

WHO guidelines on tuberculosis infection prevention and control

2019 update

THE
END TB
STRATEGY



World Health
Organization

WHO guidelines on tuberculosis infection prevention and control

2019 update

WHO guidelines on tuberculosis infection prevention and control, 2019 update.

ISBN 978-92-4-155051-2

© World Health Organization 2019

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

Under the terms of this licence, you may copy, redistribute and adapt the work for noncommercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services. The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: "This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition".

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization.

Suggested citation. WHO guidelines on tuberculosis infection prevention and control, 2019 update, Geneva: World Health Organization; 2019. License: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at <http://apps.who.int/iris>.

Sales, rights and licensing. To purchase WHO publications, see <http://apps.who.int/bookorders>. To submit requests for commercial use and queries on rights and licensing, see <http://www.who.int/about/licensing>.

Third-party materials. If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

General disclaimers. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO be liable for damages arising from its use.

Design by Inis Communication

WHO/CDS/TB/2019.1

CONTENTS

ABBREVIATIONS.....	IV
GLOSSARY.....	V
ACKNOWLEDGEMENTS.....	XII
DECLARATIONS OF INTEREST.....	XIV
HOW TO USE THESE GUIDELINES.....	XV
EXECUTIVE SUMMARY.....	1
Guideline development methods.....	2
Summary of recommendations.....	3
1. INTRODUCTION.....	4
Scope of the guidelines.....	5
Objective.....	5
Target audience.....	5
2. RECOMMENDATIONS.....	10
2.1. Administrative controls.....	10
2.2. Environmental controls.....	21
2.3 Respiratory protection.....	27
3. CORE COMPONENTS OF IPC PROGRAMMES.....	29
4. METHODS.....	33
4.1. Preparation for evidence assessment.....	33
4.2. Evidence retrieval, quality assessment and grading of the evidence.....	34
4.3. Formulation of the recommendations.....	35
4.4. Guideline Development Group decision-making.....	35
4.5. Guideline preparation, peer-review and content presentation.....	35
5. RESEARCH PRIORITIES.....	36
6. PUBLICATION, DISSEMINATION AND IMPLEMENTATION.....	38
REFERENCES.....	39
ANNEXES.....	45
Annex 1 – List of participants to the Guideline Development Group meeting.....	45
Annex 2 – Summary of declarations of interest and management.....	47
Annex 3 – Risk of acquiring tuberculosis infection, progression to active disease and the effect of treatment on infectiousness.....	50

ONLINE ANNEXES

Annex 4 – GRADE evidence summary tables

Annex 5 – GRADE evidence-to-decision tables

Annex 6 – Results of the systematic reviews used to inform the development
of these guidelines

Online annexes can be accessed at: [https://www.who.int/tb/publications/2019/
guidelines-tuberculosis-infection-prevention-2019/en/](https://www.who.int/tb/publications/2019/guidelines-tuberculosis-infection-prevention-2019/en/)

ABBREVIATIONS

ACH	air changes per hour
AMR	antimicrobial resistance
CI	confidence interval
DOI	declaration of interest
DR-TB	drug-resistant TB
DST	drug-susceptibility testing
GNI	gross national income
GRADE	Grading of Recommendations Assessment, Development and Evaluation
GUV	germicidal ultraviolet light
HAI	health care-associated infection
HEPA filter	high-efficiency particulate air filter
HIV	human immunodeficiency virus
IEC	information, education and communication
IGRA	interferon-gamma release assay
IPC	infection prevention and control
IRR	incidence rate ratio
LTBI	latent tuberculosis infection
<i>M. tuberculosis</i>	<i>Mycobacterium tuberculosis</i>
MDR-TB	multidrug-resistant TB
OR	odds ratio
PICO	population, intervention, comparator and outcome
SDG	Sustainable Development Goal
RR	rate ratio
TB	tuberculosis
TST	tuberculin skin test
USAID	United States Agency for International Development
UVC	ultraviolet light C
UVGI	ultraviolet germicidal irradiation
WHO	World Health Organization

GLOSSARY

Term	Description
General	
Antimicrobial resistance (AMR)	The loss of effectiveness of any anti-infective medicine, including antiviral, antifungal, antibacterial and antiparasitic medicines.
Grading of Recommendations Assessment, Development and Evaluation (GRADE)	An approach to grading in health care that aims to overcome the shortcomings of current grading systems. For further information, see the GRADE website. ¹
General hospital	A health care institution providing medical or surgical (or both) treatment and nursing care for sick or injured people.
General population	All individuals, without reference to any specific characteristic.
Health care-associated infection (HAI)	An infection occurring in a patient during the process of care in a hospital or other health care facility, which was not present or incubating at the time of admission. HAIs can also appear after discharge. They represent the most frequent adverse event associated with patient care.
Health workers	All people engaged in actions whose primary intent is to enhance health (as defined in Chapter 1 of <i>The world health report 2006 – working together for health</i> ²).
Household contact of TB patient	An individual who is residing or who had resided in the same household as the infectious TB patient.
Infectiousness	Probability of tuberculosis (TB) transmission from an individual with TB disease (usually pulmonary TB) to a susceptible individual through aerosols with droplet nuclei containing viable <i>Mycobacterium tuberculosis</i> while, for example, coughing, sneezing or talking.
Latent TB infection (LTBI) incidence	The number of new persons identified with LTBI within a specified period of time.
LTBI prevalence	The number of persons identified with LTBI at a given point in time.
Multimodal strategy	Several elements or components (at least three, and usually five ³) implemented in an integrated way, with the aim of improving an outcome and changing behaviour. Such a strategy includes tools (e.g. bundles and checklists) developed by multidisciplinary teams that take into account local conditions. The five most common components are system change

1 See <http://www.gradeworkinggroup.org>.

2 Health workers, in: *The world health report*. Geneva: World Health Organization; 2006 (https://www.who.int/whr/2006/06_chap1_en.pdf, accessed 18 December 2018).

3 Evidence-based care bundles. Institute for Healthcare Improvement; (<http://www.ihl.org/topics/bundles/Pages/default.aspx>, accessed 18 December 2018).

Term	Description
	(availability of the appropriate infrastructure and supplies to enable infection prevention and control [IPC] good practices); education and training of health workers and key players (e.g. managers); monitoring of infrastructure, practices, processes and outcomes, and provision of data feedback; reminders or communications in the workplace; and culture change within the establishment or strengthening of a safety climate. ¹
TB incidence	The number of new and recurrent (relapse) episodes of TB (all forms) occurring in a given year. ²
TB prevalence	The number of TB cases (all forms) at a given point in time. ²
IPC interventions	
Hierarchy of infection prevention and control measures	TB prevention and control consists of a combination of measures designed to minimize the risk of <i>M. tuberculosis</i> transmission within populations. A three-level hierarchy of controls comprising administrative controls, environmental controls and respiratory protection has been shown to reduce and prevent the risk of transmission and exposure to <i>M. tuberculosis</i> .
Administrative controls	Administrative controls are the first and most important level of the hierarchy. These are management measures that are intended to reduce the risk of exposure to persons with infectious TB.
Environmental controls	The second level of the hierarchy is the use of environmental controls to prevent the spread of infectious droplet nuclei and reduce their concentration.
Respiratory protection controls	The third level of the hierarchy is the use of respiratory protection control. It consists of the use of personal protective equipment in situations that pose a high risk of exposure to <i>M. tuberculosis</i> .
Mechanical ventilation	Ventilation created using an air supply or an exhaust fan (or both), to force air into or out of a room.
Mixed-mode ventilation	A ventilation system that combines both mechanical and natural ventilation, providing the opportunity to choose the most

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_28562

