

**Tuberculosis and air travel: towards improved control**

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The first reports of tuberculosis (TB) transmission linked to air travel in the early 1990s came at a time when TB was re-emerging as a public health concern in western Europe, the United States and elsewhere. More recently, the SARS epidemic afforded much publicity to the phenomenon of airborne transmission of infection between flight passengers. While *Mycobacterium tuberculosis* is less infectious than certain microbes, such as the measles virus, TB infection following flights lasting longer than eight hours has been documented. However, no case of active disease is yet known to have resulted from such transmission.

The first edition of the World Health Organization's TB and air travel: guidelines for prevention and control, published in 1998, addressed the early reports of inflight transmission, based on the evidence available at that time [1,2]. In the second edition of the guidelines, published in 2006, the subject is presented in terms of today's public health context and proposes new approaches to international collaboration to limit risk [3]. The authors indicate how the revised International Health Regulations (IHR), coming into force in June 2007, will apply to TB. In contrast to conditions like SARS, for which each individual case must be notified, notification of TB to WHO is only required if the episode is considered an important concern to international public health. The state public health authorities may demand information on travellers' itineraries and seating arrangements. Travellers may be required to undergo medical examination before or after a trip, and may be refused travel or entry into a country if they decline.

The document also discusses on board ventilation and air quality. It is now clear that, with the ventilation systems used in most commercial airliners today, TB transmission on a plane does not depend on cabin air recirculation, but is related more to the infectiousness of the case and the duration and proximity of exposure. Therefore, patients with pulmonary TB should not take flights while they are still infectious.

The recommendations now also distinguish between cases with multidrug resistant TB: a sign of the times. The role of the public health authorities when a potentially infectious case of TB in an airline passenger is identified is now much better defined. Importantly, the responsibility for tracing potential contacts and advising them on screening is now placed on the health authorities rather than the airline company. Airline companies are expected to supply passenger address and contact details to the health authorities to permit trace backs. However, airline records are often unsatisfactory and finding passengers may be a problem. Measures are being taken to rectify this, requiring air companies to register basic contact information for all passengers. This should improve the timeliness and completeness of contact tracing. The revised draft letter from the health authority notifying the airline medical consultant of a confirmed case is concise and to the point. The contacts of the index patient to be prioritised for screening are now better defined.

Notwithstanding the usefulness of the WHO guidelines, it is conceivable that the public health practitioner will still face certain situations where he or she will need to exercise discretion and judgement. One example involves advising neighbouring passengers of highly infectious cases on flights lasting less than eight hours. Even if evidence of transmission of TB is only limited to long distance flights, it is wise to prohibit all air travel to passengers with infectious TB. Physicians are therefore encouraged to inform patients to observe this rule, and to notify health authorities if they suspect that passengers are likely to fly while infectious.

When there are contacts who live outside the country first notified, the revised IHR would only apply in exceptional circumstances. The public health authorities of the country first alerted are expected to inform their counterparts in the countries where other contacts are resident. In

Europe, this practice is ongoing, and at times the European TB surveillance network (EuroTB) has acted as an intermediary for this purpose. A list of national TB authorities is maintained online (<http://www.eurotb.org>). The European Union's Early Warning and Response System (EWRS) has been used in the past to alert users, giving details of the implicated flight without indicating the patient's identity. However, this should not take the place of sharing passenger contact details between national health authorities.

**\*Correction.** We omitted the name of the second author, K Fernandez de la Hoz, when this article was published on 3 August 2006. This was corrected on 23 August 2006. Eurosurveillance editorial office, 23 August 2006.

#### References:

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