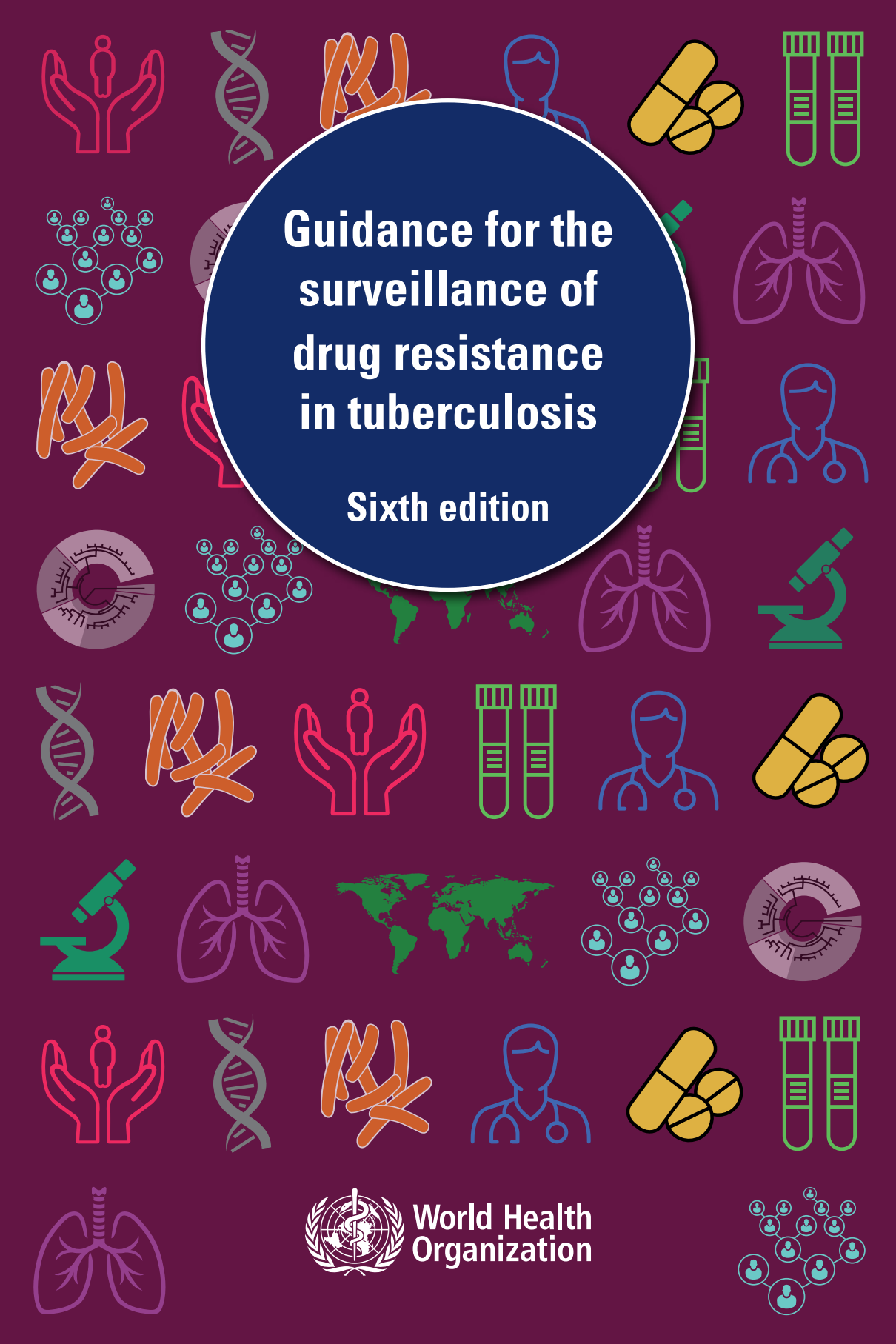

Guidance for the surveillance of drug resistance in tuberculosis

Sixth edition

World Health Organization

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Designed by Fiona Byrne.

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Abbreviations

CPC	cetylpyridinium chloride
CTM	capture, tracking and management
DHIS2	District Health Information Software 2
DNA	deoxyribonucleic acid
DST	drug susceptibility testing
FIND	Foundation for Innovative New Diagnostics
GLI	Global Laboratory Initiative
Hr-TB	rifampicin-susceptible, isoniazid-resistant tuberculosis
IATA	International Air Transport Association
LPA	line probe assay
MAR	missing at random
RR-TB	rifampicin-resistant tuberculosis
MDR-TB	multidrug-resistant tuberculosis
MGIT	Mycobacteria Growth Indicator Tube
MTB	*Mycobacterium tuberculosis*
MoU	memorandum of understanding
MTA	material transfer agreement
NGS	next-generation sequencing
PPS	probability proportional to size
RR	rifampicin-resistant
RRDR	rifampicin resistance determining region
SOP	standard operating procedure
SRL	Supranational Reference Laboratory
TAT	turnaround time
TB	tuberculosis
WGS	whole genome sequencing
WHO	World Health Organization
XDR-TB	extensively drug-resistant tuberculosis

Introduction

This sixth edition of the *Guidance for the surveillance of drug resistance in tuberculosis* (TB) is an updated version of earlier editions published between 1994 and 2015 *(1–5)*. Accurate diagnosis and treatment of TB should be available and accessible to all who need it, in line with the quest of the World Health Organization (WHO) to achieve universal health coverage, and to avert deaths from a preventable, treatable and curable disease. In 2014-2015, all WHO Member States committed to ending the TB epidemic by 2030 through the adoption of WHO's End TB Strategy and the United Nations Sustainable Development Goals (SDGs) *(6,7)*. This guidance document supports their call for improved access to diagnostic testing for TB, including universal drug susceptibility testing (DST). Furthermore, it contributes to the 2019 World Health Assembly resolution (WHA72.5) for strengthened efforts to combat antimicrobial resistance *(8)*, with an acknowledgement of its critical importance to TB.

This updated guidance incorporates experience gained from 25 years of the Global Project on Anti-Tuberculosis Drug Resistance Surveillance (hereafter referred to as the Global Project), a project initiated by WHO and the International Union Against Tuberculosis and Lung Disease (The Union), supported by a global network of Supranational TB Reference Laboratories (SRLs) *(9)*. This is the oldest and largest project for the surveillance of antimicrobial drug resistance in the world. The Global Project has served as a common platform for country, regional and global level evaluation of the magnitude and trends in anti-TB drug resistance. It has quantified the global burden of rifampicin-resistant (RR) TB, multidrug-resistant (MDR) TB[1] and of extensively drug-resistant (XDR) TB[2]. More importantly, it has assisted countries in planning the scale-up of the management of drug-resistant TB by providing essential data on national burden and drug resistance patterns.

Since its launch in 1994, the Global Project has collected and analysed data on anti-TB drug resistance from national surveillance systems and periodic surveys from 169 countries, which together account for 99% of the world's estimated TB patients *(10)*. Drug resistance surveillance data are published annually within the WHO Global Tuberculosis Report.

The aim of this document is to assist national TB programmes in developing the