THE NEED FOR A MULTIFACETED APPROACH TO FIGHT AMR

CONTEXT
Antimicrobial Resistance (AMR) remains a monumental challenge for health systems, professionals and policymakers all over the world. Like a pandemic, it does not distinguish between borders and income, even though some countries are more affected than others, and reliable data is often hard to come by.

Identified as one of the top 10 global health threats by the World Health Organization (WHO), AMR is major cause of deaths and, with fatalities linked to drug-resistant infections growing every year, it burdens health systems and hurts economic activity.¹

While health and agriculture are the most affected sectors, AMR is spreading into the environment with dire consequences for animals, humans, and plants.² As with other environment-related phenomena, human activity and growing population are major factors of a multi-dimensional conundrum.

IMPACT
It is estimated that, in 2019, 4.95 million lives were lost to AMR, with even higher figures of patients whose diagnosis, treatment and recovery were hindered due to lack of appropriate diagnostics and effective antibiotics, especially at point of care (POC) level.³

Prolonged hospital stays and increased healthcare costs due to AMR are draining public health systems thus limiting the ability to adequately respond to other health needs. Lack of updated and reliable data compounds the problem.

RESPONSE
AMR has been gaining visibility in global and national health agendas for the last two decades, with the O’Neill Commission⁴ seen as a distinct milestone and several WHO-led initiatives focusing on different aspects of AMR following suit in seeking coordination and standardising the collection of data on AMR for planning, prevention and intervention programmes.⁵
Interinstitutional cooperation built upon the One Health approach embodies the necessary collaboration between constituencies and cooperation between stakeholders.\textsuperscript{6,7}

The fight against AMR has no boundaries and national action must be framed within regional strategies linked to global interventions. At the European Union level, the European Commission has been coordinating with member states in the design and implementation of guidelines on AMR. These guidelines encompass prevention and treatment, while supporting research and development (R&D) of new and effective antibiotics and adopting measures against antibiotic shortages through the European Health Emergency Preparedness and Response Authority (HERA).\textsuperscript{8} The European Parliament, meanwhile, has been exploring the potential of public research and manufacturing of antibiotics, with special emphasis on Tuberculosis treatments, as part of a health-oriented industrial policy.\textsuperscript{9}

\textbf{WAY FORWARD}

The dearth of new and effective antibiotics and affordable and accessible diagnostics has a negative impact on the fight against AMR. While it reflects the unique nature of the products, it also highlights the imbalances and shortcomings of the current R&D model, fuelled by profit rather than medical needs.

There is a growing consensus around the need to support alternative innovation mechanisms\textsuperscript{10} that, through prizes and other incentives not based on monopolies or market exclusivities, can deliver adequate means to counter and turn the tide on AMR. Efforts to steward research into development of viable products are being combined with more recent initiatives aimed at gathering knowledge behind publicly supported and/or not-for-profit models and their ability to populate the antibiotic pipeline.\textsuperscript{11}

A comprehensive intervention against AMR cannot rely exclusively on antibiotics and must encompass other health technologies, such as vaccines and diagnostics. Even though the manufacture of these products differs greatly from antibiotics, they face similar hurdles in terms of development and access (especially at POC level).

\textbf{OPPORTUNITIES}

The fight against AMR should be genuinely transversal and cannot be an isolated effort. Linkages must be sought with established structures, such as WHO, the Joint Programming Initiative on Antimicrobial Resistance (JPIAMR) and the Transatlantic Taskforce on Antimicrobial Resistance (TATFAR). These in turn must contribute to ongoing initiatives, including Universal Health Coverage (UHC), Pandemic Preparedness and Response, and clinical trial transparency, and be taken in consideration in novel ventures involving health technologies, artificial intelligence and technology transfer.

It needs to be an inclusive endeavour that allows for the collaboration between actors, stakeholders and concerned parties around a shared agenda with mid- and long-term commitments and goals (in line with global calls like the Sustainable Development Goals or Eradication of Viral Hepatitis C). It must be comprehensive, harnessing all health technologies and making use of every public policy and legal instrument available to achieve a reduction of AMR in all settings.
CONCLUSIONS

• An effective fight against AMR needs to be sustained (and sustainable) and incorporate experiences and knowledge from an array of fields.

• Access policies should be tailored and take account of specificities for vaccines, therapeutics and diagnostics in order to ensure a comprehensive and effective response.

• While public health authorities must play a leading role, collaboration of other actors (public and private) is critical.

• A common long-/mid-term agenda with clearly defined goals, discussed, agreed and endorsed by relevant actors is needed.

• Use of health-sensitive intellectual property management tools, as well as promotion and enhancement technology transfer, are fundamental steps for a successful fulfilment of objectives.

• The fight against AMR and the development of new and effective antibiotics needs to be linked to other global initiatives/challenges, especially pandemic response, SDGs and UHC.

RECOMMENDATIONS

• Governments’ public support for early research on antimicrobials and related technologies, through public research institutions or in partnership with private actors, should be acknowledged with accessibility clauses and guarantees of public return on public investment. Priority should be given to the development of affordable and accessible diagnostics.

• Intergovernmental Organisations Initiatives, such as the Quadripartite, should continue and the Antimicrobial Resistance Multi-Stakeholder Partnership Platform be consolidated as a mechanism to exchange and share information; other organs like WHO R&D observatory or FAO AMR Working Group should engage bilaterally and coordinate interactions with Member States. Closer synergies, shared priorities, should be sought with the Global Leaders Group on Anti-Microbial Resistance.

• Pharmaceutical industry must collaborate with governments and international organisations in assessing the pipeline for effective antibiotics and diagnostics; this would require disclosing research data, including clinical trials and compounds libraries.

• Civil society must keep AMR on the public agenda at national, regional and global levels, with special emphasis to the plight of the health systems in low- and middle-income countries, the consequences of increasing AMR rates in environmental settings, and the lack of sustained investment in the development and delivery of affordable and accessible diagnostics.
ENDNOTES


6. Best exemplified by the ongoing cooperation between the Food and Agriculture Organisation (FAO), the World Health Organization (WHO), the United Nations Environment Program (UNEP) and World Organisation for Animal Health (WOAH).


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