

# Towards universal access to diagnosis and treatment of multidrug-resistant and extensively drug-resistant tuberculosis by 2015

WHO PROGRESS REPORT 2011



World Health  
Organization



# Towards universal access to diagnosis and treatment of multidrug-resistant and extensively drug-resistant tuberculosis by 2015

WHO PROGRESS REPORT 2011



**World Health  
Organization**

WHO Library Cataloguing-in-Publication Data

Towards universal access to diagnosis and treatment of multidrug-resistant and extensively drug-resistant tuberculosis by 2015: WHO progress report 2011.

WHO/HTM/TB/2011.3

1.Tuberculosis, Multi-drug-resistant - therapy. 2.Tuberculosis, Multi-drug-resistant - diagnosis. 3.Drug resistance, Bacterial. 4.Antitubercular agents. 5.Bacteriological techniques. 6.Program evaluation. I.World Health Organization.

ISBN 978 92 4 150133 0

(NLM classification: WF 360)

© **World Health Organization 2011**

All rights reserved. Publications of the World Health Organization can be obtained from WHO Press, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland (tel.: +41 22 791 3264; fax: +41 22 791 4857; e-mail: [bookorders@who.int](mailto:bookorders@who.int)). Requests for permission to reproduce or translate WHO publications – whether for sale or for noncommercial distribution – should be addressed to WHO Press, at the above address (fax: +41 22 791 4806; e-mail: [permissions@who.int](mailto:permissions@who.int)).

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 the World Health Organization 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 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 the World Health Organization 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 the World Health Organization 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 the World Health Organization be liable for damages arising from its use.

Cover photos (from top left): 1=Courtesy of FIND, 2–4=Courtesy of Dominic Chavez/WHO, 5=Jad Davenport, © WHO/TBP/Davenport, 6 (pills)= Courtesy of Dominic Chavez/WHO

Editing and design: Inís Communication – [www.iniscommunication.com](http://www.iniscommunication.com)

Printed in France

WHO/HTM/TB/2011.3

# Contents

Contents	iii
Acknowledgements	iv
Abbreviations	v
Glossary	vi
Executive summary	1
Introduction	4
<b>PART 1: Diagnosis, treatment and care of people affected by M/XDR-TB</b>	<b>7</b>
1.1 Planning and financing universal access to MDR-TB diagnosis, care and treatment	7
1.2 Expanding diagnostic capacity	11
1.3 Improving surveillance of drug-resistant TB	14
1.4 Ensuring access to quality-assured anti-TB medicines	15
1.5 Updating WHO policies and guidelines to manage M/XDR-TB	16
1.6 Treating and caring for people affected by MDR-TB	18
1.7 Status of progress at country level	22
<b>PART 2: Prevention of M/XDR-TB through basic TB control</b>	<b>29</b>
2.1 Strengthening basic TB control	29
2.2 Engaging all health-care providers	29
2.3 Promoting regulated access to anti-TB medicines	32
2.4 Addressing the dual MDR-TB and HIV epidemics	33
2.5 Prioritizing tuberculosis infection control	34
<b>Annex 1: Resolution WHA62.15</b>	<b>37</b>
<b>Annex 2: Multidrug-resistant tuberculosis country profiles</b>	<b>41</b>
<b>Annex 3: Update on drug resistance surveillance data</b>	<b>97</b>
References	117

# Acknowledgements

This report was produced by a core team at the World Health Organization (WHO): Karin Bergstrom, Angelito Bravo, Daniel Chemtob, Wolfram Demmer, Monica Hannah Dias, Dennis Falzon, Jean de Dieu Iragena, Inés García Baena, Wayne van Gemert, Haileysus Getahun, Tauhidul Islam, Wieslaw Jakubowiak, Christian Lienhardt, Knut Lonnroth, Kaspars Lunte, Pierre-Yves Norval, Delphine Sculier, Lana Velebit and Matteo Zignol. All members of the core team contributed to the writing of the report.

Inés García Baena, Wieslaw Jakubowiak and Hazim Timimi were responsible for developing the country profiles and extracting data from the WHO global TB data collection system. Wolfram Demmer and Shamsiya Muzafarbekova provided valuable support; Dennis Falzon, Wayne van Gemert and Matteo Zignol were responsible for preparing the annexes on drug resistance surveillance data.

Christin Chevalley provided vital administrative support. Inés García Baena was responsible for data validation for country profiles in coordination with WHO regional and country offices; Dennis Falzon validated and analysed the data reported by countries on DOTS and MDR-TB. Ernesto Jaramillo coordinated the production of the report; development of its structure and content were guided by Paul Nunn and Diana Weil, coordinators, under the overall direction of Mario Raviglione, Director of the WHO Stop TB Department.

In addition to the core team, many staff at WHO headquarters and regional offices provided valuable input to the report. Among the colleagues listed below, we thank in particular Samiha Baghdadi, Andrei Dadu, Rafael Lopez-Olarte, Khurshid Alam Hyder, Wilfred Nkhoma and Daniel Sagebiel for their major contributions to data collection and review.

**WHO headquarters:** Karin Bergstrom, Léopold Blanc, Caroline Bogren, Angelito Bravo, Daniel Chemtob, Karen Ciceri, Wolfram Demmer, Katherine Floyd, Christopher Fitzpatrick, Inés García Baena, Christopher Gilpin, Malgorzata Grzemska, Christian Gunneberg, Jean de Dieu Iragena, Tauhidul Islam, Azizkhon Jafarov, Wieslaw Jakubowiak, Judith Mandelbaum-Schmid, Fuad Mirzayev, Paul Nunn, Andrea Pantoja, Glenn Thomas, Hazim Timimi, Mukund Uplekar, Douglas Fraser Wares and Karin Weyer.

**WHO African Region:** Adey Bogale, Mathurin Dembele, Balkissa Modibo Hama, Bah Keita, Wilfred

Nkhoma, Nicolas Nkiere Masheni, Samuel Ogiri and Kalpesh Rahevar.

**WHO Region of the Americas:** Mirtha del Granado and Rafael Lopez-Olarte.

**WHO Eastern Mediterranean Region:** Samiha Baghdadi, Salem George Barghout and Zafar Toor.

**WHO European Region:** Ana Ciobanu, Silviu Ciobanu, Andrei Dadu, Manfred Danilovits, Masoud Dara, Edita Davidavičienė, Desislava Durcheva, Abdrahmanova Elmira, Jamshid Gadoev, Gayane Ghukasyan, Tsogt Gombogaram, Jarno Habicht, Sayohat Hasanova, Iagor Kalandadze, Clara Khasanovna, Olena Kheylo, Marija Kisman, Rusudan Klimiashvili, Vaira Leimane, Vladimir Milanov, Osconbek Moldokulov, Dmitry Pashkevich, Vija Riekstina, Aiga Rurane, Valiantsin Rusovich, Raimunda Sadauskiene, Javahir Suleymanova, Emilia Tontcheva, Aigul Tursynbayeva, Gulnoz Uzakova and Risards Zaleskis.

**WHO South-East Asia Region:** Vineet Bhatia, Erwin Cooreman, Puneet Kumar Dewan, Khurshid Hyder, Eva Nathanson, Chawalit Natpratan, Ranjani Ramachandran and Sabera Sultana.

**WHO Western Pacific Region:** Graham Harrison, Cornelia Hennig, Celina Garfin, Woo-Jin Lew, Huajing Liang, YuHong Liu, Catherine Lijinsky, Huyen Khanh Pham, Daniel Sagebiel, Fabio Scano and Kitty van Weezebeek.

Development of this report would not have been possible without the collaboration of national TB control programme managers and their staff, who supplied the data for the foundation of this report. Managers and staff of sites providing MDR-TB treatment through the Green Light Committee generously provided data on treatment outcomes. The authors sincerely thank all contributors of data for their invaluable cooperation.

The authors also express their gratitude to Tim France and Aaron Andrade of *Inis Communication* for providing technical editing, design and layout of the report.

We also thank Aamir Khan, Chair of the MDR-TB Working Group of the Stop TB Partnership, and Javid Syed, TB/HIV project director, Treatment Action Group, for providing careful reviews of the report.

Development and publication of this report were supported by the generous financial contributions of the United States Agency for International Development.

# Abbreviations

<b>ADR</b> .....	adverse drug reaction	<b>M/XDR-TB</b> ...	multidrug-resistant tuberculosis (see MDR-TB) and extensively drug-resistant tuberculosis (see XDR-TB).
<b>CI</b> .....	confidence interval	<b>NRL</b> .....	national reference laboratory
<b>DMC</b> .....	designated microscopy centre	<b>NGO</b> .....	nongovernmental organization
<b>DRS</b> .....	drug resistance survey	<b>NTP</b> .....	national TB control programme (or equivalent)
<b>DST</b> .....	drug susceptibility testing	<b>PBSP</b> .....	Philippine Business for Social Progress
<b>EQA</b> .....	external quality assurance	<b>PIU</b> .....	Programme Implementation Unit (of UNDP)
<b>FDC</b> .....	fixed-dose combination	<b>PMDT</b> .....	programmatic management of drug-resistant tuberculosis
<b>FIND</b> .....	Foundation for Innovative New Diagnostics	<b>PPM</b> .....	public-private mix
<b>GDF</b> .....	Global Drug Facility	<b>PT</b> .....	proficiency testing
<b>Global Fund</b> ..	The Global Fund to Fight AIDS, Tuberculosis and Malaria	<b>RNTCP</b> .....	Revised National TB Control Programme (India)
<b>HCW</b> .....	health-care worker	<b>SLD</b> .....	second-line anti-TB drug
<b>IPT</b> .....	isoniazid preventive therapy	<b>SRL</b> .....	supranational reference laboratory
<b>IRL</b> .....	intermediate reference laboratory	<b>TB</b> .....	tuberculosis
<b>LPA</b> .....	line probe assay	<b>TDF</b> .....	Tropical Disease Foundation
<b>MDR-HBC</b> ...	high MDR-TB burden countries	<b>UNDP</b> .....	United Nations Development Programme
<b>NSA</b> .....	national strategy application	<b>UNITAID</b> .....	International facility for the purchase of diagnostics and medicines for diagnosis and treatment of HIV/AIDS, malaria and TB.
<b>IC</b> .....	infection control	<b>USAID</b> .....	United States Agency for International Development
<b>MCLA</b> .....	Ministry of Corrections and Legal Assistance (of Georgia)		
<b>MGIT</b> .....	Mycobacteria growth indicator tube		
<b>MoH</b> .....	Ministry of Health		
<b>MoJ</b> .....	Ministry of Justice		
<b>MSF</b> .....	Médecins Sans Frontières		



# Glossary

The definitions given below apply to the terms as used in this document. They may have different meanings in other contexts.

## Countries

WHO Member States

## DOTS

The internationally-recommended approach to basic TB control.

## DRS

Drug resistance survey is a discrete study measuring the proportion of drug resistance among a sample of patients representative of an entire patient population in a country or geographical area.

## DST

Drug susceptibility testing (defined as the testing of a strain of *Mycobacterium tuberculosis* for its susceptibility or resistance to one or more anti-TB drugs).

## GLC

Green Light Committee is an initiative of WHO and the Stop TB Partnership that helps countries gain access to high-quality second-line anti-TB drugs so they can provide treatment for people with multidrug-resistant tuberculosis (MDR-TB) in line with the WHO guidelines.

## MDR-TB

Multidrug-resistant tuberculosis (defined as TB caused by strains of *Mycobacterium tuberculosis* that are resistant to at least isoniazid and rifampicin).

## New case

A newly registered episode of TB in a patient who, in response to direct questioning, denies having had any prior anti-TB treatment (for up to one month), and in countries where adequate documentation is available, for whom there is no evidence of such history.

## PPM

Public-private mix is a comprehensive approach for systematic involvement of all relevant health-care providers in TB control to promote the use of international standards for TB care and achieve national and global TB control targets.

## Previously treated case

A newly registered episode of TB in a patient who, in response to direct questioning admits having been treated for TB for one month or more, or, in countries where adequate documentation is available, there is evidence of such history. Chemoprophylaxis should not be considered treatment for TB.

## Relapse case

A patient previously treated for TB who was declared cured or successfully completed treatment, and is again diagnosed with bacteriologically positive (smear or culture) TB.

## XDR-TB

Extensively drug-resistant tuberculosis (defined as MDR-TB plus resistance to a fluoroquinolone and at least one second-line injectable agent: amikacin, kanamycin and/or capreomycin).

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\\_28792](https://www.yunbaogao.cn/report/index/report?reportId=5_28792)

