

# Drug resistance surveillance in leprosy

Report of the WHO-ILEP joint meeting  
4–6 February 2014  
Cebu City, Philippines



**World Health  
Organization**

Regional Office for South-East Asia

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## Acronyms

AFB	
BI	bacterial index
DDS	diamino-diphenyl sulfone
DNA	deoxyribonucleic acid
DRDR	drug-resistant determining regions
DRS	drug-resistance surveillance
DST	drug susceptibility test
GLP	Global Leprosy Programme
HRM	high resolution melt
IEC	information, education and communication
ILEP	International Federation of Anti-Leprosy Associations
MB	multi-bacillary
MDT	multidrug therapy
MFP	mouse footpad
MoH	Ministry of Health
NCDR	new case detection rate
NLEP	National Leprosy Elimination Programme Headquarters
PCR	polymerase chain reaction
QC	quality control
SINAN	National Information System for Notifiable Diseases
SNP	single nucleotide polymorphisms
SSS	slit skin smear
SVDH	skin and venereal diseases hospital
TAG	WHO Technical Advisory Group on Leprosy Control
TLM	The Leprosy Mission
TNF	The Nippon Foundation
WGS	whole genome sequencing



## 1. Background

Rifampicin is a strong constituent antibiotic used in multidrug therapy (MDT) besides dapsone and clofazimine. Even 30 years after it was introduced, MDT remains the only WHO recommended regimen for treating leprosy. Emergence of drug resistance to one drug or all the constituents of MDT is reported sporadically in different parts of the world. Surveillance of drug resistance is, therefore, necessary to sustain the gains achieved in leprosy control.

In 2009, WHO published 'Guidelines for Global Surveillance of Drug Resistance in Leprosy'. Currently drug resistance surveillance (DRS) is carried out by screening all multi-bacillary (MB) patients who have relapsed after completing the prescribed WHO MB MDT, on a sentinel-centre basis. The system was developed to detect secondary rifampicin resistance. Drug resistance to dapsone and ofloxacin is also tested simultaneously. Centres having appropriate wherewithal in clinical and laboratory services were identified as sentinel centres. Currently, 17 countries are collecting patient samples for testing drug resistance: Benin, Burkina Faso, Brazil, Colombia, China, India, Indonesia, Madagascar, Mali, Mozambique, Myanmar, Nepal, Niger, Pakistan, Philippines, Viet Nam and Yemen. There are 10 reference laboratories which facilitate processing of these samples for 'leprosy drug resistance DNA mutation' detection. These laboratories are located in Brazil, France, India, Japan, Nepal, Republic of Korea, Switzerland and USA.

The WHO-ILEP joint meeting on drug resistance surveillance was organized during 4-6 February 2014 in Cebu, Philippines to review the progress on drug resistance surveillance in leprosy carried out through the network of sentinel centres. Currently rifampicin resistance does not seem to be a serious problem among relapse cases. Longitudinal observation however, should be continued, alongside primary and other secondary leprosy case surveillance. The situation in leprosy control is not the same as in TB, and vigilance needs to be continued to prevent the occurrence and spread of drug resistance and thus maintain the effectiveness of MDT.

## 2. Objectives

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