



GLASS

Guidance for national reference laboratories

Global Antimicrobial Resistance and
Use Surveillance System (GLASS)

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Contents

Acknowledgements	iv
Acronyms	v
Preface	vi
1 National reference laboratories for surveillance of antimicrobial resistance	1
<hr/>	
2 Functions of a national reference laboratory in a network of national surveillance laboratories	3
<hr/>	
3 Reference functions	4
3.1 Reference of samples or isolation	5
3.2 Confirmation and characterization of resistance mechanisms	6
3.3 Quality control for surveillance sites that support clinical laboratories	10
3.3.1 Indirect quality control	10
3.3.2 Quality control system	11
3.3.3 External quality assessment programme	12
3.4 Outbreak support	13
<hr/>	
4 Guidance and standardization	14
<hr/>	
5 Training	15
<hr/>	
6 Data collection and analysis	16
6.1 Laboratory information systems and test reports	16
6.2 Data analysis for national surveillance of antimicrobial resistance	17
<hr/>	
7 Assessment of laboratories	18
<hr/>	
8 References	19
<hr/>	

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Acronyms

AMR	antimicrobial resistance
AST	antimicrobial susceptibility testing
CLSI	Clinical and Laboratory Standards Institute
EQA	external quality assurance
EUCAST	European Committee on Antimicrobial Susceptibility Testing
GLASS	Global Antimicrobial Resistance and Use Surveillance System
NRL	national reference laboratory
PCR	polymerase chain reaction
QC	quality control

Preface

Antimicrobial resistance (AMR) is a significant, increasing threat to global public health. In 2015, WHO launched the Global Antimicrobial Resistance and Use Surveillance System (GLASS) for standardized collection of data on AMR at the global level to inform policy to monitor the effectiveness of interventions and strengthen the evidence base on AMR. Surveillance of antimicrobial resistance requires reliable microbiological analysis of clinical specimens, and national reference laboratories (NRLs) play a key role in supporting AMR surveillance in countries. Upon enrolment in GLASS, countries are requested to designate at least one NRL with expertise in methods for characterizing AMR pathogens and providing support to the national AMR surveillance system.

Important functions of NRLs include the provision of guidance and support to clinical laboratories in the surveillance system for adopting national standards and protocols for microbiological analysis. The NRL works in tandem with the national AMR surveillance coordinating centre to define strategies for AMR surveillance. The NRL also plays a key role in confirmation and timely reporting of emerging resistance to allow prompt and effective prevention and control.

NRLs are a central part of national surveillance systems in countries, with a key role in public health and in the diagnosis of a range of diseases. This technical guidance focuses specifically on the functions and activities of NRLs for national surveillance of AMR. Details of the various functions are provided, including reference functions such as confirmation and characterization of resistance mechanisms, quality control for surveillance sites, external quality assessment, outbreak support, guidance and standardization, test validation and verification, providing training, data collection and analysis for national surveillance of AMR and laboratory assessments.

Countries can use this technical guidance to establish or improve NRL capacity within the national AMR surveillance system. Increased laboratory capacity in countries and rapid, accurate diagnostic testing will significantly strengthen global AMR surveillance and diagnostic stewardship.

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