



Canadian Tuberculosis and Air Travel Guidelines, Version 2.0 (Effective June 2009)

Preamble

Persons with untreated active respiratory tuberculosis (TB), partially treated active respiratory TB or suspected respiratory tuberculosis may infect other persons and should be prevented from travelling on commercial aircraft¹. When such events do occur, it is imperative that passengers or crew potentially at risk of infection be notified in order that they may seek appropriate medical follow-up. All cases of TB with a history of air travel must be reported to the Public Health Agency (PHAC), where a risk assessment will take place to determine the need for a contact investigation.

In February 2008, PHAC produced the first version of the *Canadian Tuberculosis and Air Travel Guidelines*. It was based on the second edition of the World Health Organization (WHO) *Tuberculosis and Air Travel: Guidelines for Prevention and Control*² and supplementary recommendations from the Canadian Tuberculosis Committee. In June 2008, the WHO released the revised third edition of the *Tuberculosis and Air Travel: Guidelines for Prevention and Control*. These guidelines describe the risk of TB transmission to contacts of cases of active TB on large commercial aircraft, clarify the threshold criteria for initiating a contact investigation and outline the procedures and roles of various partners for purposes of public health action.

The Canadian TB and Air Travel Guidelines, Version 2.0 are based on the revised WHO guidelines and additional recommendations made by the Canadian Tuberculosis Committee. These Canadian guidelines go beyond those of the WHO and include additional recommendations regarding cases of laryngeal TB, multidrug-resistant (MDR) and extensively drug-resistant (XDR) TB and regarding the time elapsed between date of the flight and reporting. Please note that these criteria and guidelines apply to large jet aircraft used for most long distance flights. Cases who have travelled on smaller aircraft for shorter durations should still be reported and risk to passengers on such flights will be assessed on a case by case basis.

Criteria for Reporting

In Canada, **all active or suspected active respiratory TB cases with a history of airline travel** should be reported without delay. Reporting forms should be sent through the provincial/territorial TB program of the jurisdiction where the case is diagnosed and not directly to Tuberculosis Prevention and Control, Public Health Agency of Canada (TBPC-PHAC). Provinces and territories should report cases to TBPC-PHAC whether or not complete culture and/or drug sensitivity results or flight information are available.

¹ In exceptional cases, travel by infectious cases using non-commercial transportation such as the use of an air ambulance may be possible but requires pre-arrangements with the appropriate officials.

² World Health Organization, Geneva. *Tuberculosis and Air Travel: Guidelines for Prevention and Control*, 3rd ed., WHO/HTM/TB/2008.399. Geneva (Switzerland): World Health Organization, 2008. Available at: http://www.who.int/entity/tb/publications/2008/WHO_HTM_TB_2008.399_eng.pdf (en anglais seulement).



After reporting the case, any subsequent relevant information such as test results and/or evidence of transmission in non-airline contacts should be forwarded to TBPC-PHAC through the provincial/territorial TB program in order to determine whether further actions are needed.

Criteria for Contact Investigation

TBPC-PHAC will conduct a risk assessment for the case and a contact investigation will proceed if both of the following two criteria are met³:

1. Diagnosis/infectiousness at time of flight:

A. Smear-negative cases: The individual is diagnosed with smear-negative active respiratory TB disease that is culture positive for *M. tuberculosis* and there is documented evidence of transmission, or sufficient data are not available to indicate whether transmission occurred in non-airline contacts.

Or

B. Smear-positive cases: The individual is diagnosed with smear-positive active respiratory TB disease that is culture positive for *M. tuberculosis*.

Note: These criteria apply whether or not there is a history of cough during the flight.

AND

2. Flight duration:

A. The total flight duration was equal to or greater than eight hours. This duration includes all ground delays after boarding, flying time and ground delays after landing.

Or

B. MDR, XDR or laryngeal TB cases: In Canada, a contact investigation will proceed for flights of less than eight hours for cases of MDR, XDR and laryngeal TB if there is documented evidence of transmission, or if sufficient data are not available to indicate whether transmission occurred in non-airline contacts.

Non-infectious at time of flight

A contact investigation will not proceed if the case was considered non-infectious at the time of the flight. A case is considered non-infectious if they did not require airborne isolation and therefore met the following criteria⁴:

For non-MDR-TB and non-XDR-TB cases

³ For cases that do not fit these criteria, a case conference will be held with the reporting jurisdiction to determine the most appropriate course of action.

⁴ The criteria to determine non-infectiousness are based on the *Canadian Tuberculosis Standards*, 6th edition, page 329 (<http://www.phac-aspc.gc.ca/tbpc-latb/pubs/tbstand07-eng.php>).



Patients with smear-negative, culture-positive respiratory TB:

Airborne isolation may be discontinued after at least two weeks of multidrug therapy based on the known antibiotic sensitivity of the patient's organism and clinical evidence of improvement (consult treating physician as necessary).

Patients with smear-positive TB:

Airborne isolation can be discontinued when three consecutive sputum smears are negative. These can be taken 8-24 hours apart, and at least one of them should be taken in the early morning. In addition, there should be clinical evidence of improvement (consult treating physician as necessary) and evidence of adherence to at least two weeks of multidrug therapy based on the known antibiotic sensitivity of the patient's organism.

For active MDR-TB and XDR-TB cases

Airborne isolation can be discontinued when any three consecutive sputum cultures are negative after six weeks of incubation.

Definition of infectious period prior to flight: In addition to the above criteria, a contact investigation will proceed only if the flight(s) occurred on or after the date of symptom onset or the first positive finding consistent with TB disease (e.g. abnormal chest x-ray). However, for some cases it may be necessary to extend the infectious period to include dates prior to the date of symptom onset or the first positive finding. Such a decision would only be made following a case conference with all involved parties that would be convened when one or both of the following two criteria were met:

1. The case is considered highly infectious (e.g., sputum smear AFB 3+ or 4+, evidence of cavities on CXR or laryngeal involvement).
2. The reporting jurisdiction has decided to extend contact tracing of non-airline contacts prior to the date of symptom onset or the first positive finding based on documented evidence of transmission or other available information.

Time elapsed after the flight until reporting to TBPC-PHAC: The WHO guidelines recommend conducting a contact investigation only if the flight occurred within the three months prior to the case being reported to public health. However, TBPC-PHAC will proceed regardless of the duration of time from the flight to the report being received for two reasons:

1. Airline records of passenger contact information are often still available after three months.
2. The possible risk to fellow passengers of having been infected and later developing active TB exists regardless of the time since the flight and notification should proceed if possible.

Airline crew: As per the revised WHO guidelines, airline crew members are no longer considered contacts of an infectious passenger unless the crew member was assigned to look after the ill passenger who had infectious TB. If the infectious case was a member of the airline crew, passengers are not considered contacts, however, fellow crew members would be considered contacts.



International and domestic flights: Though the majority of cases meeting these criteria will involve international flights, the same guidelines and procedures apply to cases on domestic flights meeting these criteria.

Pending information: In some cases, information such as culture results, drug susceptibility results and evidence of transmission in non-airline contacts may be pending at the time of the risk-assessment. For these cases, PHAC will notify the airline(s) and request that the passenger manifest and other available contact information for the specific flights be secured (not discarded) until the need for a contact investigation is determined.

Completing the Reporting Form

Section 1: Flight Information

Complete this section to reflect the flight(s) taken from origin to destination. Also list all alternate forms of public transportation (bus, train) used between flights.

Flight duration- Provide the best estimate of the total duration of the flight including all onboard delays before and after the flight. Confirmation of flight duration will be made by TBPC-PHAC.

Activity during flight- Indicate the case's activity during the flight such as whether the case remained seated or visited with other passengers.

Other passengers already assessed- Indicate whether there were other passengers on the same flight(s) who are already being assessed by public health (i.e., family members, traveling companions). TBPC-PHAC will contact the reporting jurisdiction to confirm the names of these persons and not send an additional letter of notification for these persons.

Section 2: Case information

Complete this section in order that TBPC-PHAC can confirm that the case was on the flight(s) and to determine where the case was seated. If required by jurisdictional privacy laws, the individual's name can be withheld until the need for a contact investigation is determined (i.e. if the case is smear negative and/or all flights are less than eight hours duration and evidence related to transmission among non-airline contacts and/or drug sensitivity results are pending).

Section 3: Medical/other Information

The information in this section is used to determine the degree of infectiousness at the time of the flight and is provided to other TB control programs in jurisdictions where passengers who are named as contacts reside.

Note: For all laboratory results, the date provided should refer to the date the specimen was collected, not the date the results were reported/received.

Smear results: The date the specimen was taken and the results of smear microscopy performed closest to the date of the flight should be reported. If the case is smear-negative, please confirm that this result is based upon three negative sputum samples.



Direct molecular detection results: The results from molecular techniques for the direct detection of *M. tuberculosis* complex, such as polymerase chain reaction (PCR), transcription mediated amplification (TMA), nucleic acid amplification tests (NAT) and other molecular detection assays.

Sensitivity Results: All available drug sensitivity results should be reported including details such as resistance to one level of an antibiotic and sensitivity to another level (for isoniazid for example).

Are federal officials considered contacts of this case?: Are federal officials including Canadian Border Service Agency (CBSA), Citizenship, Immigration Canada (CIC), RCMP officials or Quarantine Officers considered contacts of the case and in need of medical assessment? This decision should be based on how other contacts of the case, with similar duration and type of contact, are being followed:

- determine the duration and type of contact with federal officials (whether the contact was longer than usual) at the airport
- if other contacts (in the community) with the same duration and type of exposure are being assessed, then circle 'Yes', otherwise circle 'No'.

If any such officials are considered contacts, the Workplace Health and Public Safety Program of Health Canada will be notified in order to arrange appropriate follow-up.

Has the case returned to their country of permanent residence?

This information will be used to indicate the need for additional actions in collaboration with the province, territory or country where the case currently resides in order to ensure that the individual with TB is deemed non-infectious prior to attempting further travel.

Is the case considered at risk for other travel while still infectious?

Is the case likely to undertake more travel while still infectious, for example take another airline flight of any duration? Factors to consider include:

- is the case in airborne isolation?
- does the case hold an airline ticket with a date for travel when likely to still be infectious and refuses to cancel or reschedule the flight?
- does the case express intent to travel regardless of being advised not to?
- is there evidence of non-adherence to requests/orders?

If it is determined that the case may attempt to travel while still infectious, TBPC-PHAC will work with their provincial, territorial, international, Quarantine Services and airline partners to prevent travel by the case until he/she is deemed to be non-infectious.

Section 4: Reporting information

Complete this section to indicate who completed the reporting form. Staff at TBPC-PHAC will call to confirm or obtain additional information about the case if necessary.