Global Antimicrobial Resistance and Use Surveillance System (GLASS)

Progress and the Way Forward

3RD HIGH LEVEL TECHNICAL CONSULTATION AND MEETING ON SURVEILLANCE OF ANTIMICROBIAL RESISTANCE AND USE FOR CONCERTED ACTIONS

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Outline

- What could be the GLASS contribution to global health?
- What has GLASS achieved?
- What could be the next steps for GLASS to fulfill its mission?
- Conclusions

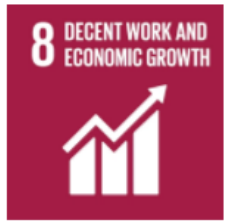
AMR Threatens Global Progress

AMR strikes hardest on the poor
- → Rate of resistance is high
- → Lack of affordable treatment
- → Poor infection prevention

Untreatable infections in animals Threaten sustainable food production for our population

Antimicrobials are fundamental components of all health systems

Antibiotic residues from hospitals, pharmaceutical companies and agriculture contaminate the water



*Cumulative costs of AMR is predicted to be US $120 trillion by 2050

It is crucial to balance access, innovation and conservation of antimicrobials to contain AMR

*World Bank Group Report on Drug-Resistant Infections (March 2017)

Sustainable Development Goal AMR Indicator

Goal 3: Ensure healthy lives and promote well-being for all at all ages

TARGET 3.d: Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks

Proportion of bloodstream infections among patients due to

- methicillin-resistant *Staphylococcus aureus* (**MRSA**)
- *Escherichia coli* resistant to 3rd generation cephalosporin

➢ **GLASS is the source for the AMR SDG indicator**

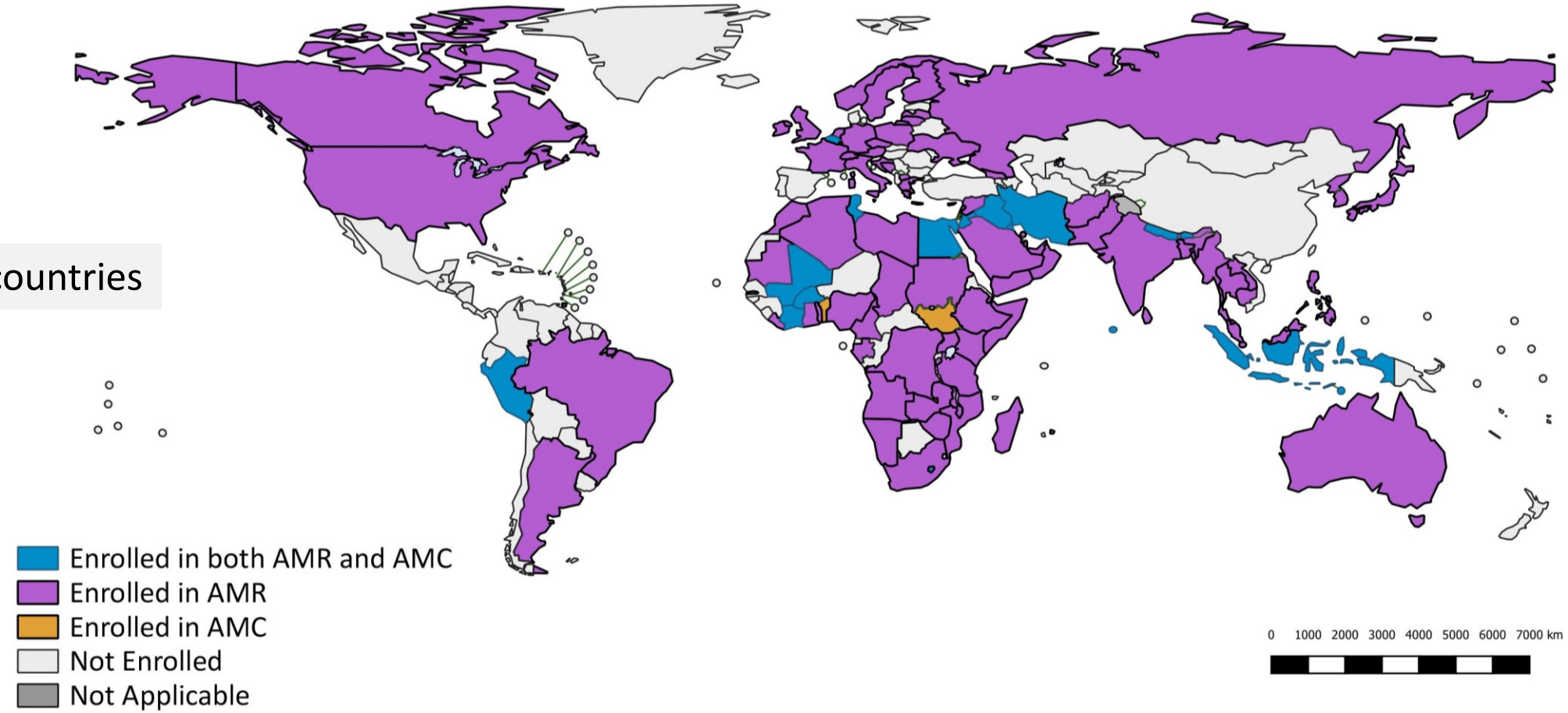
GLASS contribution to the global health agenda

- Through:
  1. standardized approach to the collection, analysis, and sharing of AMR, AMC and AMU data;
  2. fostering national surveillance systems; and
  3. promoting One Health model for AMR surveillance.


WHAT HAS BEEN ACHIEVED?

Countries enrolled in GLASS as of April 2021

N = 107 countries



World Health Organization

Many partners contributed to GLASS achievements

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
Map Production: Health Statistics and Information Systems (HSI)
World Health Organization

World Health Organization

World Health Organization

GLASS environment 2021

ROUTINE DATA SURVEILLANCE

Antimicrobial Resistance surveillance

(**GLASS-AMR**)

FOCUSSED SURVEILLANCE

Emerging Antimicrobial Resistance Reporting

(**GLASS-EAR**)

Enhanced Gonorrhoeae surveillance

(EGASP)

INITIAL PHASE

Candida spp. AMR surveillance

(GLASS-Fungi)

INITIAL PHASE

SURVEYS AND STUDIES

One Health AMR surveillance

(One Health)

INITIAL PHASE

Point Prevalence Survey methodology for antibiotic use in hospital

INITIAL PHASE

GLASS methodology for estimating attributable mortality due to AMR

INITIAL PHASE

World Health Organization

AMR data: Progress in reporting

Reported to GLASS - AMR	2017 (22 countries)	2018 (48 countries)	2019 (66 countries)	2020 (70 countries)
Number of sites				
Hospitals	466	3,097	5,557	5,942
Outpatients clinics	139	2,358	56,818	60,239
In-out patients	N.A.	N.A.	1,998	6,351
Other institutions	124	560	424	1,089
Total	**729**	**6,015**	**64,797**	**73,621**
Number of patients with suspected infection				
Blood stream	81,920	262,265	441,794	502,584
Urinary tract	415,679	1,424,011	1,888,545	2,577,333
Gastro-intestinal	7,477	10,735	17,061	17,003
Sexually transmitted	2,847	9567	18,572	9,682
Total	**507,923**	**1,706,578**	**2,365,972**	**3,106,602**

Most reporting countries show an increase in the number of surveillance sites!

Progress in LMIC

- 15 LMIC countries that did not submit AMR data to the 2014 WHO AMR Global Report* submitted data to GLASS in 2019
- The progress of countries AMR data submission through GLASS data calls is shown below

Number of LMIC countries and respective surveillance sites submitting AMR data to GLASS data calls.

GLASS Data call *(year)*	LMIC Countries *(n)*	Surveillance sites *(n)*
2017	6	48
2018	12	73
2019	22	234

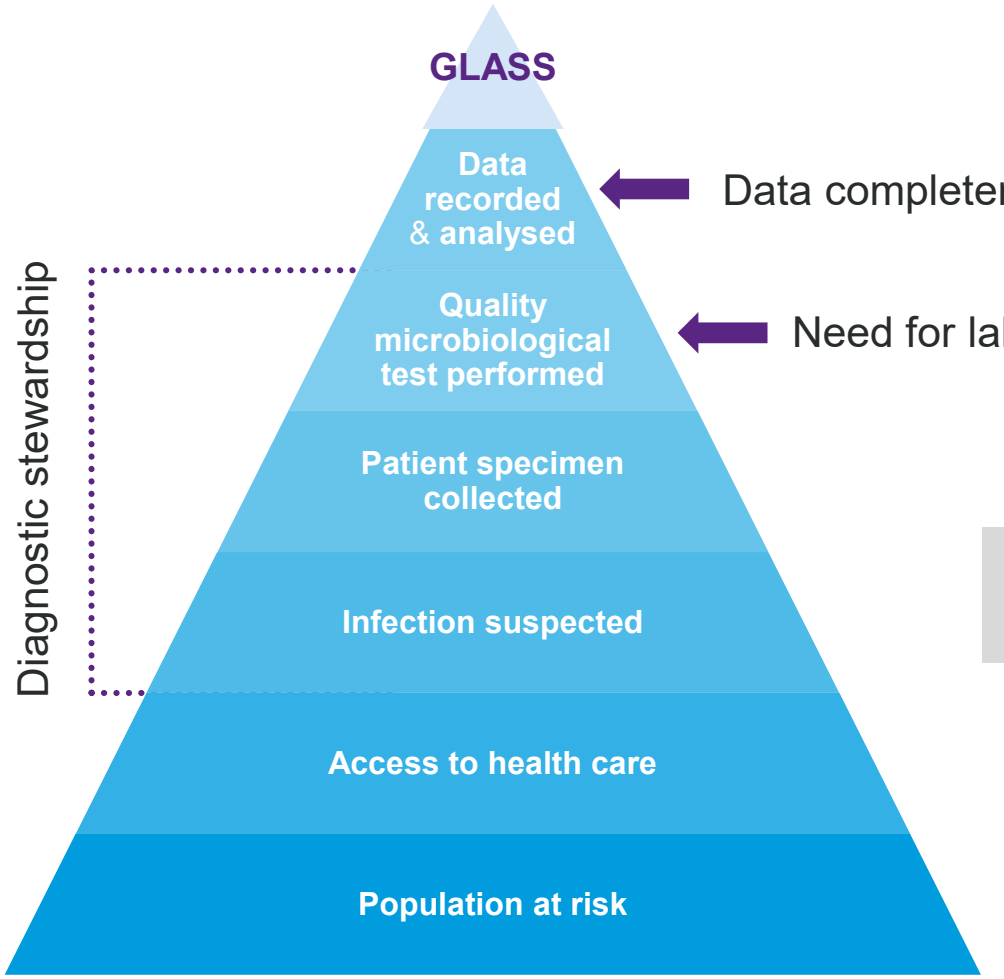
*WHO, 2014. Antimicrobial resistance: global report on surveillance. At https://www.who.int/publications/i/item/9789241564748.

Constraints

1. **Aggregated data**
   - Inability to evaluate the combination of multiple drug resistance in pathogens

2. **Data completeness and representativeness**
   - Countries are at different stages of the development of their national AMR and AMU surveillance systems.
   - In many countries, the reliance only on routine clinical sampling may heavily impact the data representativeness

Shortcomings due to weaknesses in the local systems



Data completeness & representativeness

Need for laboratory strengthening

- **But no country must be left behind!**
- **Additional surveillance approaches are needed.**

Moving forward, while maintaining GLASS objectives

➔ Foster national surveillance systems globally
➔ Conduct global monitoring of AMR and AMU

- **Two-pronged approach for surveillance:**
  - Continue the data collection based on routine clinical sampling of patients
  - Application of complementary strategies such as surveys to improve quality, completeness and representativeness of data.
- Assessment of impact on human health of select types of AMR causing bloodstream infections.
- Application of new technologies, including new and more agile IT tools and incorporation of molecular markers of AMR to the reporting.
- Fostering the use of AMR/AMU data for policy making, and integration with other health information and data from other sectors.
- Collaborating with FAO and OIE for the development of a Tripartite Integrated Surveillance System (TISSA).

Conclusion

- The challenge ahead of us to improve and consolidate GLASS is very difficult. No doubt.
- But this is a worthy effort. A robust GLASS will be the legacy of our time for the future generations!
- More than ever, we will need the support from all of you: countries, WHO CC, partners and all stakeholders.
- Over the coming years, we will monitor progress on country capacity and GLASS strengthening and expansion.

➢ **We look forward to continuing this journey with all of you!**


THANK YOU!