

Flight Investigations and the Do Not Board List

Global travel is more accessible to more people than ever before, posing a risk that communicable diseases such as tuberculosis (TB) may be spread by infectious travelers. This article describes what public health professionals should do when:

- It is determined that a passenger had infectious TB at the time they traveled by air; and
- They wish to prevent individuals with infectious TB from flying.

Flight Investigations

An article in the Morbidity and Mortality Weekly Report (MMWR) dated Aug. 3, 2012, disclosed that the Centers for Disease Control and Prevention (CDC) receives about 125 reports per year of individuals arriving in the U.S. with active TB. Most of these travelers arrive on commercial flights.

The overall risk of being infected in-flight with *M. Tuberculosis* bacteria is extremely low. There have been several investigations of possible in-flight transmission of TB, and two identified instances in which passengers subsequently had TB skin test conversions. To date, however, no confirmed cases of active TB have been linked to in-flight transmission. In any environment, the probability of someone with contagious TB infecting others is a function of how infectious the person is, the environment in which exposure occurs, the duration of exposure, the susceptibility of others to infection and potentially the virulence of the mycobacteria.

An airplane cabin is an enclosed environment where passengers are seated in close proximity. Fresh air is brought in both while the plane is on the ground and when it is in the air. In-flight, up to 50 percent of the cabin air is recirculated, and, in newer aircraft, it typically passes through multiple high-efficiency particulate air (HEPA) filters. Air typically flows from the top of the cabin to the bottom in small sections, with limited movement lengthwise from the front of the plane to the back. Essentially, the passengers deemed at highest risk of exposure to *mycobacterium TB* in-flight are those who are seated in the same row as, two rows in front of and two rows in back of the passenger with infectious TB on flights lasting eight hours or more.

If an individual is diagnosed in the United States with an active case of TB, has traveled by air during the past three months on a flight lasting eight hours or more and was likely infectious while traveling, the following should occur:

- The diagnosing physician should immediately notify either the local state health center (SHC) or the county or municipal health department about the case.
- The SHC or local health department should then notify the TB Program at the Pa. Department of Health (PADOH) in Harrisburg.
- The TB Program then contacts CDC's Division of Global Migration and Quarantine (DGMQ) office at the Philadelphia International airport.
- DGMQ will then schedule a teleconference with the state and local public health personnel familiar with the case to review the facts and determine next steps.

If necessary, DGMQ will work with U.S. Customs and Border Protection (CBP) and the airline to obtain contact information for passengers seated in the same row as, two rows in front of and two rows behind the infectious TB case.

- CDC/DGMQ will forward the passenger contact information to the appropriate state health departments for follow-up investigation to determine if the contact is infected with or has an active case of TB.
- The results of local follow-up investigations are then be reported back by the responsible SHC or local health department to the CDC/DGMQ.

The Do Not Board List

Each year, there are a few instances in Pennsylvania in which an individual with infectious TB has travel plans he or she is reluctant to cancel or reschedule. Because someone with infectious TB poses a public health risk, public health officials are empowered to request that the individual be placed on the Do Not Board list, which effectively restricts the infectious person from boarding a flight. Airlines are prompted by the Transportation Security Administration (TSA) to not issue a boarding pass to anyone on the Do Not Board list for any commercial domestic or international flight into, out of or within the U.S.

The State Department has the authority to flag the visas and passports of infectious travelers via border lookout notices issued via CBP. Such notices are routinely issued for individuals added to the Do Not Board list.

The following conditions must be present for someone with TB to be placed on the Do Not Board list:

- The person is known or believed to be contagious and would constitute a serious health threat to others if allowed to board a flight;
- The person is not aware of his or her diagnosis, or has been told about the diagnosis and is likely to be nonadherent with treatment; and
- The person is likely to try to board a commercial aircraft.

If a TB patient under your care meets the above criteria, contact the TB Central Office immediately. The TB program will then schedule a conference call with the DGMQ office at the Philadelphia airport to review the facts of the case and determine whether the individual meets the criteria for being added to the Do Not Board list.

Once the TB patient is no longer contagious, the local SHC or county or municipal health department with responsibility for the patient's care must notify the TB Central Office, which will then notify the DGMQ. For a TB patient to be permitted to board a commercial flight, the following criteria must be met:

Condition	Criteria
AFB smear positive OR chest x-ray w/cavity	<ul style="list-style-type: none"> • Treatment with an appropriate drug regimen for ≥ 2 weeks, and • Three negative smear results
MDR or extensively drug-resistant (XDR) TB	<ul style="list-style-type: none"> • Treatment for ≥ 4 weeks, and • Currently on appropriate treatment, and • Three negative smear results, and • Two or more negative culture results after ≥ 2 weeks of treatment with no sub-sequent positive cultures