

WHO PUBLISHES THE THIRD EDITION OF GUIDELINES FOR THE PREVENTION AND CONTROL OF AIR-TRAVEL-ASSOCIATED TUBERCULOSIS

I Abubakar¹, K Fernandez de La Hoz (Karoline.FernandezdeLahoz@ecdc.europa.eu)²

1. TB Section, Respiratory Diseases Department, Health Protection Agency Centre for Infections, London, United Kingdom

2. Surveillance Unit, European Centre for Disease Prevention and Control, Stockholm, Sweden

Air travel has increased over the last few decades resulting in greater risk of the spread of infectious diseases carried by infectious travellers. The risk of transmission of pathogens is particularly important for airborne organisms raising concern among public health agencies and the public. Despite limited research on the risk of tuberculosis associated with air travel, several reports have published evidence of the transmission of tuberculosis infection, including multidrug-resistant tuberculosis (MDR-TB) [1, 2].

Recent developments, including the revision of International Health Regulations (IHR) [3], the emergence of extensively drug-resistant (XDR) TB [4,5] and more frequent reports of incidents involving air passengers with infectious tuberculosis [6] have highlighted the need for updated international guidelines.

The WHO has published the third edition of its guidelines "Tuberculosis and air travel: Guidelines for prevention and control" (http://www.who.int/tb/publications/2008/WHO_HTM_TB_2008.399_eng.pdf). It is intended that implementing the recommendations will help to reduce the international spread of TB and decrease the risk of infection among individual travellers. These evidence based guidelines provide greater clarity in the definition of the infectiousness of index cases in the context of air travel. This is categorised as: infectious TB, potentially infectious and non-infectious TB, based on sputum-smear status and culture results, in order to allow a better description of control measures to be taken. Further action is recommended for infectious TB cases, while for potentially infectious TB cases additional information (e.g. results of drug sensitivity tests) should be requested to conduct a risk assessment and determine whether a contact investigation should be considered. No further investigation is required for non-infectious TB cases. For action at national level, national public health authorities may modify the definitions based on more specific criteria in accordance with their national guidelines.

The WHO developed the guidelines in collaboration with experts from the European Centre for Disease Control, several national public health authorities and international experts in the prevention and control of TB and travel medicine.

The roles and responsibilities of the agencies involved in the risk assessment and risk management are defined in more detail than in the previous editions published in 1998 and 2006 [7,8]. The guidelines also outline the procedures involved in the follow-up of contacts of infectious cases and allow greater flexibility for national and local public bodies to follow national recommendations. The full recommendations are outlined in Box 1.

The guidelines also acknowledge several areas where the evidence base is poor and recommend further research to improve our understanding of transmission of tuberculosis during air travel and the effectiveness of contact investigation in this setting.

Acknowledgements

The following experts contributed the third edition of guidelines for the prevention and control of air travel associated tuberculosis: Dr Ibrahim Abubakar, Dr Francisco Averhoff, Dr Ann Buff, Dr Jacques Chemardin, Dr Nigel Dowdall, Dr Edward Ellis, Dr Anthony Evans, Dr Karoline Fernandez de la Hoz, Dr José Figueroa, Dr Paolo Guglielmetti, Dr Peter Helbling, Dr Vincent Houdry, Dr Jean-Paul Klein, Dr Henry Kong, Dr Katrin Leitmeyer, Dr Philip LoBue, Dr Karen Marienau, Dr Marie-Claire Paty, Mr Derek Scholten, Prof Robert Steffen, Dr Claude Thibeault, Dr Stéphane Veyrat, Dr Jane Zuckerman. WHO Secretariat: Dr Léopold Blanc, Dr Pierpaolo de Colombani, Dr Max Hardiman, Dr Ernesto Jaramillo, Ms Rikka Koskenmaki, Dr Ota Masaka, Dr Daniel Menucci, Dr Paul Nunn, Dr Salah Ottmani, Mr Bruce Plotkin, Dr Mario Raviglione, Dr Kathrin Thomas, Dr Pieter Van Maaren, Dr Risards Zaleskis. Managing Editor: Dr Lindsay Martinez.

References

1. Miller MA, Valway SE, Onorato IM. Tuberculosis risk after exposure on airplanes. *Tuber Lung Dis* 1996;77.
2. Kenyon TA, Valway SE, Ihle WW, Onorato IM, Castro KG. Transmission of multidrug-resistant *Mycobacterium tuberculosis* during a long airplane flight. *NEJM* 1996;334:933-8
3. World Health Organization. International Health Regulations (2005). Geneva second edition 2008. Available from http://www.who.int/gb/ebwha/pdf_files/WHA58/WHA58_3-en.pdf.
4. Gandhi NR, MoL A, Sturm AW, Pawinski R, Govender T, Lalloo U, et al. Extensively drug-resistant tuberculosis as a cause of death in patients co-infected with tuberculosis and HIV in a rural area of South Africa. *Lancet* 2006;368:1575-1580.
5. World Health Organization. Extensively drug-resistant tuberculosis (XDR-TB): recommendations for prevention and control. *Weekly Epidemiol Record* 2006;81:430-2
6. Chemardin J, Paty MC, Renard-Dubois S, Veziris N, Antoine D. Contact tracing of passengers exposed to an extensively drug-resistant tuberculosis case during an air flight from Beirut to Paris, October 2006. *Euro Surveill.* 2007;12:E071206
7. World Health Organization. TB and Air Travel: Guidelines for Prevention and Control. Geneva 1998. First Edition. Available from http://whqlibdoc.who.int/hq/1998/WHO_TB_98.256.pdf
8. World Health Organization. TB and Air Travel: Guidelines for Prevention and Control. Geneva 2006. Second Edition. Available from http://whqlibdoc.who.int/hq/2006/WHO_HTM_TB_2006.363_eng.pdf.

This article was published on 5 June 2008.

Citation style for this article: Abubakar I, Fernandez de la Hoz K. WHO publishes the third edition of guidelines for the prevention and control of air-travel-associated tuberculosis. *Euro Surveill.* 2008;13(23):pii=18898. Available online: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=18898>

Box 1

Specific recommendations on the third edition of the air travel guidelines

For travellers
Pre-travel
<ul style="list-style-type: none">• People with infectious or potentially infectious TB should postpone all travel by commercial air transportation* of any flight duration until they become non-infectious.
For physicians
Pre-travel
<ul style="list-style-type: none">• Physicians should inform all infectious and potentially infectious TB patients that they must not travel by air on any commercial flight of any duration until they have completed at least 2 weeks of adequate treatment and they are sputum smear negative on at least two occasions (additional steps are required for MDR-TB and XDR-TB, see next recommendation).• Physicians should inform all MDR-TB and XDR-TB patients that they must not travel by any commercial flight – under any circumstances or on a flight of any duration – until they are proven to be non-infectious (i.e. two consecutive negative sputum-culture results).• Physicians should immediately inform the relevant public health authority when they are aware that an infectious or potentially infectious TB patient intends to travel against medical advice.• Physicians should immediately inform the public health authority when they are aware that an infectious or potentially infectious TB patient may have exceptional circumstances requiring commercial air travel.
Post-travel
<ul style="list-style-type: none">• Physicians should immediately inform the public health authority when an infectious or potentially infectious TB patient has a history of commercial air travel within the previous 3 months.
For public health authorities (see also requirements under IHR)
Pre-travel
<ul style="list-style-type: none">• Public health authorities who are aware that a person with infectious TB is planning to travel via a commercial air carrier should inform the concerned airline and request that boarding be denied.• If an infectious or potentially infectious TB patient has exceptional circumstances that may require commercial air travel, public health authorities should ensure that the airline(s) involved and the national public health authorities at departure, arrival and any transit points have approved the commercial air travel and the procedures for travel.
Post-travel
<ul style="list-style-type: none">• The public health authority should promptly contact the airline when an infectious or potentially infectious TB patient is known to have travelled on a commercial flight that may have been of 8 hours duration or longer within the preceding 3 months in order to obtain the information required for the initial risk assessment (i.e. confirm that the passenger was on the flight and the total flight duration).• The public health authority of the country of diagnosis should carry out a risk assessment based on the specific conditions of the case. If the index case is considered to be infectious or potentially infectious, the public health authorities of all countries involved should be informed (i.e. countries where the flight(s) departed and landed).• If a contact investigation involves more than one country, national public health authorities of the involved countries should agree on their respective roles and responsibilities (including who will request the passenger manifests from airlines). International bodies such as WHO, the EC, ECDC, or others may provide assistance if requested.• The national public health authority that obtained the passenger information from the airline should contact counterpart public health authorities in the appropriate countries and provide them with the relevant information on the source case and the available contact information of all travellers identified as potentially exposed (i.e. those passengers seated in the same row and in the two rows in front of and behind the index case) in their jurisdiction.• Public health authorities may follow national policies and guidelines regarding TB contact investigation involving potentially exposed travellers in their jurisdiction, in accordance with requirements under the IHR (see also Annex 3 of the guidelines).• Public health authorities should be in communication with their National IHR Focal Point concerning any event that may involve the IHR, including events for which international contact tracing may be initiated, for assessment of any action that may be required under the IHR and support in facilitating communication.• National and international public health authorities are encouraged to collaborate on research concerning TB and air travel.
For airline companies
Pre-travel
<ul style="list-style-type: none">• Airline companies should deny boarding to any person who is known to have infectious or potentially infectious TB as informed by the relevant public health authority.• Airline companies should, in the case of ground delays that last for 30 minutes or longer with passengers on board, ensure that the ventilation system is in operation.• Airline companies should ensure that all their aircraft which recirculate the cabin air are fitted with a filtration system. New aircraft should be fitted with 99.97% efficiency HEPA filters, or an alternative of at least this level of efficiency. The filtration system should be maintained in accordance with the recommendations of the filter manufacturer.• Airline companies should ensure that cabin crews receive adequate training on potential exposure to communicable diseases, in first aid, and in applying universal precautions when there may be exposure to body fluids.• Airline companies should ensure that there are adequate emergency medical supplies aboard all aircraft (including gloves, surgical masks, biohazard disposal bags and disinfectant).
Post-travel
<ul style="list-style-type: none">• Airline companies should cooperate with national public health authorities in providing as quickly as possible all available contact information requested for contact-tracing of travellers, in accordance with applicable legal requirements including the IHR.

* excluding specially designated aircraft - air ambulance