

Topic 2: Combating the spread of Antimicrobial Resistance in developing countries

World Health Organisation

I. Introduction

When bacteria, viruses, fungi, and parasites develop the ability to withstand the effects of drugs that were once efficient at treating infections, this is known as antimicrobial resistance, or AMR. This makes treating common disorders more difficult or perhaps impossible. Even though AMR is a global issue, its effects and spread are more noticeable in underdeveloped nations. Inappropriate use of antibiotics and the spread of resistant infections are caused by a number of factors, including uncontrolled access to antibiotics, fake or inferior medications, inadequate sanitation, overcrowded medical facilities, and a lack of diagnostic equipment.

AMR poses a challenge to human rights to development, life, and health, making it more than just a medical problem. Infections that are easily treated elsewhere can become life-threatening in many low-income areas. The disproportionate suffering of marginalized and vulnerable groups exacerbates health disparities and jeopardizes the survival and standard of living of millions. The issue necessitates immediate, context-sensitive responses as well as international cooperation.

With the discovery of penicillin in 1928, the antibiotic age got underway, and by the middle of the 20th century, it was widely used. Globalization, lack of regulation, the proliferation of fake medications, inadequate infection control in medical facilities, and overuse and misuse in humans and agriculture have all contributed to the rapid development of AMR. WHO released its first global strategy on AMR in 2001. Coordinated worldwide responses were emphasized in both the 2015 Global Action Plan and the 2016 UN High-Level Meeting.

II. Key Terms

Antimicrobial Resistance (AMR): The ability of microorganisms to survive exposure to medicines that would normally kill them or inhibit their growth.

Antibiotics: Drugs that treat bacterial infections. Overuse or misuse of these drugs is the main driver of AMR.

Counterfeit/Substandard Medicines: Fake or poor-quality drugs that fail to completely eradicate infections, fostering resistance.

One Health Approach: A collaborative strategy recognizing that human, animal, and environmental health are interconnected in addressing AMR.

Antimicrobial Stewardship: Coordinated interventions designed to improve and measure the appropriate use of antimicrobial agents by promoting optimal treatment regimens.

GLASS (Global Antimicrobial Resistance and Use Surveillance System): A WHO initiative tracking global AMR patterns and antibiotic use.

III. Past International Actions

- **WHO Global Strategy for Containment of AMR (2001):** The first coordinated attempt to frame AMR as a global health crisis.
- **Global Action Plan on AMR (2015):** A WHO-led framework urging member states to create National Action Plans (NAPs), focusing on surveillance, stewardship, and awareness.
- **UN General Assembly High-Level Meeting (2016):** The first time AMR was debated at the UNGA, elevating it to a political and development issue.

- Human Rights Council Resolution 35/23 (2017): Linked AMR to the right to health and called for international solidarity, particularly with LMICs.
- Tripartite Collaboration (WHO, FAO, WOAHA): Promoted a One Health approach integrating human, animal, and environmental health.
- GAP-AMR Review Mechanism (2020–present): Monitors implementation progress of member states.

IV. Timeline of Key Events

<i>1928</i>	Discovery of penicillin and start of the antibiotic era
<i>1940s-1960s</i>	Mass production of antibiotics and increased widespread use, resistant strains begin to emerge.
<i>2001</i>	WHO issues its first global containment strategy
<i>2015</i>	WHO adopts Global Action Plan on AMR
<i>2022</i>	Lancet study finds 1.27 million deaths globally in 2019 linked to AMR, mostly in developing countries
<i>2024</i>	Reports from Sub-Saharan Africa and South Asia identify AMR as a top cause of preventable deaths

V. Current Situation

The spread of antimicrobial resistance in developing nations has reached a critical point, with far-reaching consequences for public health, economic stability, and global security. According to the WHO's Global Antimicrobial Resistance and Use Surveillance System (GLASS), resistance is rising in over 90 countries, but its most severe impact is concentrated in low- and middle-income countries (LMICs). The Lancet reported that in 2019 alone, 1.27 million people died directly from AMR-related infections, and over 75% of these deaths occurred in LMICs. In Sub-Saharan Africa, AMR has now become one of the top five causes of death, surpassing long-recognized killers such as HIV/AIDS in some areas. Common infections like urinary tract infections, pneumonia, or bloodstream infections—once easily treatable—are increasingly untreatable, leading to prolonged hospital stays, higher costs, and rising mortality. This health burden is accompanied by severe economic implications: the World Bank projects that, if unchecked, AMR could reduce global GDP by 3.8% in some developing regions by 2050, pushing tens of millions into extreme poverty. AMR is not only a localized problem but also a global one, as resistant pathogens spread quickly through travel, trade, and migration, threatening international biosecurity.

The key drivers of this crisis are deeply interconnected with systemic weaknesses in healthcare and governance. The lack of diagnostic capacity forces doctors to prescribe antibiotics blindly, often resorting to broad-spectrum treatments that accelerate resistance. Weak pharmaceutical regulations mean antibiotics are often sold over the counter without prescriptions, especially in South Asia, while counterfeit and substandard medicines undermine effective treatment. Poor sanitation, overcrowded clinics, and limited infection-control measures allow resistant pathogens to spread unchecked, and widespread public misconceptions—such as the belief that antibiotics cure viral illnesses like colds or COVID-19—further fuel inappropriate use. Agriculture is another major factor: more than 70% of antibiotics worldwide are used in livestock, and in many developing nations this occurs without oversight, contaminating food chains and water sources. Efforts to combat the crisis remain fragmented.

While some countries have drafted National Action Plans (NAPs), only about one-quarter of LMICs have fully funded and operational strategies. International support from NGOs and programs such as the Fleming Fund, GARDP, and ReAct has provided critical assistance, but without long-term investment in surveillance systems, regulation, and education, the AMR threat will continue to grow at an alarming pace.

VI. Major Parties Involved

India: India is the largest consumer of antibiotics in the world and faces some of the highest rates of resistance globally. Studies in 2023 showed that over 60% of bacterial isolates in ICU patients were resistant to third-generation cephalosporins. Widespread over-the-counter sales of antibiotics, aggressive pharmaceutical marketing, and weak regulation have all contributed to the crisis. Although India has a National Action Plan on AMR, its effectiveness has been undermined by uneven enforcement, funding gaps, and limited coordination across states.

Uganda: Uganda provides an example of positive progress in combating AMR. In 2019, Kampala piloted a hospital-based stewardship program that successfully reduced inappropriate antibiotic prescriptions by 26% within a year. Supported by the UK Fleming Fund, this initiative shows the impact of international partnerships in low-resource settings. However, outside of pilot projects, Uganda still faces challenges with sanitation, limited diagnostic capacity, and rural access to quality medicines.

United States: The United States plays a leading role in AMR research and pharmaceutical development. Through programs like CARB-X, it funds innovation in new antibiotics, vaccines, and diagnostics. Domestically, the US promotes stewardship in hospitals and regulates antibiotic sales, though challenges remain in agricultural use. Internationally, it emphasizes AMR as both a health and biosecurity issue, often framing it as a global threat requiring multilateral cooperation.

European Union: The European Union is a global leader in regulating United Kingdom: The United Kingdom is one of the strongest international advocates for AMR action. It was a founding supporter of the Fleming Fund, which provides resources to improve surveillance and stewardship in LMICs. The UK also promotes the One Health approach, integrating human, animal, and environmental health into AMR strategies. While its domestic policies emphasize strict stewardship and oversight, its global leadership role is seen as crucial to mobilizing collective international action.

China: China has emerged as a major actor in AMR debates, both as a large-scale consumer of antibiotics and a key player in pharmaceutical manufacturing. In the past, weak oversight contributed to high rates of misuse, but recent government reforms have tightened regulation of over-the-counter sales and imposed stricter controls in livestock farming. China has also invested heavily in surveillance and supports the One Health framework, positioning itself as both a contributor to and potential leader in AMR mitigation.

Brazil: Brazil faces unique challenges in tackling AMR, with a large informal healthcare sector and limited laboratory capacity for diagnostics. While the government has introduced stewardship and surveillance programs, implementation has been uneven, particularly in rural areas. Brazil's large agricultural sector also relies heavily on antibiotics, compounding the resistance problem. Despite these challenges, Brazil is increasingly active in regional cooperation efforts and engages with global initiatives to address AMR.

VII. Key topics to Debate

- How can LMICs strengthen the regulation of antibiotic sales and prevent over-the-counter misuse?
- Should pharmaceutical companies be held accountable for over-marketing antibiotics in vulnerable markets?
- What funding and structural reforms are needed to improve diagnostics and surveillance in resource-limited settings?

- How can human rights law ensure equitable access to lifesaving antimicrobials and diagnostics?
- What role should agriculture play in international AMR regulation under the One Health framework?
- To what extent should high-income countries finance LMIC action plans, given the global risks of inaction?

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