

What does the GRAM Project need to estimate the global burden of antimicrobial resistance (AMR)?

The Global Research on Antimicrobial Resistance (GRAM) Project will consolidate, review, and analyse all available data and scientific information on AMR globally to generate comparable burden estimates for pathogen-drug combinations and clinical syndromes, from 1990 to the present for all 195 countries and territories included in the Global Burden of Disease study. We will also produce geospatial maps of AMR burden as detailed as the data allow, and promote the dissemination of the results to policymakers and the wider public.

GRAM Project data needs

To estimate the global burden of AMR we are seeking anonymised, non-identifiable data from 1990 onward, including:

- 1) patient-level microbiology data, linked to
- 2) clinical records, linked to
- 3) patient outcomes, where available.

- We realise microbiology data may not always be linked to clinical records and patient outcomes, but we welcome a discussion with you about any data you believe might be appropriate to improve GBD estimates.
- If you only have microbiology data, this could still help us to understand the denominators and prevalence of resistance.

Key GBD data variables of interest

Variables that will help us better determine the burden of AMR are listed below

Microbiology-related	Microbiology laboratory-related	Health care facility-related	Patient-related (where available)
Clinical specimen type	Bacterial isolation and identification methods	Type of facility (primary, secondary, tertiary)	Patient unique identifier
Specimen collection date	Antibiotic susceptibility testing methods	Number of in-patient beds per hospital	Admission date
Species identified	Laboratory standard followed	Aggregated antibiotic usage data	Admission ward type where sample was collected
Antibiotic susceptibility	External Quality Assessment scheme that was applied	Names of antibiotics available/prescribed in the facility	Admission diagnosis (ICD-10 code preferred), if available
		Name of facility	Date of discharge
		Facility location (address, GPS)	Community-acquired or hospital-acquired
		Blood cultures per year	Age
			Gender
			Clinical syndrome at time of specimen collection
			Diagnosis at discharge
			Patient outcome
			ICD-10 codes/outcome/discharge
			Date of death
			Antibiotics prescribed

Maps of AMR Burden

In addition to GBD estimates, we aim to provide maps of AMR as granular as the data allow.

Local estimates allow officials and researchers to tailor health interventions in innovative ways, including tracking the effectiveness of AMR prevention.

Geospatial maps show local nuances that national-level sketches do not.

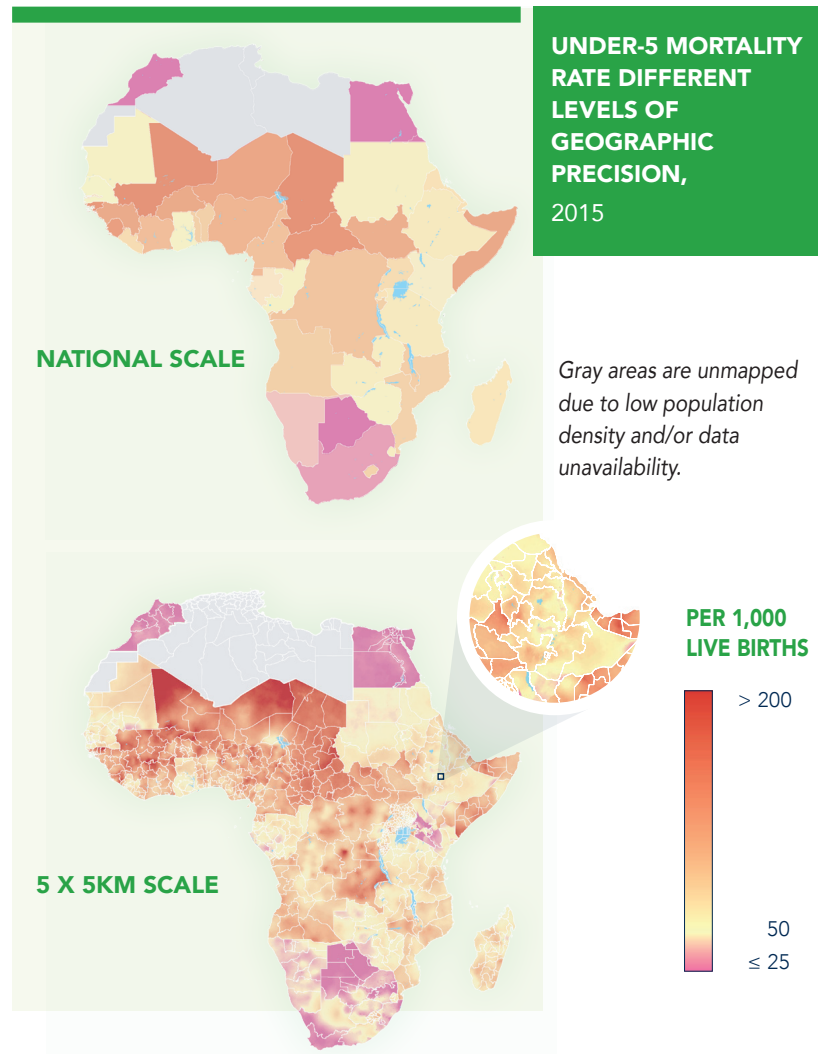
What types of data do we need?

Any geospatial data pertaining to the AMR-related measures we map, including their associated risk factors and covariates.

“Geospatial” data are any data that are tagged with specific geo-coordinates, or “polygons” (larger areas, such as counties or provinces).

AMR covariates of interest include:

- Antibiotic use – a measure of antibiotic treatments consumed by individuals
- Treatment-seeking behaviour – the number of individuals seeking health care services
- Household size – a measure of the population density in single- or extended-family homes



Privacy concerns:

Our estimates and maps will never link granular health data to any specific community, hospital, or individual. Our partner experts can help address any privacy concerns of data providers.

About Us

The Institute for Health Metrics and Evaluation is an independent global health research centre at the University of Washington that provides rigorous and comparable measurement of the world’s most important health problems and evaluates the strategies used to address them. IHME is recognised as one of the preeminent global health research organisations in the world.

GRAM is a partnership between IHME and the University of Oxford, with support from the UK Department of Health’s Fleming Fund, the Bill & Melinda Gates Foundation, and the Wellcome Trust. In Oxford, GRAM is the flagship project of the Oxford GBD Group, established at the Big Data Institute in 2018.

GRAM is directed by Strategic Lead Prof Alan Lopez, who co-authored the seminal Global Burden of Disease Study in 1996 with IHME Director Prof Chris Murray. Other senior staff include Dr Christiane Dolecek, Prof Susanna Dunachie, and Dr Catrin Moore, of the University of Oxford, and Prof Andy Stergachis of the University of Washington.

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