

Project for Master Thesis

Measuring the global response to antimicrobial resistance, 2021–2022: a systematic analysis of 156 countries

Study outline

Antimicrobial resistance (AMR) is a substantial challenge for global public health in the 21st century associated with significant health and economic burden. National action plans (NAPs) are the primary mechanism for guiding national strategy and action for antimicrobial resistance governance. For 2020-2021, we systematically reviewed the contents of NAPs on AMR from 114 countries, applying a governance framework containing 18 domains and 54 indicators in three integral areas: policy design, implementation tools, and monitoring and evaluation (Patel et al. 2023). The results revealed great differences across indicators and between countries, reflecting findings from previous studies indicating that governance and implementation of NAPs is mostly fragmented and insufficient.

All indicators have been updated for the period of 2021-2022, now including a total of 156 NAPs. The objective of our new study is to compare both data sets (2020-21 and 2021-22) and display changes over time across indicators and domains as well as countries and regions. Depending on the availability of recent AMR burden and Antimicrobial Use (AMU) data, we further consider to analyse NAP governance indicators together with data on AMR burden to identify potential associations between specific governance indicators and domains with low and high AMU / burden of AMR.

The overall aim of this study is to provide an overview of progress on the governance of AMR NAPs and generate policy advice on which indicators may be prioritized when designing and implementing AMR NAPs. We anticipate to submit the final paper to a high-ranking peer-reviewed journal.

We are looking for a master student to support the analysis, particularly by:

- Calculating and constructing scores for both data sets using a principle-component analysis
- Identifying ways to visualize changes in scores in a meaningful way; this would involve the generation of tables, graphs, maps and other potential visualizations such as a dashboard
- Perform data analysis to identify potential associations / correlations between governance indicators and AMR burden

Collaborating partners:

University of Edinburgh Medical School

Global Health Governance Programme at the Usher Institute for Population Health Sciences and Informatics

Robert Koch Institute

Unit for Healthcare-associated Infections, Surveillance of Antibiotic Resistance and Consumption

Kiel Institute for the World Economy

Department for Global Health Economy

Hasso Plattner Institute

Digital Global Public Health

Literature

Patel, J., Harant, A., Fernandes, G., Mwamelo, A. J., Hein, W., Dekker, D., & Sridhar, D. (2023). Measuring the global response to antimicrobial resistance, 2020–21: a systematic governance analysis of 114 countries. *The Lancet Infectious Diseases*, 23(6), 706-718.