

Olufunmilayo Lesi and Marco Antonio De Avila Vitoria contributed to the update of Section 8.4 related to hepatitis C virus (HCV) and DR-TB treatment.

Annabel Baddeley contributed to the update of sections related to TB treatment in patients with HIV.

Yasir Waheed, Abdul Ghafoor and Sobia Faisal contributed to the update of the section on management of adverse events (AEs) according to the AE severity grading given in Annex 2. Annemieke Brands, Tiziana Masini, Sabine Verkuijl and Kerri Viney contributed to the update of Annex 4 on weight-based dosing of TB medicines and the review of sections 3, 4, 5 and Annex 2. The external review group comprised of Anthony Garcia-Prats, Lorenzo Guglielmetti, Riziki Kisonga, Alberto Matteelli, Michael Rich, Maria Rodriguez, Rupak Singla and Fraser Wares.

The development of this chapter was funded by grants provided to WHO by the Unitaid.

2022 update:

The 2022 update of the operational handbook DR-TB chapter was prepared by Fuad Mirzayev, Medea Gegia and Linh Nguyen under the overall direction of Matteo Zignol and Tereza Kasaeva.

The World Health Organization Global Tuberculosis (TB) Programme (WHO/MTB) gratefully acknowledges the contributions provided by Tasnim Hasan (The Sydney University, Australia), Jennifer Hughes (Desmond Tutu TB Center, South Africa) and Ignacio Monedero-Recuero (International DR-TB and TB-HIV consultant, Spain) for developing and updating Chapters 4, 5 and 6; and Annexes 1, 2 and 4. Contributions and inputs were also provided by colleagues from WHO/MTB: Nazir Ismail and Alexei Korobitsyn for Section 3.1; and Annemieke Brands, Tiziana Masini, Sabine Verkuijl and Kerri Viney for Annexes 1 and 4. WHO/MTB gratefully acknowledges the contributions of all and the external reviewers who were involved in reviewing and providing inputs for the operational handbook.

The external review group comprised of Francesca Conradie (University of the Witwatersrand, South Africa), Fernanda da Costa (National Tuberculosis Programme, Brazil), Anthony Garcia-Prats (University of Wisconsin, United States of America), Lorenzo Guglielmetti (MSF, France), Muhammad Amir Khan (Association for Social Development, Pakistan), Riziki Kisonga (NTP, United Republic of Tanzania), Mamel Quelapio (KNCV Tuberculosis Foundation, Philippines), Michael Rich (Partners in Health, United States of America), Maria Rodriguez (NTP, Dominican Republic), Rupak

Singla (National Institute of TB & Respiratory diseases, India), Zarir Udwadia (Hinduja Hospital, India) and Fraser Wares (KNCV Tuberculosis Foundation, Netherlands).

This update was funded by grants provided to WHO by the United States Agency for International Development.

Chapter 3. Tuberculosis care and support

This operational handbook chapter was prepared and coordinated by Linh Nguyen and Fuad Mirzayev, with input from Ernesto Jaramillo and Matteo Zignol, and under the overall direction of Tereza Kasaeva, Director, WHO Global Tuberculosis Programme. The WHO Global Tuberculosis Programme gratefully acknowledges the contributions of all experts involved in the production of the latest updates of the WHO guidelines chapter on tuberculosis care and support, on which this handbook chapter is based, as well as other contributors listed below.

Experts who contributed to the drafting of the handbook chapter include the following:

Elizabeth Harausz drafted Section 1 (Introduction), Section 3 on care and support interventions to enable TB treatment adherence, including material support and companionship support, treatment support, selecting an optimal treatment plan and a suitable package of care and support for a patient (Sections 3.1.3, 3.1.4, 3.2.1 and 3.3), and Sections 5.1, 5.3 and 5.4 on models of care for TB services.

Asma Humayun drafted Section 2 on people-centred care, Section 3.1 on social support, including introduction, information and educational support, psychological and emotional support (sections 3.1.1 and 3.1.2), and Section 4 on health education and counselling,

Dennis Falzon drafted Section 3.2.2 on digital health technologies.

Eric Krakauer drafted Section 6 on palliative care and provided input to Section 4.7.2 on counselling on palliative care.

Kerri Viney contributed to adapting Section 5.2 on decentralized and integrated family-centred models of TB care for children and adolescents from the chapter on models of TB care for children and adolescents in the WHO operational handbook on tuberculosis. Module 5: management of tuberculosis in children and adolescents, which was originally written by Moorine Sekkade (National TB and Leprosy Programme, Uganda), with contributions from Annemieke Brands, Monica Diaz, Dennis Falzon, Ernesto Jaramillo, Farai Mavhunga, Liana Oganezova, Sabine Verkuijl and Kerri Viney; and Section 5.3 on models of service delivery for people with TB, HIV and comorbidities from a respective chapter in the WHO Framework for Collaborative Action on TB and

Comorbidities, which was written by Annabel Baddeley and Anna Carlqvist with contributions from Kerri Viney and Farai Mavhunga.

Peer reviewers of this chapter include: Anurag Bhargava (Yenepoya Medical College Hospital, Mangalore, India), Yuliya Chorna (WHO Civil Society Taskforce, TB Europe Coalition, Ukraine), Mike Frick (Treatment Action Group, United States of America) and Carrie Tudor (International Council of Nurses, South Africa), as well as Vineet Bhatia (WHO South-East Asia Regional Office, India), Ireneaus Sebit Sindani (WHO Country Office, Somalia), and Medea Gegia, Ernesto Jaramillo, Avinash Kanchar, Lana Syed and Kerri Viney (WHO Global Tuberculosis Programme, Switzerland).

Production of the chapter was funded by grants provided to WHO by the United States Agency for International Development (USAID).

Abbreviations and acronyms

The following table:

aDSM

,active tuberculosis drug-safety monitoring and management

AE

,adverse event

AIDS

,acquired immunodeficiency syndrome

ALT

,alanine aminotransferase

aOR

,adjusted odds ratio

ART

,antiretroviral therapy

ARV

,antiretroviral

AST

,aspartate aminotransferase

AUC

,area under the curve

BDLC

,a regimen of bedaquiline, delamanid, linezolid and clofazimine

BDLLfxC

,a regimen of bedaquiline, delamanid, linezolid, levofloxacin and clofazimine

BLLfxCZ

,a regimen of bedaquiline, linezolid, levofloxacin, clofazimine and pyrazinamide

BLMZ

,a regimen of bedaquiline, linezolid, moxifloxacin and pyrazinamide

BMI

,body mass index

BPaL

,a regimen of bedaquiline, pretomanid and linezolid

BPaLC

,a regimen of bedaquiline, pretomanid, linezolid and clofazimine

BPaLM

,a regimen of bedaquiline, pretomanid, linezolid and moxifloxacin

CB

,clinical breakpoint

CC

,critical concentration

CI

,confidence interval

CLD

,chronic liver disease

CNS

,central nervous system

CSF

,cerebrospinal fluid

CRF

,chronic renal failure

CTP

,Child-Turcotte-Pugh

CXR

,chest radiography

DAA

,direct-acting antiviral

DDI

,drug-drug interaction

DRS

,drug-resistance surveillance

DR-TB

,drug-resistant tuberculosis

DS-TB

,drug-susceptible tuberculosis

DST

,drug susceptibility testing

ECG

,electrocardiography

EMM

FDC

,event monitoring device for medication support

fixed-dose combination (of medicines)

The following table:

GDF

,Global Drug Facility

GDG

,Guideline Development Group

GRADE

,Grading of Recommendations Assessment, Development and Evaluation

HBV

,hepatitis B virus

HCV

,hepatitis C virus

HCW

,health care worker

HIV

,human immunodeficiency virus

HR

,isoniazid-rifampicin

HRZE

(H)RZE

Hr-TB

,isoniazid-rifampicin-ethambutol-pyrazinamide

(isoniazid optional)-rifampicin-ethambutol-pyrazinamide

rifampicin-susceptible, isoniazid-resistant tuberculosis

IMCI

IPD

,integrated management of childhood illness

individual patient data (or dataset)

IRIS

,immune reconstitution inflammatory syndrome

IV

,intravenous

LC-aNAAT

,low-complexity automated NAAT

LC-MNAAT

,low-complexity manual NAAT

LFT

,liver function test

LPA

,line probe assay

LTFU

,loss to follow-up

MC-aNAAT

,moderate-complexity automated NAAT

MC-MNAAT

,moderate-complexity manual NAAT

MDR-TB

,multidrug-resistant tuberculosis

MDR/RR-TB

,multidrug- or rifampicin-resistant tuberculosis

MGIT

,mycobacterial growth indicator tube

MIC

,minimum inhibitory concentration

mWRD

,molecular WHO-recommended rapid diagnostic

NAAT

,nucleic acid amplification test

NGS

,next-generation sequencing

NTM

,non-tuberculosis mycobacteria

NTP

,national tuberculosis programme

PHC

,primary health care

PLHIV

,people living with HIV

pre-XDR-TB

,pre-extensively drug-resistant tuberculosis

PTB

,pulmonary tuberculosis

RCT

,randomized controlled trial

rGLC

,regional Green Light Committee

RR-TB

,rifampicin-resistant tuberculosis

SAM

,severe acute malnutrition

SDG

,Sustainable Development Goal

SMS

,short message service or text message

SoC

,standard of care