ADVANCING NATIONAL ACTION PLANS ON ANTIMICROBIAL RESISTANCE AMIDST HEALTH FINANCING CHALLENGES

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Advancing National Action Plans on Antimicrobial Resistance amidst Health Financing Challenges

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The South Centre held a webinar on advancing national action plans (NAPs) on Antimicrobial Resistance (AMR) amidst health financial challenges, on 20 March 2025. The webinar brought together various national focal point leads for NAPs on AMR and international experts. The recording of the webinar is available here: The South Centre | SC Webinar – AMR NAPs, 20 March 2025.

Introduction

Dr. Afreenish Amir, AMR Consultant, South Centre, initiated the session with a warm welcome, introducing the attendees and setting the stage with an overview of the session's goals and background. Countries worldwide are developing and implementing National Action Plans on AMR, tailored to their unique priorities. While progress varies, common challenges persist, notably in securing support from global health funding and domestic financing. This webinar brought together experts to share insights from select countries' NAP implementation experiences, focusing on strategies to overcome health financing obstacles and accelerate AMR mitigation efforts.

Dr. Viviana Munoz, Coordinator of the Health, Intellectual Property and Biodiversity Program at the South Centre, highlighted the South Centre's role as an intergovernmental body supporting developing countries. In the context of AMR, the South Centre focuses on aiding these nations in implementing national action plans and addressing the global antimicrobial resistance challenge.

Advancements on NAP on AMR: Ghana

Ghana's NAP on AMR was presented by Mr. Saviour Yetsukey, Head of the AMR Coordinating Secretariat at the Ministry of Health Ghana. The Ministry of Health identified AMR as a major problem, developed a national policy and the NAP to be able to fight AMR with one health approach in 2012. The four ministries involved in implementation of the NAP on AMR include the Ministry of Health, Ministry of Food and Agriculture, Ministry of Environment, Science and Technology, and the Ministry of Fisheries and Aquaculture Development. The national policy was launched by the president of Ghana; this showed the high level political commitment and interest. The overall goal of the policy is to improve and sustain the health of the population as well as enhancing food security, ensuring responsible use and access to safe, effective, and affordable antimicrobials of good quality to slow the emergence of resistant microbes and prevent the spread of resistant infections with the one health approach. The national action plan has 143 interventions and by 2021 70% of them were implemented. From 2022 to date, long term activities or interventions are considered for continued implementation. There is strong will to continue working, and many stakeholders are supporting the implementation including AMR Multi-Partner Trust Fund (MPTF) projects, the United States Agency for International Development (USAID), World Health Organization (WHO), Korea International Cooperation Agency (KOICA), and Fleming Fund. As a governance structure, the inter-ministerial committee oversee the decision-making for NAP on AMR implementation. Alongside there is an AMR multi-stakeholder platform that includes partners, civil society organizations, academia, and all related institutions.

Significant progress has been made in creating awareness about AMR in Ghana. Key achievements include partnering with civil society organizations to educate rural communities, training media professionals to effectively communicate information on resistance, participating in awareness week celebrations and Food Safety Week, as well as leveraging International Infection Prevention Week to discuss AMR. Partnerships have also been formed with professional bodies, including the Pharmaceutical Society of Ghana. Furthermore, collaboration with pharmacists has enabled outreach to all districts in Ghana, with the Pharmaceutical Society's 5,000 members contributing funds to support community engagement efforts. Pharmacists across regions are actively engaged in disseminating information on AMR through various community platforms, including churches, mosques, market squares, and lorry stations. Additionally, training institutions and media practitioners have been engaged to amplify the message. Street campaigns have also been conducted nationwide. Furthermore, efforts have been made to address animal health, including knowledge, attitude, and practice studies in poultry and piggery, as well as farmer field schools to promote responsible practices and mitigate the threat of AMR. In Ghana, specifically in the Doma district, significant progress has been made in reducing antimicrobial use in poultry farms. Through farmer field school training, farmers have seen a drastic reduction in antimicrobial use, leading to better quality meat and eggs. This initiative has also enabled

farmers to sell their products competitively. Furthermore, Ghana has established a comprehensive surveillance system, covering human health, animal health, fisheries, agriculture, and environment sectors, to monitor and address antimicrobial resistance.[1] The country is collecting and analyzing AMR data, including antimicrobial residues, at the national level through the AMR secretariat. This data is used to inform the country's first annual AMR report, which serves as an advocacy tool to engage policymakers and secure funding for AMR activities. Ghana is also conducting various surveillance projects, including the ESBL E. Coli tricycle project, which monitors AMR in humans, animals, and the environment. Additionally, the country is tracking antimicrobial use in poultry farms, fisheries, and piggery using digital tools. The Environmental Protection Agency is also playing a crucial role in monitoring antimicrobial residues in effluent and waste management. Furthermore, Ghana has expanded its laboratory capacity, increasing its sentinel sites to 14 for human health and adding three more for animal health, thanks to support from the Fleming Fund.[2] Ghana's AMR data collection is expanding, with increasing data points year by year. For the first time, consumption data is being monitored at ports of entry, providing insights into imports and local manufacture. The country has also established a national antibiogram, with data available for 2021-2023, and 2024 data being collated. This data analysis will inform the national medicine selection committee in selecting appropriate antibiotics to treat infections with high resistance levels. A notable concern is the high resistance to Klebsiella particularly in bloodstream infections, as revealed by the national surveillance system. Ghana's AMR data reveals concerning trends. Meropenem and amikacin are being consumed more than aminoglycosides, which have relatively lower resistance levels. This data will inform the medicine selection committee's choices. Additionally, E. coli infections, particularly in urinary tract infections, show high resistance patterns. Notably, pregnant women have high resistance to E. coli, while ciprofloxacin, the first-line treatment for men with E. coli urinary tract infections, has a 62% resistance rate, prompting consideration of alternative treatments like fosfomycin.[3]

Ghana's National Medicines Selection Committee is addressing gaps and challenges in implementing the national action plan to combat AMR. Inadequate commitment and dedication from inter-ministerial levels and difficulty in getting the political class to attend meetings are major challenges. However, engaging chief directors and permanent secretaries has helped to continue implementation. Inadequate funding from the government is another significant issue. To address this, Ghana is working on mainstreaming the NAP into sector-wide action plans, which has already shown success, with the Ministry of Health providing funding to review standard treatment guidelines based on resistance patterns. To further combat AMR, there's a need to advocate for financing and avoid silo programming, focusing instead on a broader approach that incorporates diseases like tuberculosis and malaria. The next steps include engaging stakeholders to develop the NAP2, mainstreaming the NAP into government agencies, and promoting the One Health approach. Notably, Ghana has seen a drastic reduction in antimicrobial misuse in hospitals due to its antimicrobial stewardship program. The country has achieved approximately 70% of its AMR targets, showcasing its commitment to addressing this critical issue.

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[1] T. Jimah and O. Ogunseitan, “National Action Plan on Antimicrobial Resistance: stakeholder analysis of implementation in Ghana”, *Journal of Global Health Reports*, Vol. 4 (2020); e2020067, doi:10.29392/001c.13695.
[2] See https://www.flemingfund.org/countries/ghana/.
[3] B. Asamoah *et al.*,.“High Resistance to Antibiotics Recommended in Standard Treatment Guidelines in Ghana: A Cross-Sectional Study of Antimicrobial Resistance Patterns in Patients with Urinary Tract Infections between 2017–2021”, *International Journal of Environmental Research and Public Health,* Vol. 19 (2022), 16556. Available from https://doi.org/10.3390/ijerph192416556.

Advancements on the AMR NAP: Brazil

Brazil’s AMR NAP was presented by Dr. Andre Abreu, the AMR NAP coordinator at the Ministry of Health Brazil. Brazil, the largest country in South America, is a significant player in global agriculture, boasting the world's largest livestock, poultry, and grain producers. AMR poses a substantial threat to both human and animal health in Brazil. In response, Brazil's health system has prioritized AMR since the 1970s. The country has a robust national immunization program, a strong national laboratory network, and an essential medicines list. Brazil's unified health system provides comprehensive coverage, including programs for HIV, tuberculosis and other diseases. In 2010, the country began regulating antibiotic prescriptions and sales, and in 2018, it launched its first national action plan on AMR, aligning with the Global Action Plan on AMR's five strategic objectives. Brazil's efforts to address AMR include developing guidelines, conducting webinars, and providing free training for health professionals. The country has also strengthened its surveillance capabilities, in collaboration with international partners like the Centers for Disease Control and Prevention (CDC), Pan American Health Organization (PAHO), and American Society. Additionally, Brazil has launched a national infection prevention and control (IPC) program, increased access to safe water and sanitation, and adopted the Access, Watch and Reserve (AWaRe) classification. Notably, Brazil has phased out the use of 12 antibiotics in the animal health sector and established a One Health national policy, demonstrating its commitment to addressing AMR from a holistic perspective.

NAP AMR implementation status is partially implemented due to lack of dedicated funding. To move forward, there is a need to address governance, political and community engagement. Effective governance, monitoring and evaluation (M&E) are essential for prioritizing actions and facilitating discussions with politicians and the community. To make progress, we must adapt the AMR narrative and communication to our local context. The current focus on push and pull incentives and new antibiotic production is distant from our reality. The AMR narrative often presents AMR as an access problem, which is not entirely accurate. To make a meaningful change, we require robust governance, local and regional governance tools, and strengthened integration with other countries. Brazil is currently working on a new NAP to address AMR, with achievable and feasible targets that align with our local reality. However, a significant challenge we face is that many decision-makers and financiers don't fully comprehend the severity of AMR as a global problem. This is partly due to the dominant narrative focusing on developing new antibiotics, which diverts attention from the actual impact of AMR on our population. To overcome this, government ownership, council ownership, and leadership development are emphasized to ensure that efforts are tailored to specific needs and context.

Panel Discussion

Dr. Viviana Munoz discussed the existing international funding streams and initiatives to support the implementation of NAPs on AMR. Addressing AMR requires a development perspective that considers the specific context and challenges of each country. AMR is part of a broader health financing challenge, which is itself a development challenge. Sustainable Development Goals (SDGs) highlight the need to mobilize financing at scale, with an estimated annual development financing gap of $4.2 trillion. In the health sector, approximately 4.5 billion people lack access to essential health services. In this context, international funding for AMR is crucial but remains a relatively small drop in the ocean of financing needed to address the overall health financing gap and achieve the SDGs. Domestic mobilization can be achieved through various mechanisms, including fair taxation of global corporations and the United Nations (UN) Convention. While the AMR community may not discuss these issues extensively, they are relevant to financing AMR efforts. In terms of international financing, there are direct and indirect sources. Multilateral development banks, such as the World Bank, provide direct financing for country-specific health issues like AMR. Indirect sources include the Pandemic Fund, which supports AMR projects, particularly laboratory and surveillance system strengthening. The United Kingdom's Fleming Fund has provided longstanding support through country grants, focusing on surveillance and laboratory systems strengthening. The Global Fund has introduced support for AMR initiatives, providing an entry point for countries already receiving funding. Regional and bilateral initiatives have also been crucial, with organizations like the US CDC providing technical support. However, the impact of reduced funding, such as the US's decision to leave the WHO, is a significant concern. The WHO's core funding and targeted funding for AMR are critical, and promoting support from more funders is essential. Other key players, including the United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Children's Fund (UNICEF), and quadripartite agencies like the Food and Agriculture Organization (FAO) and World Organisation for Animal Health (WOAH), also play vital roles in delivering essential antibiotics and medicines, and their involvement in AMR interventions is crucial. To effectively tackle AMR, international financial partners must work together, especially as global funding decreases. This synergy is crucial, as emphasized in the UN declaration last year. It's essential to support NAPs, prioritizing countries' specific needs and integrating AMR initiatives with other programs, such as pandemic preparedness and universal health coverage. This approach helps strengthen health systems and aligns international financing with core needs. By doing so, we can avoid creating vertical AMR systems and instead foster a more comprehensive and sustainable response to this global health threat.

Dr. Sabiha Essack, University of KwaZulu-Natal, South Africa shared thoughts on the current financing landscape particularly for AMR, and if it is sustainable. Funding for NAP implementation on AMR is available from various global sources. The Multi-Partner Trust Fund aims to raise $100 million to support low- and middle-income countries (LMICs), as stated in the 2024 AMR Political Declaration. The World Bank has also launched an AMR framework for action, working with countries to implement NAPs using quadripartite tools and guidelines. Additionally, the International Centre for Antimicrobial Resistance Solutions (ICARS) collaborates with governments and researchers to implement NAPs through research. The Fleming Fund focuses on surveillance components, although its allocations have decreased over time. At the regional level, individual organizations have limited funds for small-scale projects and pilot tests. Nationally, only a few countries, mostly high-income countries (HICs), have allocated domestic budgets for AMR implementation. The Global North's funding support is declining

due to the US plans on external aid and the European Union's revised budgets prioritizing defense. As a result, LMICs no longer rely on HICs' contributions to address AMR. This is particularly concerning given the escalating public health crisis and extensive health, economic, and societal implications of inaction on AMR.

Dr. Raheelah Ahmed, City St George's, University of London, focused on a health systems approach, specifically integrated care systems. Three key areas to explore are efficiencies, patient pathways, and data-driven decision-making. Health systems must be efficient to respond to future threats and create economies of scale. By examining patient pathways, optimizing data-driven decision-making, and ensuring system efficiencies, we can generate evidence to inform effective approaches to addressing AMR. To achieve efficiencies in patient pathways, it's essential to identify areas where care can be optimized across community, primary, secondary, and tertiary care. This involves determining whether hospitalization is necessary or if care can be provided elsewhere, reducing the "revolving door" of repeated hospital admissions. Additionally, data linkage across the health economy can improve surveillance, intelligence, and system efficiency. Finally, public and societal ownership of AMR initiatives is crucial, enabling the public to drive change and take ownership of addressing this issue. A fully engaged public in their health is the most cost-effective and efficient way for countries to achieve health efficiency. Applying this to AMR, it's essential to think about what a fully engaged scenario looks like, where the public drives and owns the effort. This requires a person-centered approach, going beyond awareness campaigns and frameworks. Successes in HIV and TB efforts in South Africa and India, respectively, demonstrate the impact of public-driven initiatives. Given the limited global workforce, direct public engagement is crucial to combat AMR effectively. To address AMR, there's a need for more sophisticated M&E to track implementation progress across different countries. This requires comparing and analyzing implementation strategies to identify what works and why, in various contexts. The Fleming Initiative is working on developing methodologies to combine implementation data with value proposition evidence. This approach will enable regional comparisons, allowing countries to learn from each other and identify effective strategies. By using a framework that incorporates global burden of AMR data, antimicrobial usage data, and tracks implementation progress, countries can retrospectively evaluate their efforts, compare with similar economies and geographies, and learn from other regions.

Dr. Munoz noted the impact of economic sanctions on LMICs' ability to control AMR. Economic sanctions, particularly unilateral coercive measures, can significantly impact LMICs' ability to fund AMR related activities. These measures, which include trade and financial restrictions, violate international law and human rights instruments. As a result, they hinder countries' ability to respond to health crises, support the right to health, and ensure proper stewardship and access to antimicrobials. The impact is evident in countries like Cuba and Iran, which have been deeply affected by these measures. This can have devastating consequences for vulnerable populations, exacerbating health disparities and limiting access to life-saving treatments.

Dr. Essack discussed solutions to financial challenges. The current financial model, where LMICs rely on Global North contributions, is unreliable. Instead, leveraging financing sources like climate change, pandemic prevention, and the International Health Regulations (IHR) can help address AMR. Notably, the World Bank's Pandemic Fund and the Global Fund have already allocated significant resources to AMR efforts. To ensure sustainability, any external funding should include a dedicated work package that enables countries to progressively take

ownership of AMR NAP implementation and financing from domestic sources, guaranteeing continued intervention after grant funding ends. At the regional level, knowledge synthesis exercises can help identify best practices, barriers, and enablers for NAP implementation. Twinning high-income and low-income countries can also facilitate mutual learning, capacity strengthening, and financial commitment. At the national level, policymakers must be innovative in repurposing domestic funds, leveraging budgets from AMR-sensitive programs, and utilizing existing infrastructure for HIV, TB, and malaria to address AMR. Ultimately, AMR mitigation efforts rely on diversifying financing sources, refining existing models, and devising new sustainable models that draw from both global and domestic financing.

Dr. Ahmed emphasized the need for evidence on whether integrated care models lead to better AMR and IPC outcomes. While some studies suggest integrated AMR and antimicrobial stewardship (AMS) programs improve efficiency, there is a lack of evidence on the impact of integrated health system models on AMR reduction and optimal AMS use.

Conclusion

The case examples of NAPs on AMR of Ghana and Brazil showed that significant progress is being made, yet challenges for effective NAP implementation remain. These include increased financing, avoiding silo programming, contextualizing the interventions to the national context, and improved governance.

To secure investment in AMR from policymakers, it's crucial to present a comprehensive case that encompasses four key areas: health, economic, societal, and political.

The Health Case: AMR poses a significant threat to public health, with the WHO estimating that 1.3 million people die annually due to antibiotic-resistant bacterial infections. A compelling health case highlights the need for effective AMR management to prevent these deaths and protect vulnerable populations.

The Economic Case: AMR has substantial economic implications, with the CDC estimating an annual cost of $55 billion in the United States alone. Investing in AMR can yield significant returns by reducing healthcare costs, minimizing productivity losses, and promoting economic growth.

The Societal Case: AMR affects not only individual health but also societal well-being. A strong societal case emphasizes the importance of addressing AMR to maintain public trust in healthcare systems, ensure food security, and protect vulnerable populations.

The Political Case: The AMR political declaration has been signed by numerous countries, demonstrating a commitment to addressing this global health threat. Policymakers must now deliver on this promise by investing in AMR initiatives, such as integrated programs or funding mechanisms like the MPTF.

To address the complexity of AMR, solutions must come from within, requiring domestic prioritization and stakeholder involvement. This involves a collaborative effort, where community-level stakeholders and others are engaged in the decision-making process. Building trust and transparency is also crucial, with the sharing of data and progress being essential to creating a sense of collective ownership. Ultimately, the international community should support these domestic efforts, ensuring that resources are aligned with overall health priorities, to create a more sustainable and effective response to AMR.

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