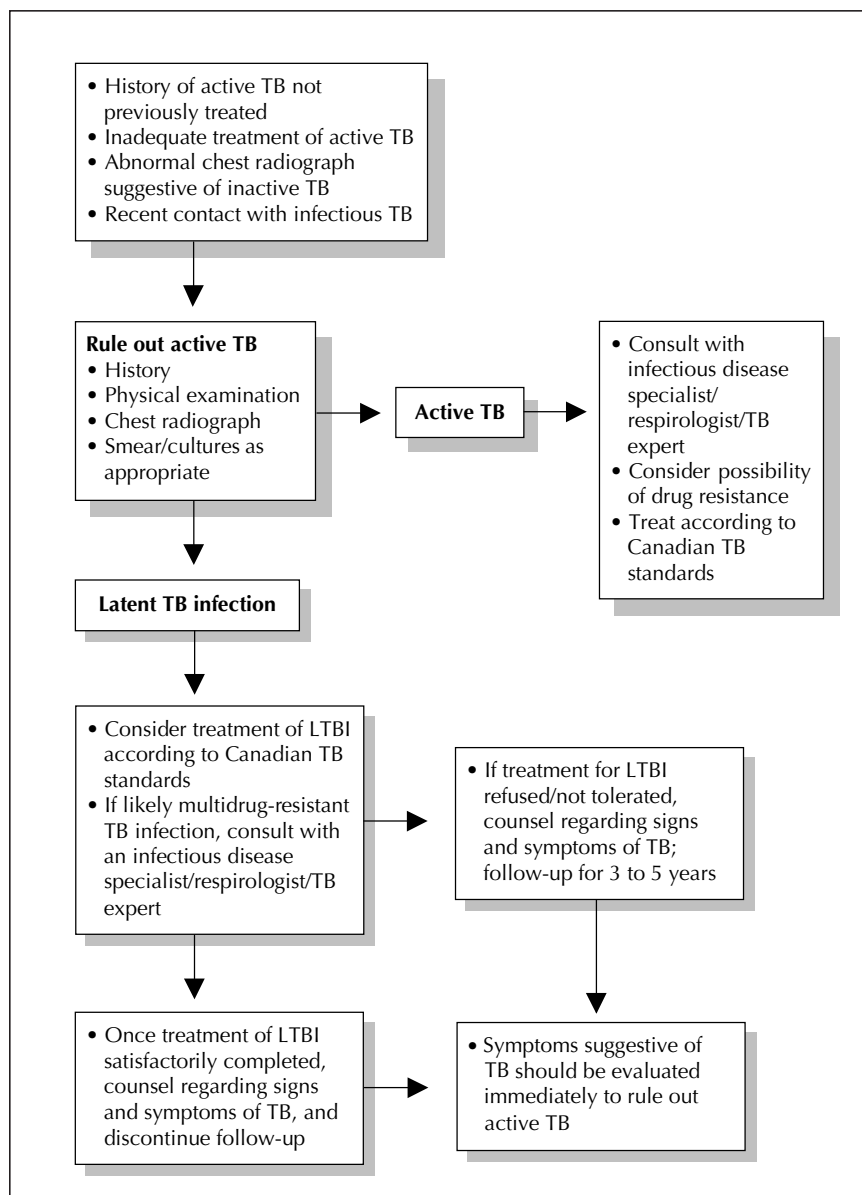


Fig. 1: Follow-up of individuals placed under medical surveillance for tuberculosis (TB). LTBI = latent TB infection. Reproduced with the permission of the Minister of Public Works and Government Services Canada (*Canada Communicable Disease Report 2001*;27[19]:157-65).

drug-resistant strain of TB. It is not uncommon that those who are under routine medical surveillance present with symptoms of active TB at a time other than the scheduled review appointment.⁸ It is therefore important that primary care physicians be alert to the potential for TB and be able to initiate diagnostic interventions without delay. Lack of appropriate follow-up of individuals with inactive TB on chest radiograph will compromise the cost-effectiveness of the surveillance program.⁹ If an individual develops symptoms of active TB, it is important that he or she be seen promptly to reduce the possible spread of the disease. People who are discharged from follow-up should be advised to seek medical attention promptly if they develop symptoms suggestive of TB and to tell their medical providers about their history of having been placed under medical surveillance for TB as a result of their immigration medical examination.

The global burden of TB is tremendous: 1.86 billion people around the world were infected with *M. tuberculosis*, and over 24 million people had active TB in 1997.¹⁰ The developing world bears the brunt of most of this global epidemic, accounting for about 95% of the 8 million new cases reported every year.¹¹ Physicians in Canada need to be acquainted with this disease and can make a significant contribution to its control in the early diagnosis and treatment of active TB and the prevention of disease among high-risk individuals. Such early diagnosis results in the ability to interrupt transmission of TB in Canada.

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