AMR tools and resources: An introduction for health professionals and researchers

29th January 2026

Antimicrobial resistance (AMR) is a pressing global health challenge, and access to high-quality data and analytical tools is essential for effective decision-making. This webinar introduces key resources designed to support researchers, health professionals, and policy partners working to understand and address AMR.

GRAM Global Research on Antimicrobial Resistance

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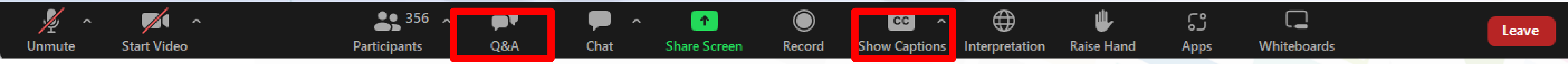
THE GLOBAL HEALTH NETWORK Enabling research by sharing knowledge

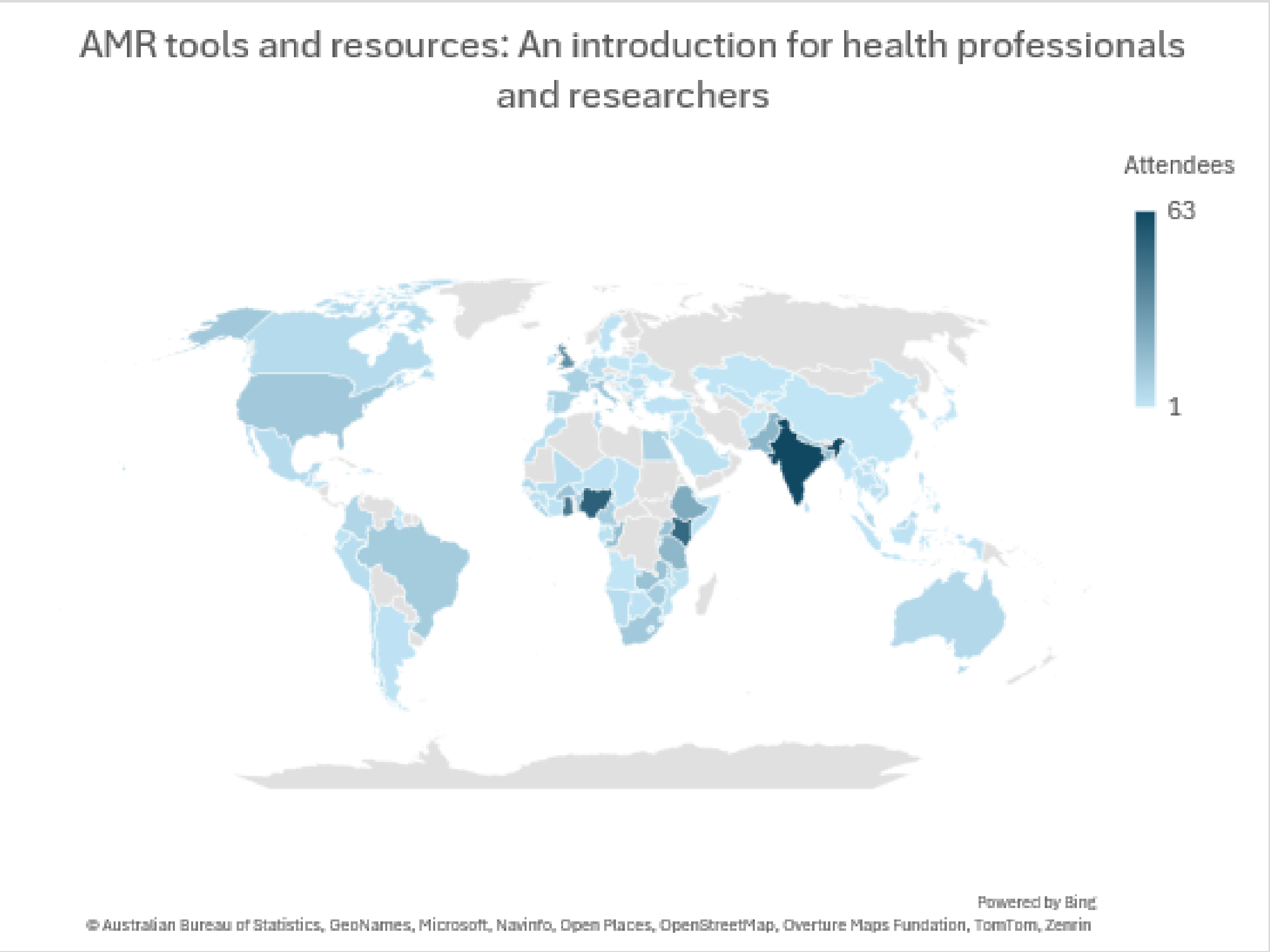
Housekeeping

- This webinar is being recorded and will be shared on **The Global Health Network**.
- To automatically translate the speech to subtitles in your chosen language, navigate to the ***Closed Captions function*** and select your language.
- Due to the number of participants your video and microphone have been disabled.
- Please use the ***Chat function*** to introduce yourself or to report any technical issues.
- Please use the ***Q&A function*** to post your questions and comments. You may do so anonymously.



Registered for today's webinar – Thank You!

Country	Attendees
India	63
Nigeria	53
Kenya	50
Ghana	44
United Kingdom	35
Ethiopia	24
Pakistan	20
Tanzania	19
DRC	18
Bangladesh	17
Republic of Congo	16
Uganda	15
Zambia	15
Burkina Faso	14
Nepal	13
Rwanda	13
Italy	12
South Africa	12
United States	12
Brazil	11
TOTAL	**766**



Panel & Agenda

Welcome & introduction

Isabela Cabrera - Project Manager (Isabela), GRAM Team, Oxford University, United Kingdom

Introduction to MICROBE

Rachel Otuko - PhD Student, University of Oxford, United Kingdom

WHO GLASS data

Dr Esther Van Kleef - Senior Research Associate, University of Oxford, United Kingdom

AMR Data Repository

Dr Barney McManigal - Senior Communications and Engagement Manager, University of Oxford, United Kingdom

AMR R package

Anna Nebykova - Statistician, University of Oxford, United Kingdom

Q&A Session

Moderated by Professor Ben Cooper - University of Oxford, United Kingdom

Introduction to MICROBE

Rachel Otuko

29th Jan 2026

Outline

- What is MICROBE
- How to find MICROBE
- Exploring different estimates for infectious syndromes, pathogens and AMR
- Downloading data

What is MICROBE

Measuring **I**nfectious **C**auses and **R**esistance **O**utcomes for **B**urden **E**stimation (MICROBE)

- An interactive visualization tool to explore health outcomes of infections, pathogens and antimicrobial resistance (AMR) across different regions and countries.

- Estimates are based on the methods published by GRAM in the Lancet (Naghavi *et al*., 2024).

- The burden of AMR in terms of death and DALYS attributable to and associated with AMR are shown.

*Key terms are defined on the first tab of the tool

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How to find MICROBE

- https://vizhub.healthdata.org/microbe/
- Google "MICROBE IHME"

Institute for Health Metrics and Evaluation
https://vizhub.healthdata.org › microbe

MICROBE - VizHub

The **MICROBE** (Measuring Infectious Causes and Resistance Outcomes for Burden Estimation) tool visualizes the fatal and nonfatal health outcomes of infections, ...

VizHub - MICROBE

The MICROBE (Measuring Infectious Causes and ...

More results from healthdata.org »

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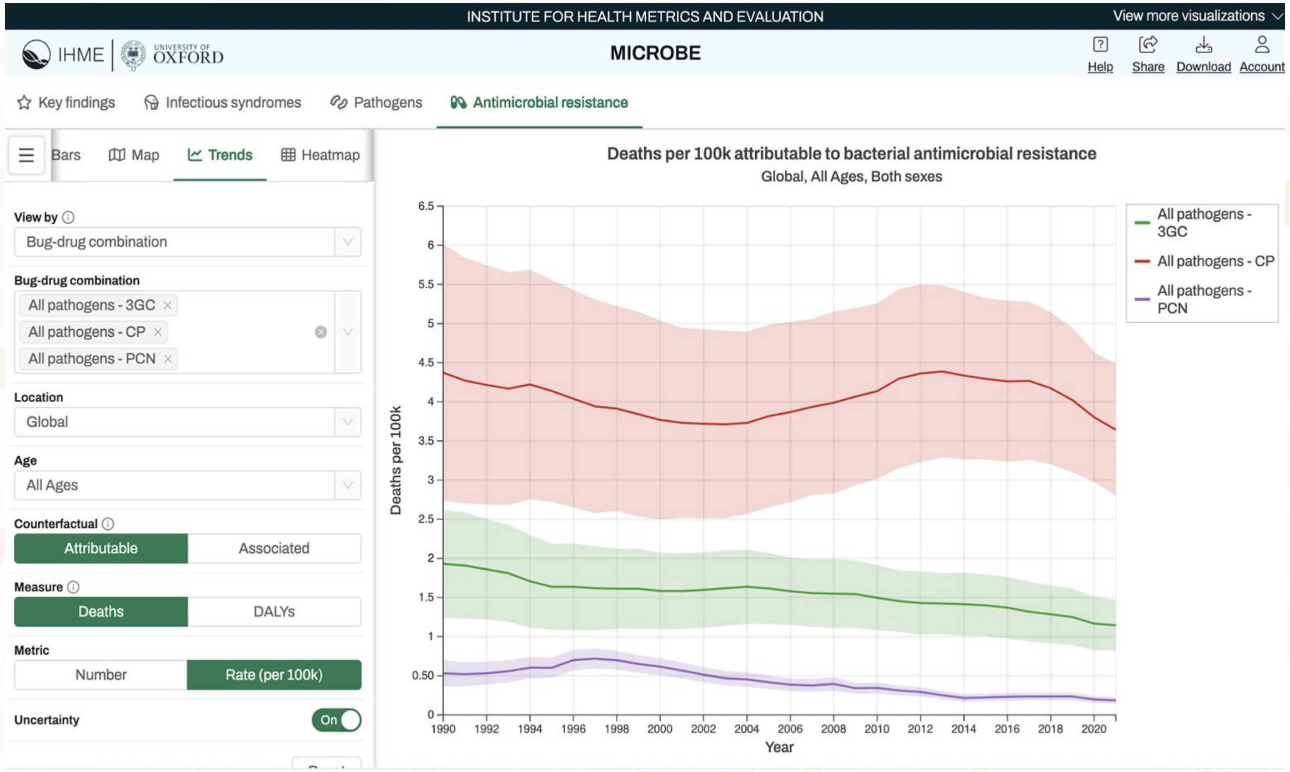
Exploring the Data

- Estimates are comparable across countries, time, age groups, sex, and pathogens, syndromes and outcome measures (deaths, DALYs)
- Visualizations include bar graphs, maps and time-series plots
- Uncertainty estimates are included
- Results are interactive and downloadable



Practical Example

- What is the overall trend of deaths attributable to third generation cephalosporin resistant *E.coli* in Kenya from 2000 to 2021?

- Compare estimates per age group, who appear to be most affected?

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Thank you!

MICROBE

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Global Antimicrobial Resistance Surveillance

Esther van Kleef, PhD
Senior Research Associate, *University of Oxford*

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Any views or opinions expressed are my own and do not reflect the views of the World Health Organization.

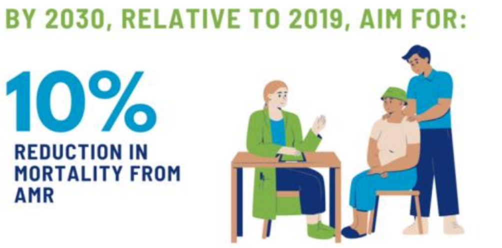
Questions regarding GLASS future strategic plan, or capacity development are best addressed to WHO directly.

Global antimicrobial resistance surveillance and use (GLASS)

Objectives of GLASS AMR

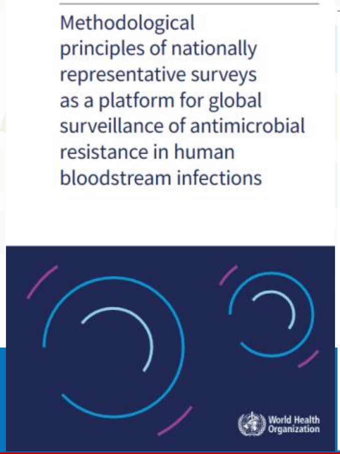
- Foster and standardise national AMR surveillance systems
- Monitor global AMR trends
- Inform and monitor national and global AMR response
- Detect emergence of (new) resistance
- Estimate the extend and burden of AMR

  (e.g. UNGA AMR targets)



Routine surveillance

National surveys



Early detection

One Health surveillance

Focused surveillance

WHO's "GLASS manual for AMR surveillance in common bacteria causing human infection

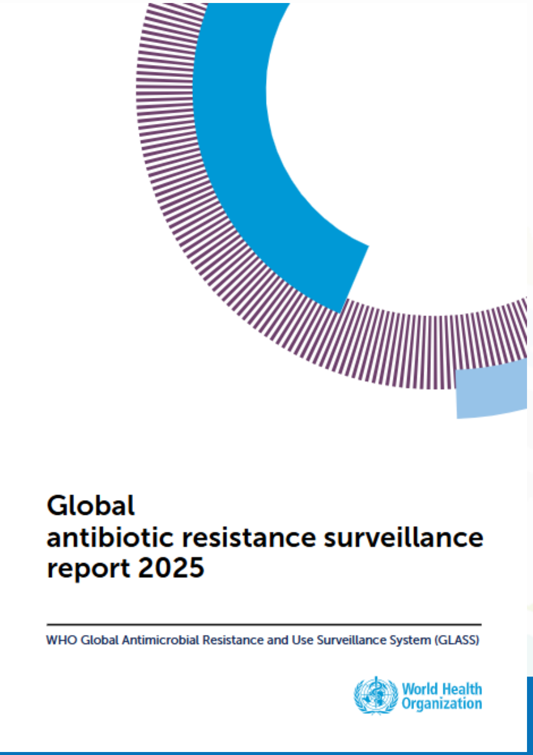
Updated in 2023

Target pathogens	Blood	CSF	Urine	Stool	Lower respiratory tract	Urethral, cervical, rectal, pharyngeal swabs
Acinetobacter spp.	●	○			●	
E. coli	●	○	●		○	
K. pneumoniae	●	○	●		●	
P. aeruginosa	●	○			●	
S. aureus	●	○			●	
S. pneumoniae	●	●			●	
N. meningitidis	●	●				
H. influenzae	○	●			●	
Salmonella spp. (non-typhoidal)	●	○		●		
S. enterica serovar Typhi	●			○		
S. enterica serovar Paratyphi A	●			○		
Shigella spp.				●		
N. gonorrhoeae						●

Purple and individual-level data: from 2023 onwards – not in latest report

Latest 2025 report:

- **Four** infection types
- **93** infection type-pathogen-antibiotic combinations
- Aggregated by age/sex strata



Core components of a national AMR surveillance system (five)

Surveillance Site:

collects basic demographic, clinical, epidemiological and microbiological information from patients

* usually a hospital, clinic or out-patient community health facility with access to relevant epidemiological and laboratory support

National Reference Laboratory:

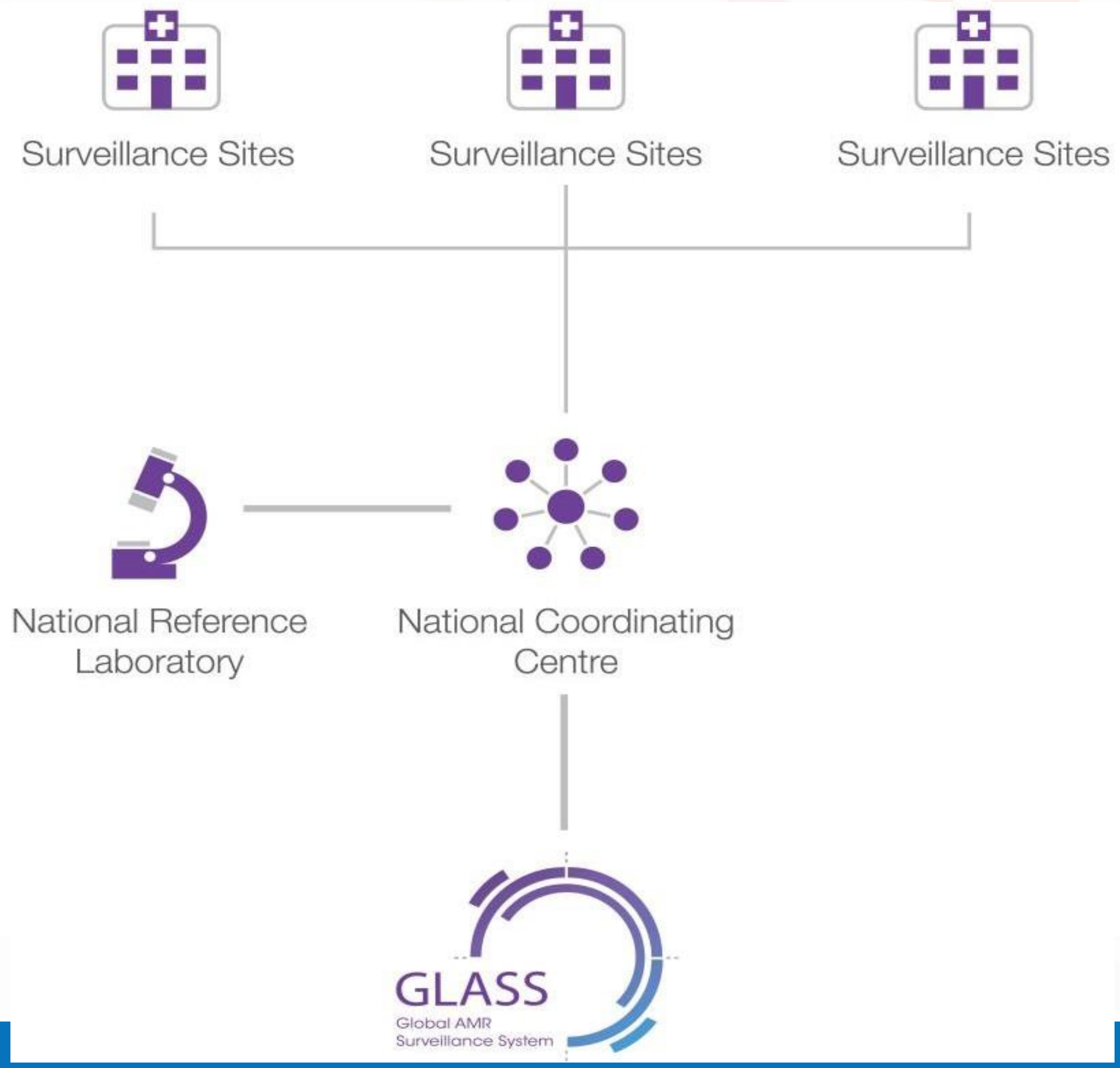
promotes good laboratory practices and supports laboratories in the national surveillance system

* usually at least one national laboratory as designated by the government

National Coordinating Centre:

establishes and oversees the national surveillance programme, gathers national AMR data and communicates with GLASS via a national focal point

* usually a public health institute



Patient demographics
Infection origin

Surveillance indicators

Core components of a national AMR surveillance system (five)

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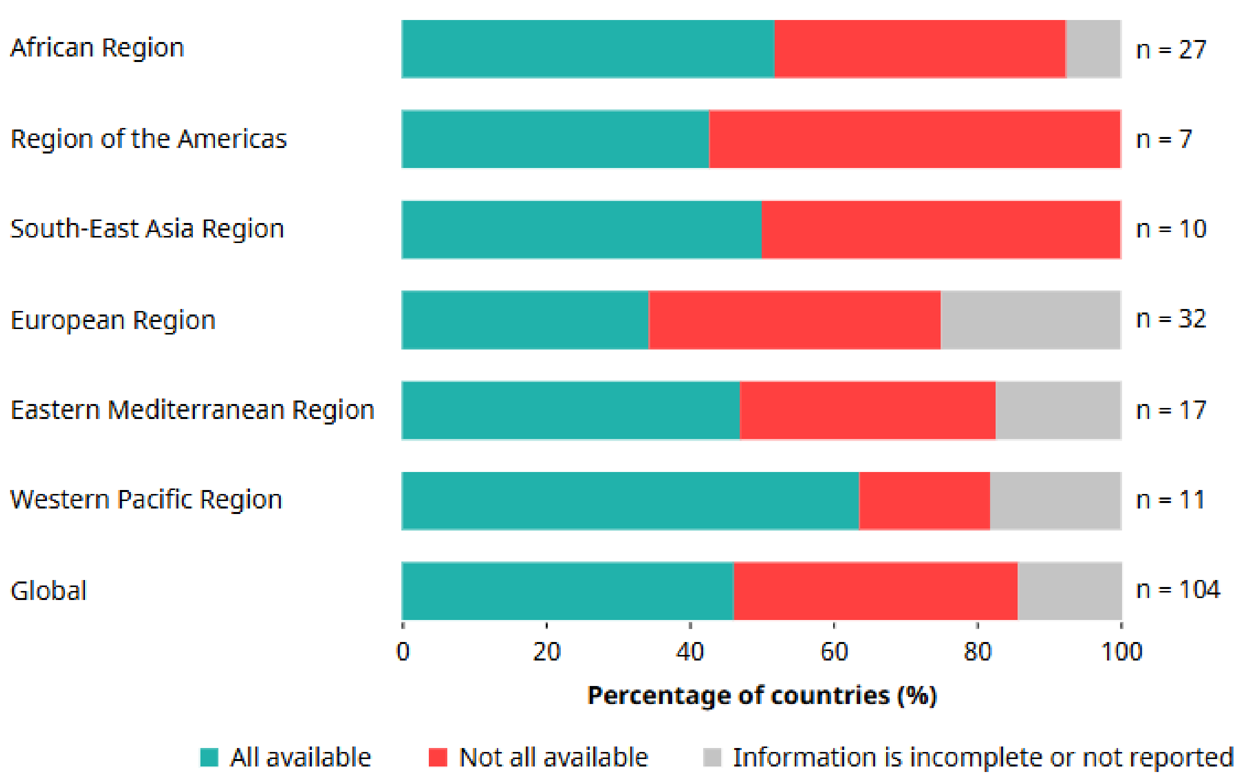
Figure. 2.2. Global and regional implementation of the five core components of national AMR surveillance systems, 2023



raphics

dicators

GLASS Global AMR Surveillance System

Source: WHO GLASS report 2025

GLASS "Two pronged approached"

Isolate-based data

- Proportion of patients with a positive sample (those with an infection caused by a GLASS target pathogen)
- Allows for estimating **AMR "prevalence"**

Sample-based data

- All patients with a suspected bacterial infection (including those with no bacterial growth/not a GLASS target pathogen)
- Provides denominator data
- Allows for estimating **AMR prevalence** and **AMR infection incidence**

AMR surveys

Countries lacking routine AMR surveillance

- Cross-sectional, prospective
- Allows for estimating **AMR burden (mortality)**

Routine surveillance

National surveys

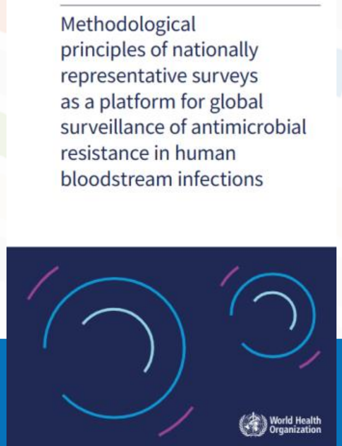
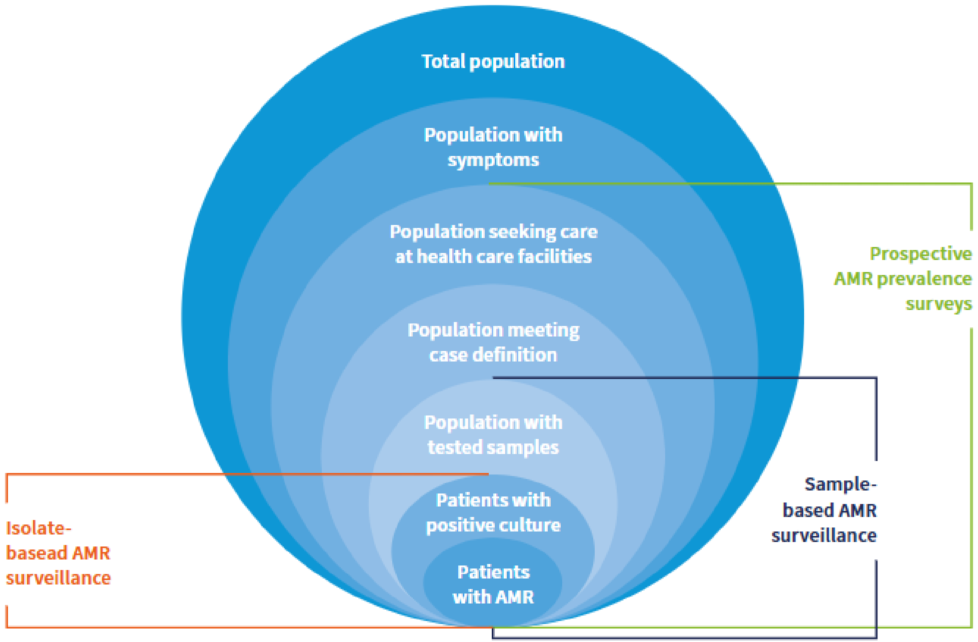


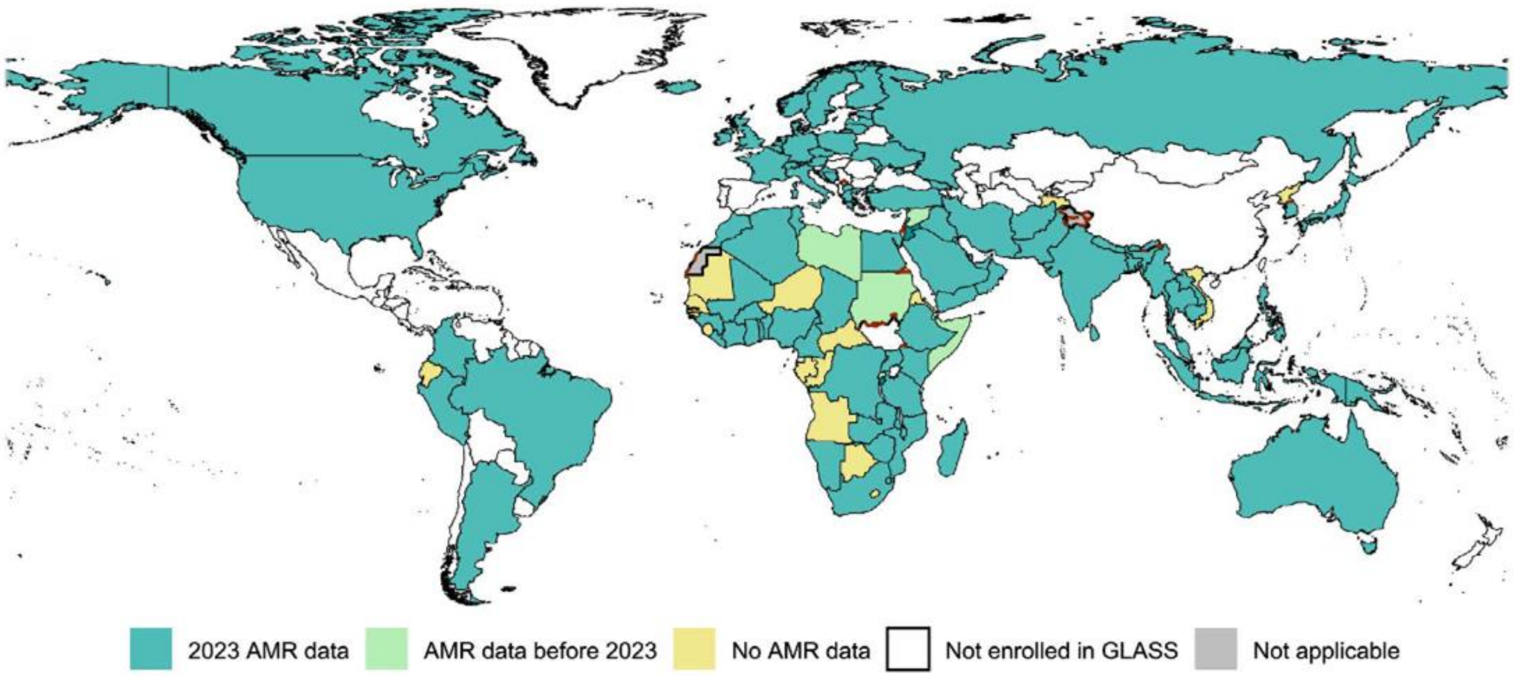
Fig. 5.1. Patient populations in "routine" AMR surveillance (isolate-based and sample-based surveillance) and prevalence survey approaches



GLASS AMR participation (2023)

- In 2023, **104 countries** (70.9% of world population) report AMR data for at least one GLASS infection type

Countries reporting AMR data to WHO GLASS for at least one calendar year (2016-2023)



Countries reporting 2023 AMR data by WHO region

African Region	57.4%, 27/47
Region of the Americas	20.0%, 7/35
South-East Asia Region	90.9%, 10/11
European Region	58.5%, 31/53
Eastern Mediterranean Region	76.2%, 16/21
Western Pacific Region	37.0%, 10/27

Source: WHO GLASS report 2025

GLASS AMR surveillance coverage

Number of bloodstream infection episodes with AST results per million population, 2023

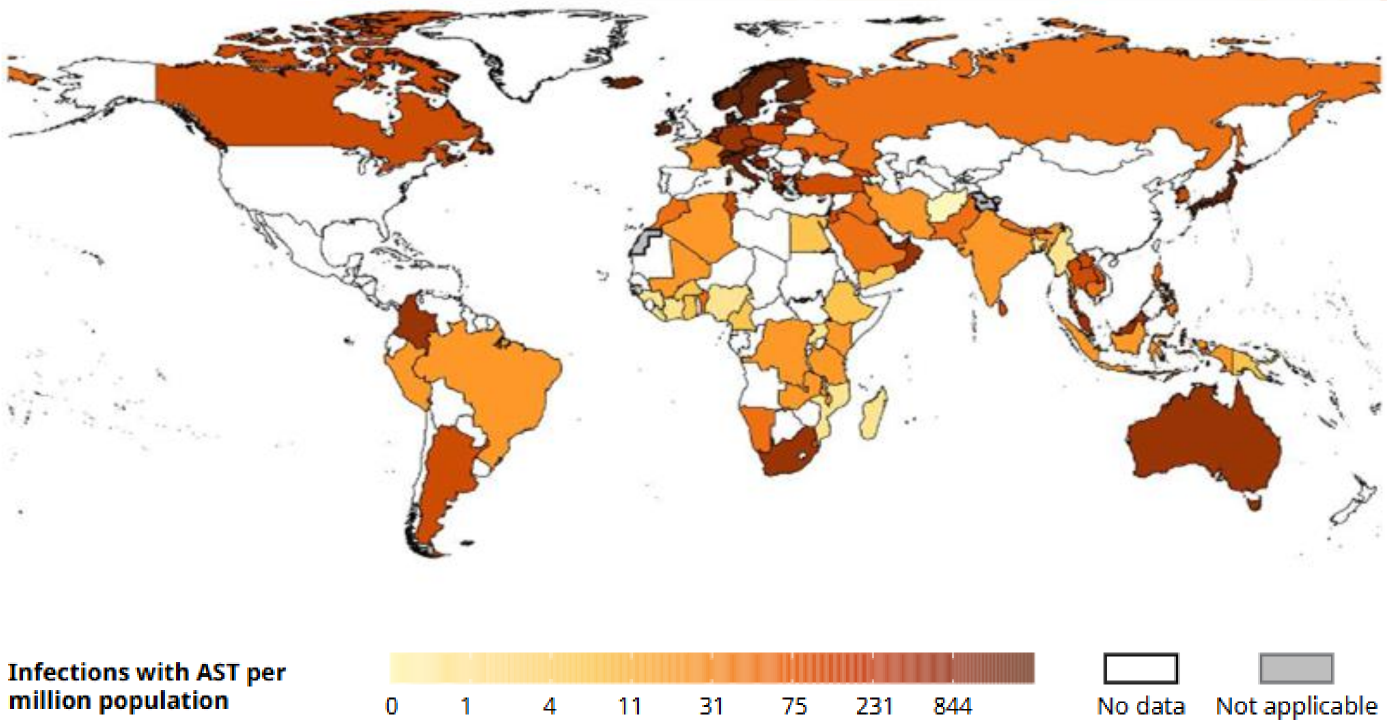
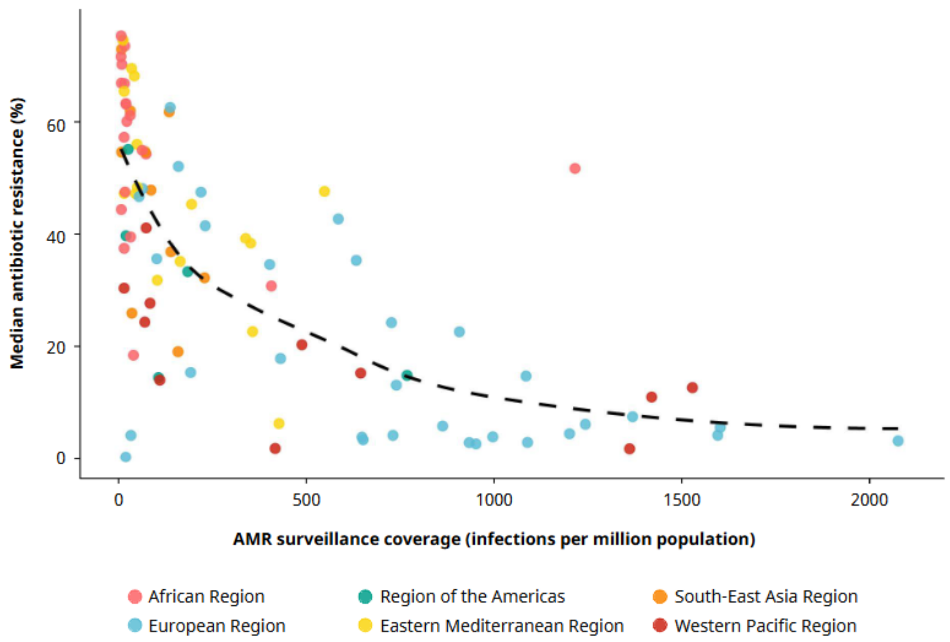


Figure 4. Median national percentage of AMR in bloodstream infections by AMR surveillance coverage, 2023



- Between 2016 – 2023, 23.9 million AST results reported
- Notable geographical disparities in AMR surveillance coverage
  - Heterogeneity in **country-specific characteristics**
  - Unequal access to surveillance infrastructure and lab capacity

Data are not comparable when variation in coverage, representativeness and selection bias

Source: WHO GLASS report 2025

Strengthen routine AMR surveillance

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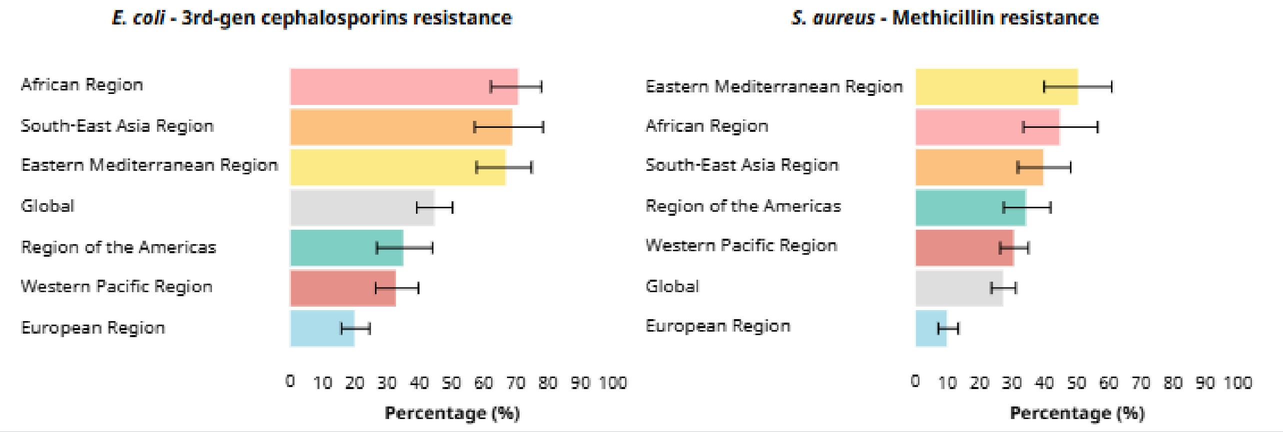
<u>Latest 2025 report:</u>

- Bayesian modelling approaches to estimate **age- and sex-weighted** AMR prevalence and trends
  - adjusting for **testing coverage**
  - incorporating **country-specific** temporal and demographic variation.



- Insight in AMR surveillance data gaps

- Complemented by systematic reviews

Articles

Antimicrobial resistance in bacterial meningitis caused by *Streptococcus pneumoniae, Neisseria meningitidis*, or *Haemophilus influenzae* (2010–24): a systematic review and meta-analysis

Gilbert Lazarus, Benjamin Caddey, Anna Dean, Florentina Febrina, Vincent Kharisma Wangsaputra, Shafira Permata Radiani, Yindi Xiong, John M Conly, Herman W Barkema, Lorenzo Pezzoli, Esther van Kleef, Olga Tosas Auguet, Paul Turner, Kavita U Kothari, Silvia Bertagnolio, Diego B Nobrega*, Raph L Hamers*, on behalf of the WHO AMR Prevalence Systematic Review Collaborators†*

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Summary

Background There are fragmented data on the patterns of antimicrobial resistance in the main bacterial pathogens causing meningitis, especially in low-income and middle-income countries (LMICs) where the disease burden is highest. This review aimed to estimate meningitis-specific prevalence of antimicrobial resistance and time trends, globally and for each of the WHO regions, for the main antimicrobials used to treat or prevent meningitis.

Methods In this systematic review and meta-analysis, we systematically searched Embase, Global Health Database, and MEDLINE for original, peer-reviewed articles in any language, published between Jan 1, 2010, and May 16, 2024,

Lancet Microbe 2026
Published Online
https://doi.org/10.1016/j.lanmic.2025.101238

*Joint last authors
†Members listed at the end of the Article

Strengthen routine AMR surveillance

GRAM Global Research on Antimicrobial Resistance | IDDO Infectious Diseases Data Observatory | The Global Health Network — Enabling research by sharing knowledge

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- Insight in AMR surveillance data gaps
- Complemented by systematic reviews

Updated GLASS manual (2023)

- Individual-level data
- More syndromes, pathogens, and antibiotics
- Molecular AMR data
- Population coverage meta-data
- Complementary methods
- Enhanced surveillance of fungal infections

Articles

Antimicrobial resistance in bacterial meningitis caused by *Streptococcus pneumoniae, Neisseria meningitidis*, or *Haemophilus influenzae* (2010–24): a systematic review and meta-analysis

Gilbert Lazarus, Benjamin Caddey, Anna Dean, Florentina Febrina, Vincent Kharisma Wangsaputra, Shafira Permata Radiani, Yindi Xiong, John M Conly, Herman W Barkema, Lorenzo Pezzoli, Esther van Kleef, Olga Tosas Auguet, Paul Turner, Kavita U Kothari, Silvia Bertagnolio, Diego B Nobrega*, Raph L Hamers*, on behalf of the WHO AMR Prevalence Systematic Review Collaborators†*

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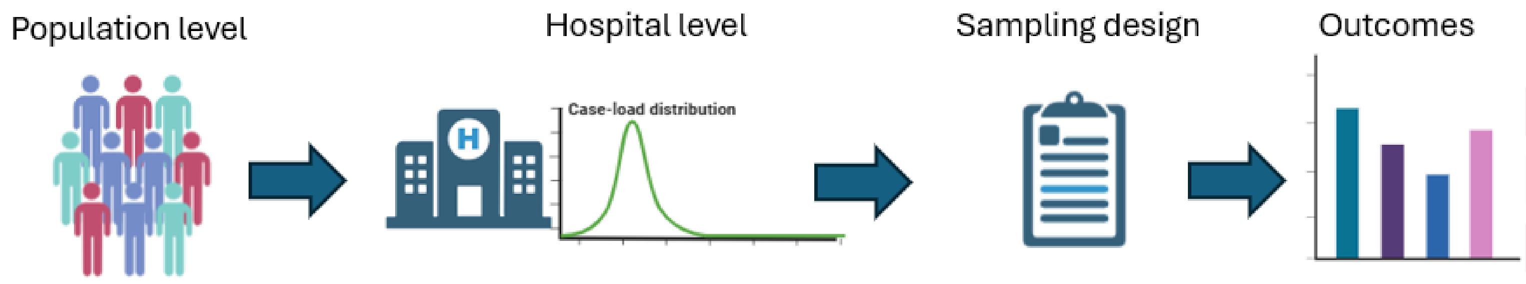
Strengthen routine AMR surveillance

Optimise national AMR survey/surveillance designs by quantifying hospital-level clustering (ICCs) from GLASS data and testing sampling scenarios via simulation.

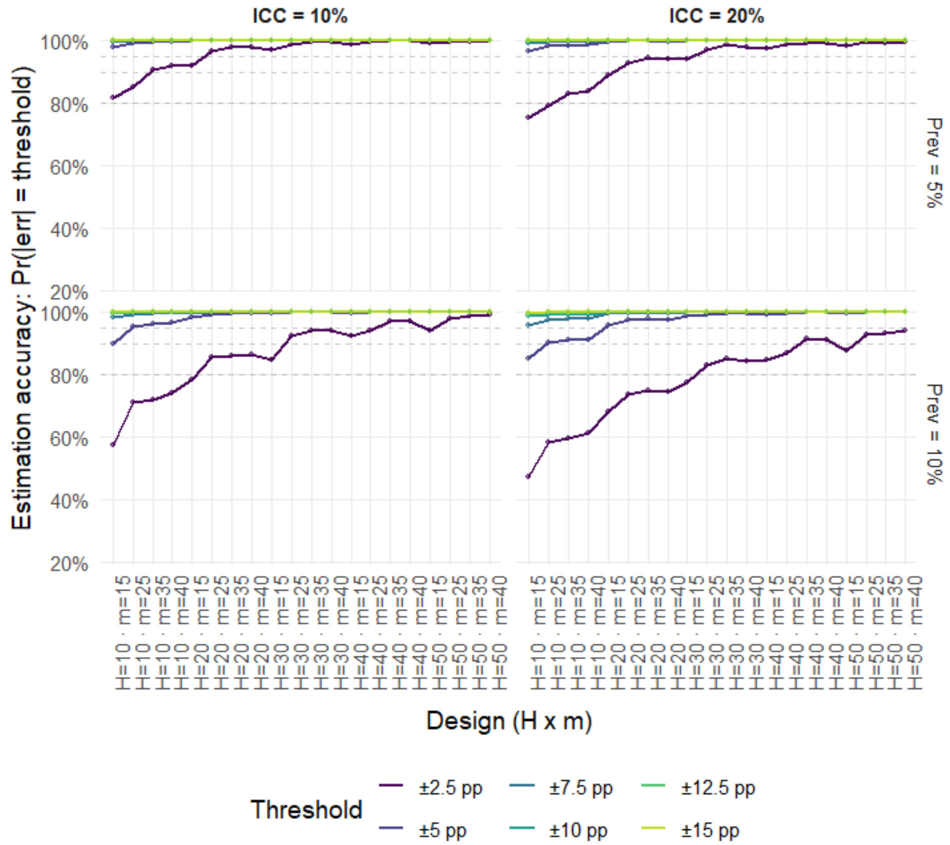


- Age-sex distribution
- Population size derived from sepsis rate

- Hospital count (H)
- Case-load distribution
- ICC-driven heterogeneity
- Hospital level AMR

- Hospital selection (SRS or PPS)
- Patient selection
- Prevalence estimation
- Uncertainty

- Precision
- Coverage
- Accuracy



NUFFIELD DEPARTMENT OF PRIMARY CARE HEALTH SCIENCES
Medical Sciences Division

Centre for Genomic Pathogen Surveillance

Precision from population genomics

Dx/Tx/Vx

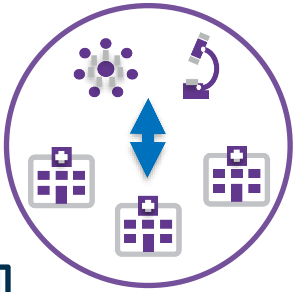

GLASS
Whole-genome sequencing for surveillance of antimicrobial resistance

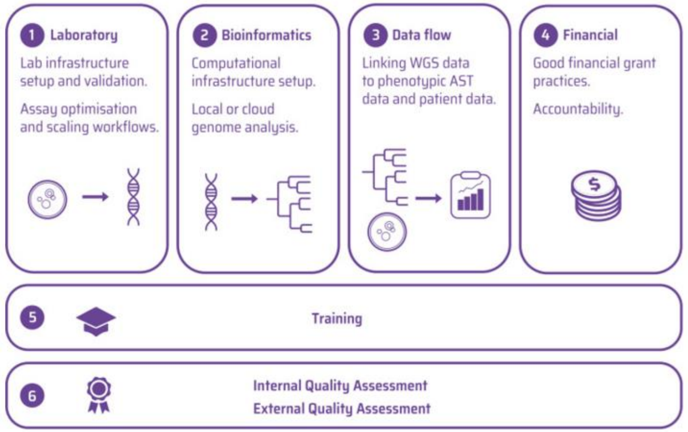
Global Antimicrobial Resistance and Use Surveillance System (GLASS)

World Health Organization

Genomic epidemiology

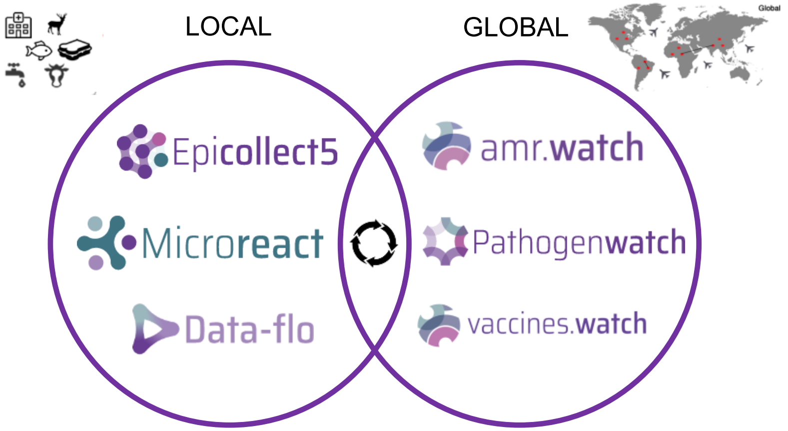
NIHR | National Institute for Health and Care Research

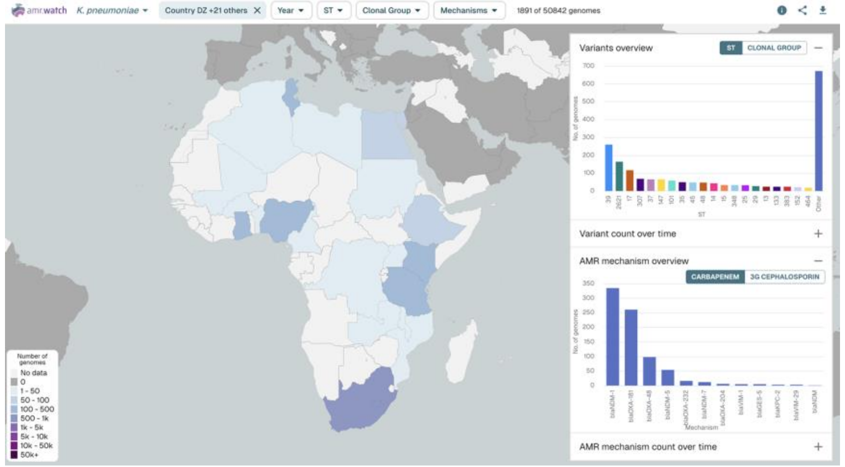




WHO Collaborating Centre on Genomic Surveillance of Antimicrobial Resistance

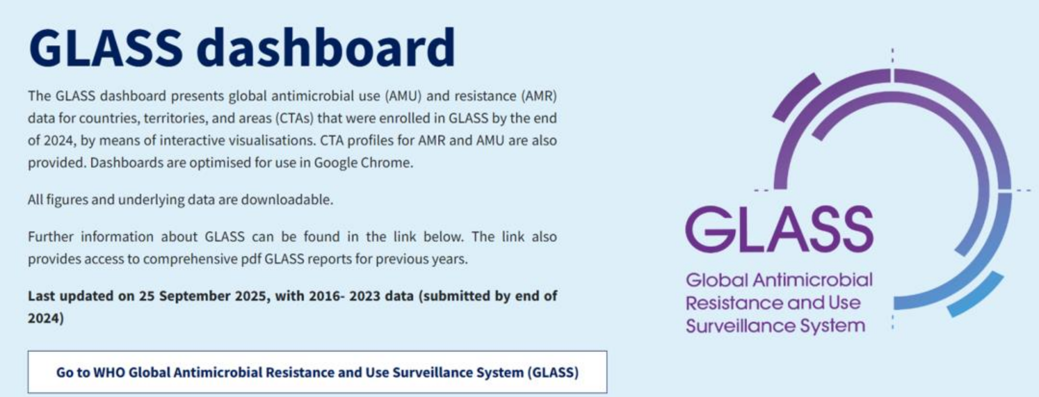
Capacity Strengthening





Engineering and data analytics

References



GLASS dashboard
The GLASS dashboard presents global antimicrobial use (AMU) and resistance (AMR) data for countries, territories, and areas (CTAs) that were enrolled in GLASS by the end of 2024, by means of interactive visualisations. CTA profiles for AMR and AMU are also provided. Dashboards are optimised for use in Google Chrome.
All figures and underlying data are downloadable.
Further information about GLASS can be found in the link below. The link also provides access to comprehensive pdf GLASS reports for previous years.
Last updated on 25 September 2025, with 2016- 2023 data (submitted by end of 2024)
Go to WHO Global Antimicrobial Resistance and Use Surveillance System (GLASS)
GLASS
Global Antimicrobial Resistance and Use Surveillance System

The AMR data repository

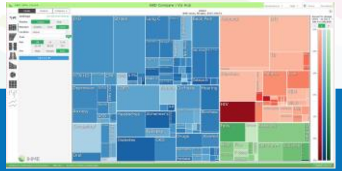
Dr Barney McManigal
Senior Communications & Engagement Manager
The GRAM Project
www.tropicalmedicine.ox.ac.uk/gram

‘AMR tools and resources: an introduction for health professionals and researchers’
29 January 2026

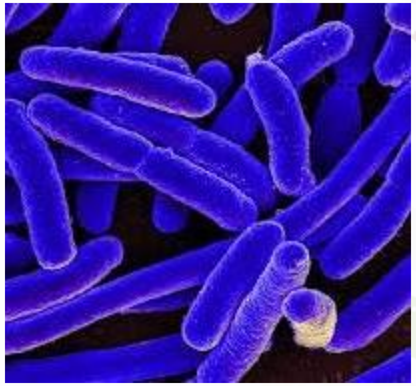
Our story

The Global Research on Antimicrobial Resistance (GRAM) Project

- A partnership between the Institute for Health Metrics & Evaluation (IHME), University of Washington, and the University of Oxford
- Created in 2017 to provide rigorous, quantitative estimates of AMR burden; increase the global, regional and national awareness of AMR; boost surveillance efforts, particularly in LMICs; and, to promote the rational use of antimicrobials worldwide.
- Funded by the UK Dept. of Health & Social Care and the Wellcome Trust



What AMR data does GRAM need?



List of 48 variables (30 priority variables)

Patient-level data

- Microbiology data with AST (antimicrobial susceptibility testing) results
- Outcome data (including mortality)

Murray, et al

Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis

*Antimicrobial Resistance Collaborators**

Summary

Background Antimicrobial resistance (AMR) poses a major threat to human health around the world. Previous publications have estimated the effect of AMR on incidence, deaths, hospital length of stay, and health-care costs for specific pathogen–drug combinations in select locations. To our knowledge, this study presents the most comprehensive estimates of AMR burden to date.

Methods We estimated deaths and disability-adjusted life-years (DALYs) attributable to and associated with bacterial AMR for 23 pathogens and 88 pathogen–drug combinations in 204 countries and territories in 2019. We obtained data from systematic literature reviews, hospital systems, surveillance systems, and other sources, covering 471 million individual records or isolates and 7585 study-location-years. We used predictive statistical modelling to produce estimates of AMR burden for all locations, including for locations with no data. Our approach can be divided into five broad components: number of deaths where infection played a role, proportion of infectious deaths attributable to a given infectious syndrome, proportion of infectious syndrome deaths attributable to a given pathogen, the percentage of a given pathogen resistant to an antibiotic of interest, and the excess risk of death or duration of an infection associated with this resistance. Using these components, we estimated disease burden based on two counterfactuals: deaths attributable to AMR (based on an alternative scenario in which all drug-resistant infections were replaced by drug-susceptible infections), and deaths associated with AMR (based on an alternative scenario in which all drug-resistant infections were replaced by no infection). We generated 95% uncertainty intervals (UIs) for final estimates as the 25th and 975th ordered values across 1000 posterior draws, and models were cross-validated for out-of-sample predictive validity. We present final estimates aggregated to the global and regional level.

Published Online
January 20, 2022
https://doi.org/10.1016/S0140-6736(21)02724-0
See Online/Comment
https://doi.org/10.1016/S0140-6736(22)00087-3

*Collaborators are listed at the end of the paper
Correspondence to:
Dr Mohsen Naghavi, Institute for Health Metrics and Evaluation, University of Washington, Seattle, WA 98195, USA
nagham@uw.edu

Naghavi, et al

Global burden of bacterial antimicrobial resistance 1990–2021: a systematic analysis with forecasts to 2050

*GBD 2021 Antimicrobial Resistance Collaborators**

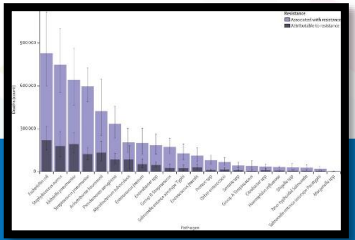
Summary

Background Antimicrobial resistance (AMR) poses an important global health challenge in the 21st century. A previous study has quantified the global and regional burden of AMR for 2019, followed with additional publications that provided more detailed estimates for several WHO regions by country. To date, there have been no studies that produce comprehensive estimates of AMR burden across locations that encompass historical trends and future forecasts.

Methods We estimated all-age and age-specific deaths and disability-adjusted life-years (DALYs) attributable to and associated with bacterial AMR for 22 pathogens, 84 pathogen–drug combinations, and 11 infectious syndromes in 204 countries and territories from 1990 to 2021. We collected and used multiple cause of death data, hospital discharge data, microbiology data, literature studies, single drug resistance profiles, pharmaceutical sales, antibiotic use surveys, mortality surveillance, linkage data, outpatient and inpatient insurance claims data, and previously published data, covering 520 million individual records or isolates and 19 513 study-location-years. We used statistical modelling to produce estimates of AMR burden for all locations, including those with no data. Our approach leverages the estimation of five broad component quantities: the number of deaths involving sepsis; the proportion of infectious deaths attributable to a given infectious syndrome; the proportion of infectious syndrome deaths attributable to a given pathogen; the percentage of a given pathogen resistant to an antibiotic of interest; and the excess risk of death or duration of an infection associated with this resistance. Using these components, we estimated disease burden attributable to and associated with AMR, which we define based on two counterfactuals; respectively, an alternative scenario in which all drug-resistant infections are replaced by drug-susceptible infections, and an alternative scenario in which all drug-resistant infections were replaced by no infection. Additionally, we produced global and regional forecasts of AMR burden until 2050 for three scenarios: a reference scenario that is a probabilistic forecast of the most likely future; a Gram-negative drug scenario that assumes future drug development that targets Gram-negative pathogens; and a better care scenario that assumes future improvements in health-care quality and access to appropriate antimicrobials. We present final estimates aggregated to the global, super-regional, and regional level.

Lancet 2024; 404: 1199–226
Published Online
September 16, 2024
https://doi.org/10.1016/S0140-6736(24)01867-1
See Comment page 1172

*Collaborators listed at the end of the Article
Correspondence to:
Christopher J L Murray, Department of Health Metrics Sciences, Institute for Health Metrics and Evaluation, University of Washington School of Medicine, Seattle, WA 98195, USA
cjlm@uw.edu



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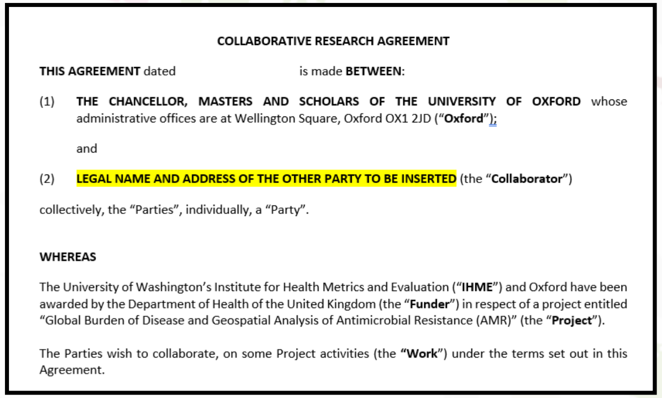
AMR data collection challenges



COLLABORATIVE RESEARCH AGREEMENT

THIS AGREEMENT dated is made **BETWEEN:**

(1) **THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD** whose administrative offices are at Wellington Square, Oxford OX1 2JD ("**Oxford**");

and

(2) **LEGAL NAME AND ADDRESS OF THE OTHER PARTY TO BE INSERTED** (the "**Collaborator**")

collectively, the "Parties", individually, a "Party".

WHEREAS

The University of Washington's Institute for Health Metrics and Evaluation ("**IHME**") and Oxford have been awarded by the Department of Health of the United Kingdom (the "**Funder**") in respect of a project entitled "Global Burden of Disease and Geospatial Analysis of Antimicrobial Resistance (AMR)" (the "**Project**").

The Parties wish to collaborate, on some Project activities (the "**Work**") under the terms set out in this Agreement.

Privacy issues

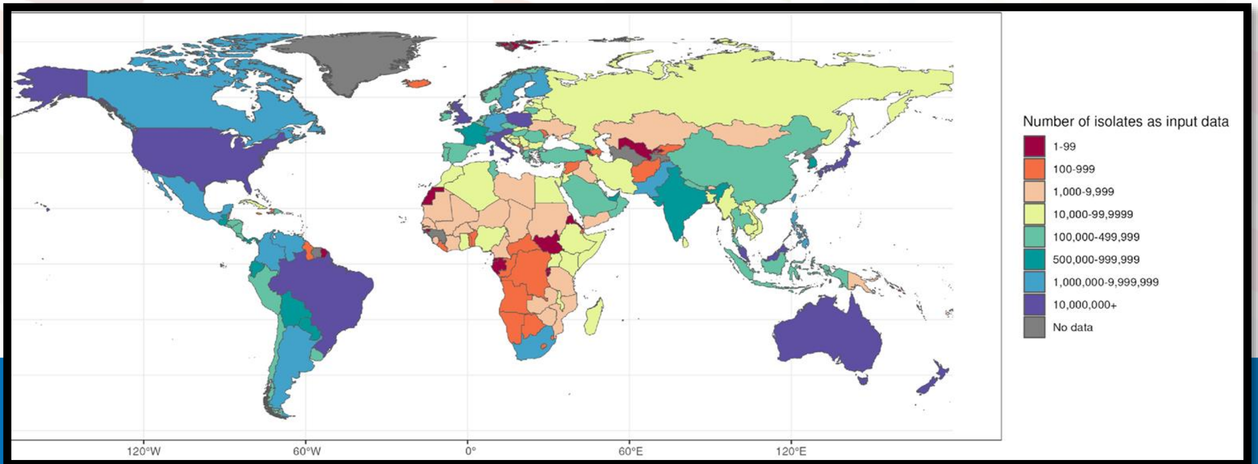
- Patient de-identification – Has patient's identity been protected?
- Security – Is the data fully secure, e.g. under EU data protection law?

Academic issues

- Intellectual property – who holds the rights to the data?
- Restrictions on use – What limits do data holders place on 3rd party research?
- Authorship/collaboration – Will 3rd party users invite original data holders to collaborate?
- Time limitation – How long can 3rd parties use the data?

Equity

- Data access – Can qualified researchers, including those from LMICS (where data often originates), apply to use the data?



GRAM collaboration with IDDO, the data experts

The Infectious Diseases Data Observatory (IDDO) provides the methods, governance & infrastructure to translate data into evidence that improves outcomes for patients worldwide

Data contribution by researcher

Terms of Submission: outlines responsibilities and permissions of data contributor as the data controller, and IDDO as the data processor

Application to reuse data

Data Access Application: The why and how of the proposed research

Data Access Committee Review

Assessment of: Reasonable use, ethics and equity

Release of data to applicant

Data Use Agreement: what researchers are allowed to use the data for & their responsibilities, including appropriate credit.

AMR Data Repository

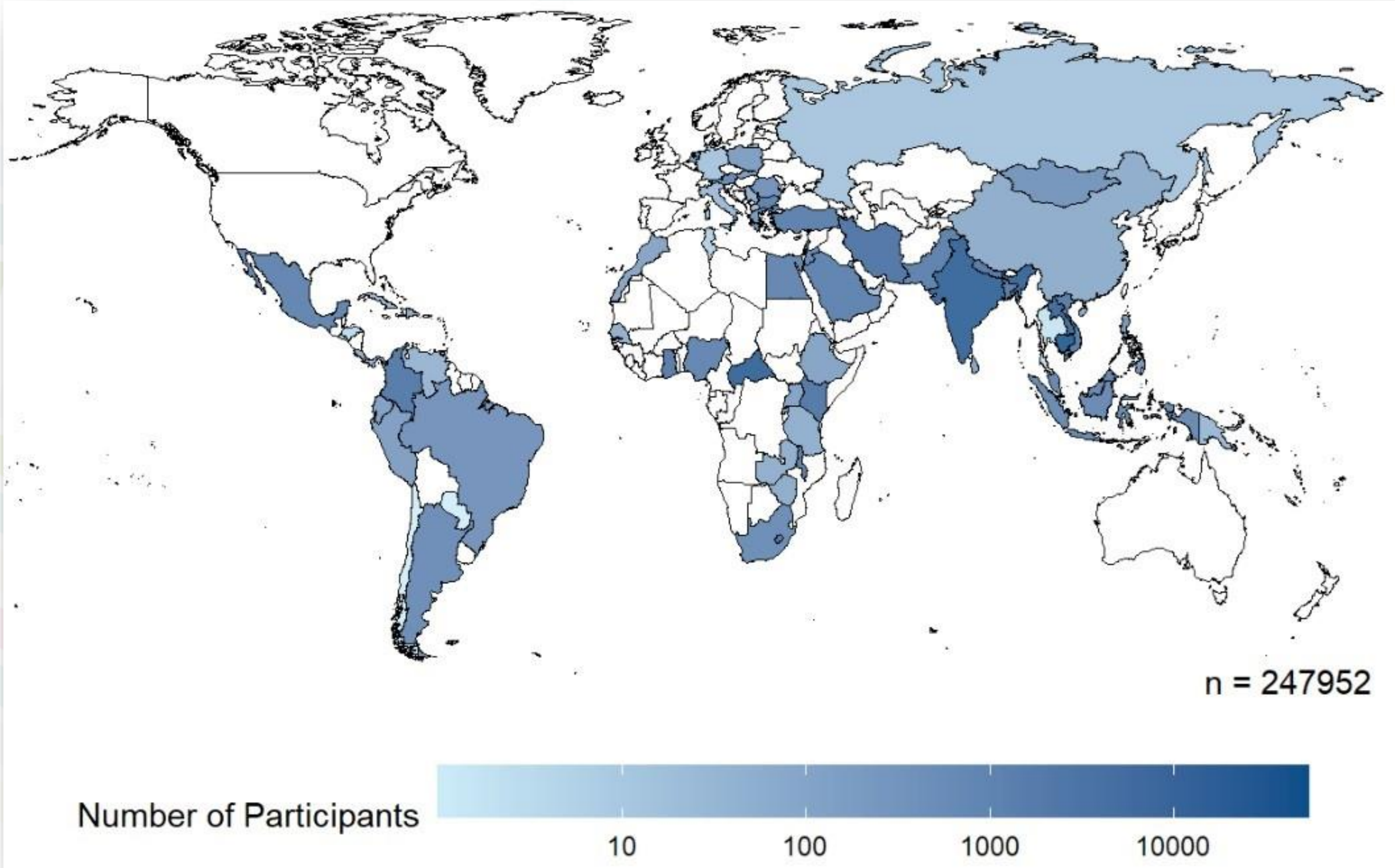
Total patients: more than 250,000

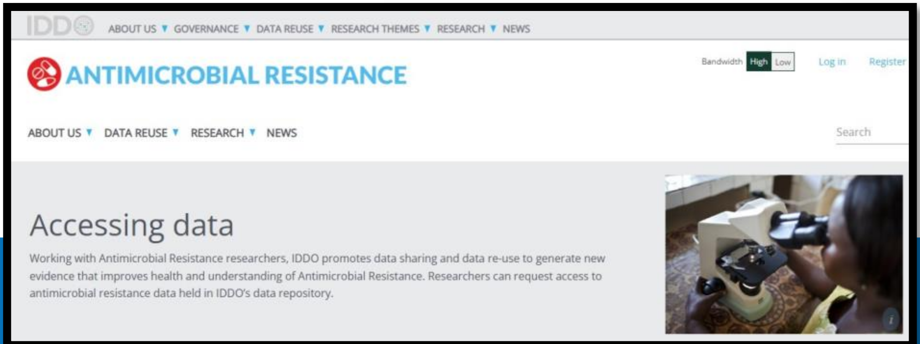
Total countries covered:

- **69 countries (54 LMICs)**

Total datasets: 38

Total collaborators: 24





Datasets in the repository

Total patients: 250,000

Total countries covered:
- **69 countries (54 LMICs)**

Total datasets: 38

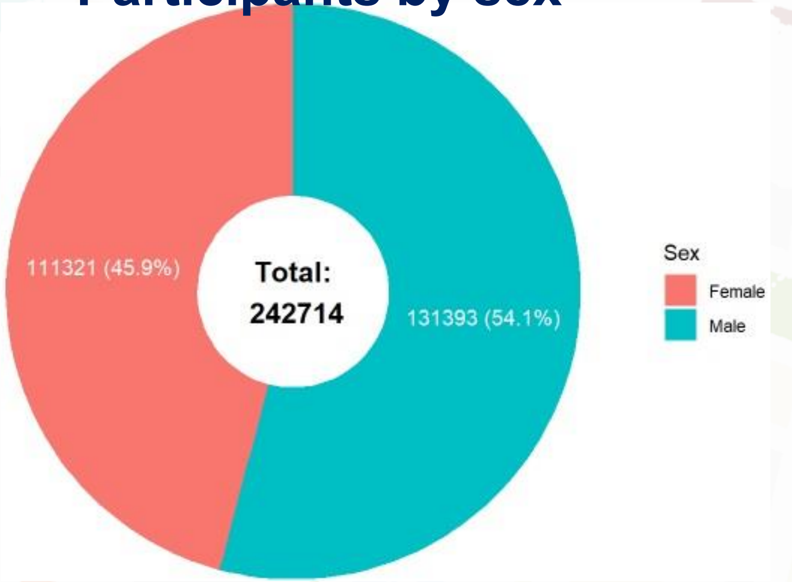
Total collaborators: 24

New GRAM 2 Collaborator	Dataset	Date signed ToS	Fully curated
U. of Sydney	Sri Lanka	2023	Yes
	NeoSeap/multicountry	2024	Yes
ACORN	Asia/Africa multi-coun	11-Nov-24	Yes
Existing Collaborator	**Dataset**	**Date signed ToS**	
INICC	GRAM 1 (multicountry)	10-Sep-24	Yes
COMRU-AHC	GRAM 1 (Cambodia)	11-Sep-24	Yes
	GRAM 2 (Cambodia)	11-Sep-24	Yes
CTMRF	GRAM 1 (India)	15-Sep-24	Yes
	GRAM 2 - A (India)	15-Sep-24	Yes
AGES	GRAM 1 (Austria)	27-Sep-24	Yes
	GRAM 2 (Austria)	27-Sep-24	Yes
BARNARDS	GRAM 1 (Nigeria)	01-Oct-24	Yes
MU of Varna	GRAM 1 (Bulgaria)	01-Oct-24	Yes
Nat. Ref. Lab.	GRAM 1 (Cyprus)	04-Oct-24	Yes
SEAP	GRAM 1 (multicountry)	04-Oct-24	Yes
LNBCSP	GRAM 1 (Cen. African Rep.)	14-Nov-24	Yes
	GRAM 2 (Cen. African Rep.)	14-Nov-24	Yes
LSHTM-MBIRA	GRAM 1 (multicountry)	15-Nov-25	Yes
LSHTM-MBIRA	GRAM 2 (multicountry)	15-Nov-25	Yes
INCMSZ	GRAM 1 (Mexico)	19-Nov-24	
	GRAM 2 (Mexico)	19-Nov-24	
IDRC	GRAM 2 (Uganda)	28-Nov-24	Yes
Monash Univ.	GRAM 1 (Fiji)	29-Nov-24	
CTMRF	GRAM 2 - B (India)	17-Dec-24	Yes
LOMWRU	GRAM 1 (Laos)	18-Dec-24	Yes
INICC	GRAM 2 (multicountry)	27-Jan-25	Yes
NPHO	GRAM 1 (Greece)	18-Feb-25	Yes
KCCR-BNITM	GRAM 1 (Ghana)	26-Feb-25	Yes
NIPH	GRAM 1 (Netherlands)	27-Feb-25	Yes
AKU	GRAM 1 (Pakistan)	26-Mar-25	Yes
	GRAM 2 (Pakistan)	26-Mar-25	Yes
UPCH Lima	GRAM 1 (Peru)	14-Apr-25	
UPCH Lima	GRAM 2 (Peru)	14-Apr-25	
MU of Varna	GRAM 2 (Bulgaria)	10-Jun-25	
BNITM-NIMR-H	GRAM 2 (Tanzania)	01-Aug-25	
SBBU (Sheriga	GRAM 1 (Pakistan)	13-Aug-25	
HCL Lyon	GRAM 1 (France)	01-Sep-25	
HCL Lyon	GRAM 2 (France)	01-Sep-25	
BNITM-KCCR	GRAM 2 (Ghana)	06-Sep-25	

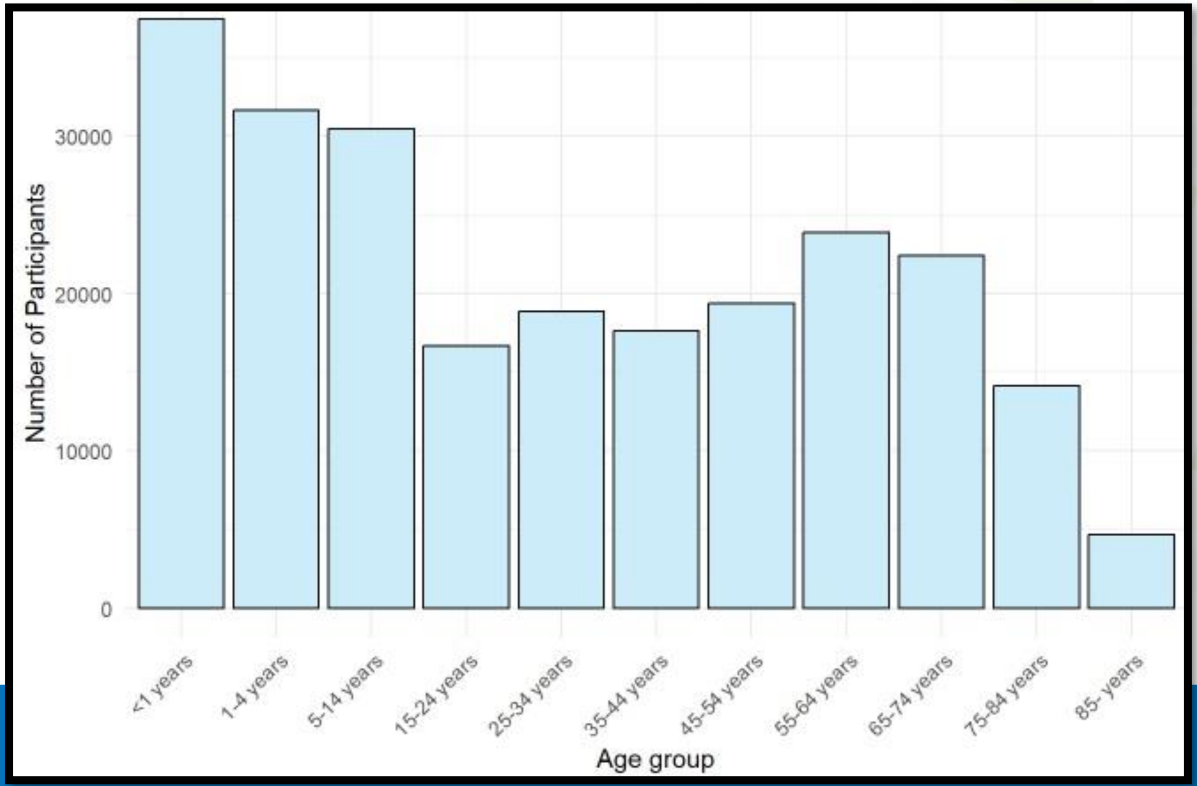
Participants (patients) in the AMR repository

Total participants: 250,000 (69 countries)

Participants by sex

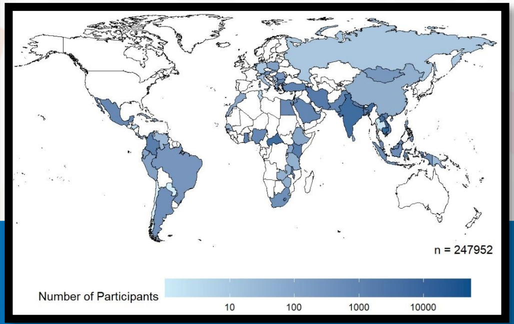


Participants by age group



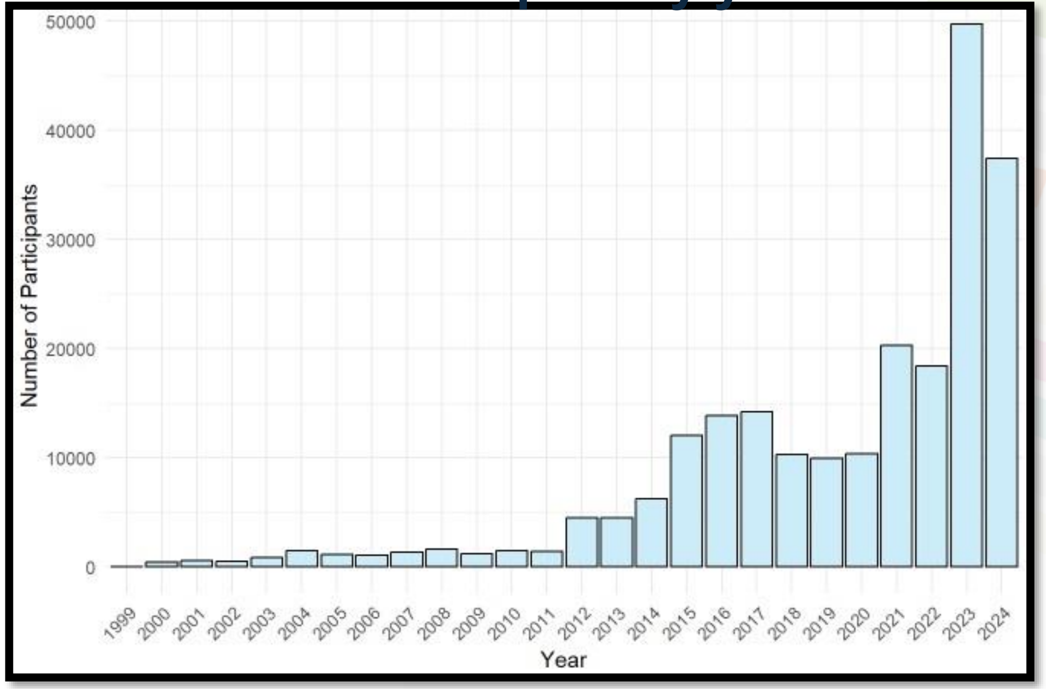
Participants by country

Country	Number of participants
Cambodia	53,374
C. African Rep.	32,440
India	32,280
Lao	24,310
Iran	9,924



AMR repository samples by year, bug, and sample type

Patient samples by year

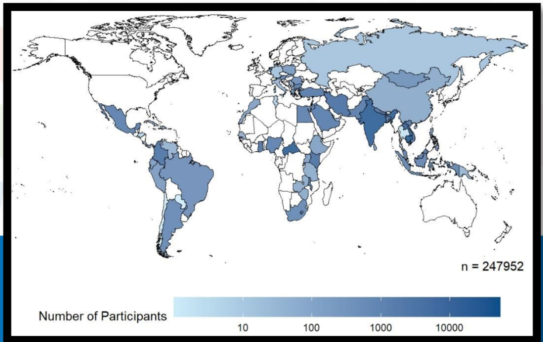


Samples by pathogen

Pathogen	Number of isolates
E. coli	23,185
S. aureus	18,159
K. pneumoniae	12,946
Salmonella typhi	12,025
Acinetobacter spp	10,200
P. aeruginosa	7,180
Shigella spp	3,397
Enterobacter spp	3,230
Proteus spp	1,417
Serratia spp	981
S. pneumoniae	942
N. gonorrhoeae	807
Citrobacter spp	757
E. faecium	713
S. pyogenes	420

Samples by sample type

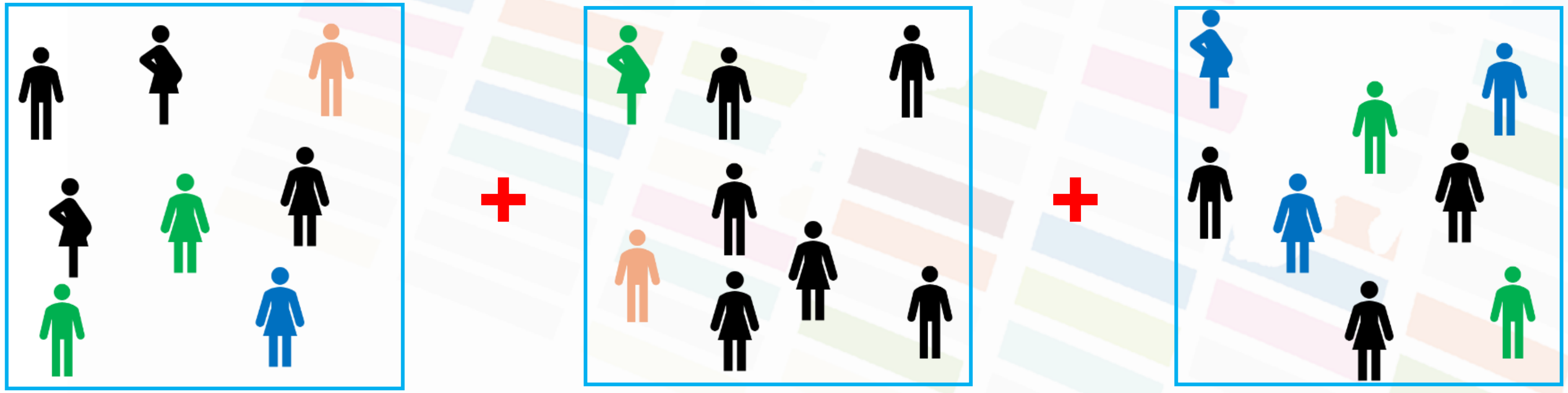
Sample type	Number of isolates
Blood	115,053
Cerebrospinal Fluid	5,648
Sputum (respiratory samples)	21,605
Stool	13,732
Urine	36,709
Total	**192,747**



Data Reuse

Why reuse data?

- Data are scarce and scattered
- Meta-analyses of original, individual patient-level data maximises the value of data collected
  - Greater statistical power
  - Sub-group analyses are possible



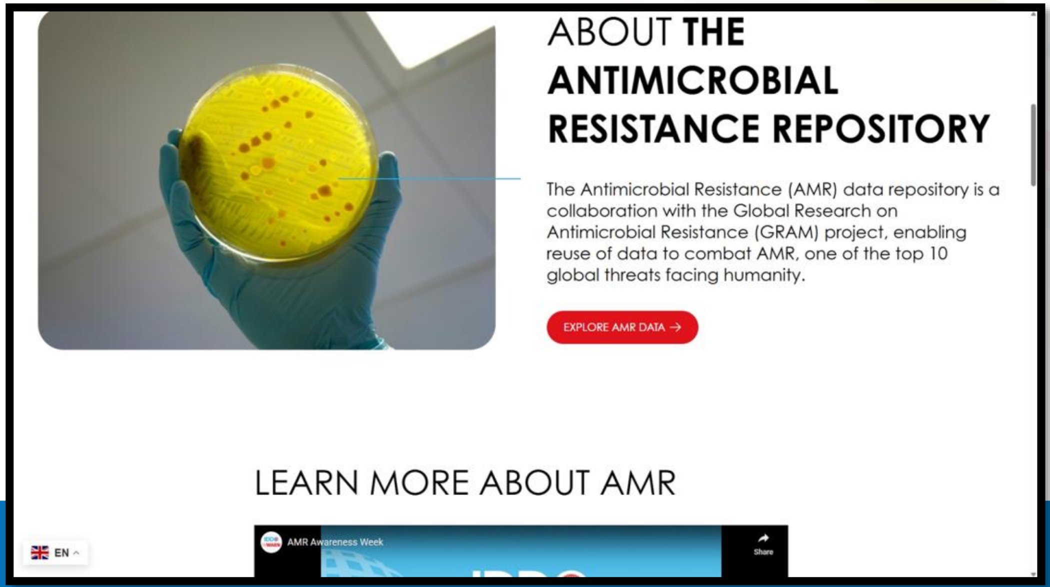
Exploring AMR repository data: sample types, outcomes, patient age

The Fleming Fund
wellcome
GRAM Global Research on Antimicrobial Resistance
IDDO INFECTIOUS DISEASES DATA OBSERVATORY
THE GLOBAL HEALTH NETWORK Enabling research by sharing knowledge

Accessing data in the repository

Use GRAM data in your research!

https://www.iddo.org/amr/data-reuse/accessing-data



Contributing AMR data to the repository

- IDDO-GRAM collaboration was established to enable effective storage and reuse of GRAM data. IDDO is acting as a trusted data repository for the GRAM project.
  - Data curation and harmonisation of GRAM data
  - Inclusion in the IDDO repository for third party sharing

www.iddo.org/data-sharing/contributing-data

- Advantages of data reuse via IDDO:
  - Promotes sustainability by giving new life to existing data;
  - Enables secondary data analysis;
  - Provides equitable and fair access to data;
  - Helps to identify gaps by pooling large amounts of heterogeneous data into a single database;
  - Enables inclusion of the populations normally excluded from clinical trials (e.g. children under 5, pregnant women, elderly, patients with multiple co-morbidities);
  - Facilitates further large-scale analysis (e.g. individual patient data meta-analysis);

Visit the AMR data repository

https://www.iddo.org/antimicrobial-resistance

Thank you!

THE GLOBAL HEALTH NETWORK

Enabling research by sharing knowledge

Feedback

Thank you!

We'd be grateful if you could share your feedback on today's webinar by completing The Global Network's webinar feedback survey: https://app.onlinesurveys.jisc.ac.uk/s/oxford/tghn-webinar-workshop-feedback-survey-v4

We would like to thank all our collaborators!

UKaid from the British people

wellcome

IHME

IDDO INFECTIOUS DISEASES DATA OBSERVATORY

The Fleming Fund Regional Grants

This webinar will run again at 15:00 GMT.

Please share with colleagues who may be interested:

Website:

www.tropicalmedicine.ox.ac.uk/gram

LinkedIn:

https://www.linkedin.com/showcase/106820110/admin/dashboard/

Bluesky:

https://bsky.app/profile/gram-oxford.bsky.social