The WHO Council on the Economics of Health for All

INSIGHT NO. 2

Approaches and tools to help finance and implement national action plans on AMR

2 SEPTEMBER 2024

» AMR is becoming increasingly recognized as a complex threat to global health, food safety, food security, and sustainable development potentially leading to significant socio-economic damage. But we can turn the tide if we act coherently, quickly and decisively. «

- Her Excellency Mia Amor Mottley, Prime Minister of Barbados and Co-chair of the One Health Global Leaders Group on Antimicrobial Resistance

Executive summary

Antimicrobial resistance (AMR) threatens to become one of the biggest health challenges facing humanity, with devastating consequences, if humanity fails to take immediate action. It is described as a silent pandemic that not only affects human lives and livelihoods but also jeopardizes plants, the lives of animals and the environment around them.

Addressing AMR requires political commitment, not only to secure the pipeline of new antibiotics, but also to achieve:

i. smart health systems that reduce the unnecessary and inappropriate use of antibiotics, with the aim of providing access without excess.

ii. a coordinated One-Health approach to AMR preparedness, utilizing whole-of-government economic and financial policy levers, as is the case with other aspects of Health for All.

This insight focuses on ways in which financial and economic levers and financing and budgeting tools can help guarantee the funding and implementation of national action plans (NAPs) on AMR. Together, the levers and tools, which include outcome-based budgeting, delegated and earmarked financing and joint budgeting, constitute promising approaches to tackling AMR and its far-reaching consequences from a whole-of-society perspective.

While some 178 countries have an AMR NAP, only about a quarter of them follow through the plans with a monitoring framework and domestic financing.[1] The insight discusses five key challenges that hinder proper implementation and financing of the NAPs. It provides policy recommendations along with country examples and cases to illustrate how to apply the recommendations. The challenges, along with policy recommendations, can be summarized as follows:

CHALLENGE #1

Weak political incentives

Recommendation: Focus on the long-term benefits of investing in AMR rather than seeing it as a short-term cost element. It is necessary to redefine value and then work backwards to reorient economic and financial levers and position health as an investment, to ensure Health for All.

CHALLENGE #2

Inadequate data and analysis

Recommendation: In order to maintain integrated regular monitoring and tracking procedures, it is critical to invest in States' dynamic capabilities by building and governing surveillance infrastructures and digital platforms. A strong and functioning surveillance system is the key to tracking and tracing the emergence and spread of drug-resistant pathogens, and the use of antibiotics in human and animal health, as well as in the agricultural sector, and residues in the environment.

CHALLENGE #3

Lack of trust and transparency

Recommendation: Enhancing participatory engagement by various stakeholders in the AMR domain can help build trust and transparency and enhance accountability. This requires States and the governments to invest in their capability to harness social participation and broader public awareness initiatives. Examples of such engagement involve public interest nonprofit organizations working to eliminate the routine use of antibiotics in food animals, as well as to monitor the fulfilment of food industry commitments and publish annual findings.

CHALLENGE #4

Inadequacy of AMR budgets

Countries, especially lower-middle-income countries (LMICs) lack financial resources to carry out national action plans. Alarmingly the 2023 Tracking AMR Country Self-Assessment Survey (TrACSS) results based on responses from 177 countries show that only 20 countries globally have financed their NAPs from national budgets (11%). Moreover in 2023, only 19 low- and lower- middle-income countries had a NAP that they were implementing and actively monitoring.[1] Low-income countries mostly depend on project-based aid, which is donor income that hinges on donor countries' priorities and is vulnerable to volatility.[2] As such, LMICs also need regional and national funds.

Recommendations

1. **Governments should see fit to place priority on national action plans on AMR and create fiscal space for their implementation.**

   Governments, especially ministries of finance, should focus on the long-term impacts of AMR rather than its short-term costs. There is a need to mainstream national action plans on AMR and incorporate them into the budgets and planning of the relevant ministries, and of national and regional development banks. The imposition of pro-health taxes and levies can help generate additional fiscal space for tackling AMR. Windfall taxes represent another possible fiscal policy lever. Such taxes, which apply to the pharmaceutical industry's excess profits, can generate funds for AMR policies. There is a need, not merely for more finance, but also for better finance. It is vital to direct financing to the most critical aspects of the AMR problem and core interventions, including prevention measures.

2. **International financial institutions should use all their lending facilities to channel more funds to AMR.**

   One way to achieve this would be through loan conditionalities for national action plans on AMR, or AMR mitigation policies.

3. **It is necessary to provide global and catalytic funding for different stages in the implementation of national action plans**.

   The Quadripartite partnership established its Antimicrobial Resistance Multi-Partner Trust Fund to provide short-term catalytic and longer-term funds to help implement national action plans on AMR. However the Fund is plagued by a lack of adequate financing. It has raised US$ 27.9 million in commitments from the European Union (EU) and the governments of Germany, the Netherlands, Sweden and the United Kingdom of Great Britain and Northern Ireland to last until December 2024.[3] Apart from creating new funds or entities that focus solely on AMR, it is important to engage with other international funders such as the Global Fund and Gavi, the Vaccine Alliance that work in related domains, and help steer their existing work and agenda towards supporting relevant AMR policies and interventions.

4. **It is crucial to adopt the whole-of-government budgeting approach, and use spending reviews to maximize the efficiency of budgets.**

   The whole-of-government budgeting approach aligns spending decisions with spending needs. It encourages ministries and agencies to coordinate and collaborate among each other to reduce inefficiencies and improve outcomes. Spending reviews count among the powerful instruments that governments use to secure budgets for health expenditure items such as AMR. Spending reviews reveal wasted resources and bring well-performing programmes to light.

CHALLENGE #5

Challenges in financing and budgeting across the multiple sectors

Recommendations

1. **Countries should invest in their capabilities to: establish and strengthen coordination mechanisms across all sectors and different levels of government that are involved in the AMR domain; raise awareness; review progress, and set priorities for their actions.**

   As recommended in the WHO implementation handbook for national action plans on AMR, it is logical to establish a national/subnational governance structure comprising a multisectoral coordinating mechanism, inter-ministerial group, a dedicated secretariat that embraces all related government sectors, and technical working groups.[4]

2. **Use experience gained in other areas of One Health and adapt the financing and budgeting tools that have served in such domains.**

   The tools are as follows:

   a. Outcome-based budgeting: This tool connects budgets with expected outputs or performance, rather than focusing on the spent budget, and provides a basis for an objective evaluation of the efficiency of resource allocation.[5] Easily identifiable outcomes and indicators, such as the consumption of antibiotics and resistance rates, make AMR suitable for the use of this tool.

   b. Earmarked financing: In this kind of financing, one or more tiers of government allocate specific funds from new or existing revenue streams to serve a specific purpose. Usually sin/pro-health taxes are the source of the earmarked funds.[6]

   c. Delegated financing: Funds are allocated to an independent statutory organization, including a health promotion agency or foundation.[6] National trust funds which serve a particular purpose with specific rules about the use of the proceeds can be effective ways of financing countries' AMR activities.[7]

   d. Joint or pooled budgeting: This is another way to fund intersectoral areas of collaboration, with two or more sectors contributing towards a single pool to finance a common goal. The pooling of budgets can occur at the national, regional or local levels and is accessible through grants or the regular budgetary system.[5,6]

   e. Aligned budgeting: This approach involves the creation of a joint board, which sets objectives and agrees on ways to align partners' activities to maximize synergies among the stakeholders. While the partners jointly monitor spending and performance, management remains separate.[8]

This insight serves as a crucial background document to support the negotiations of the political declaration and proceedings of the 2024 high-level meeting of the United Nations General Assembly on antimicrobial resistance.

1. Introduction

Across countries regardless of their income level, the world has a boiling frog syndrome[i] when it comes to attitudes and inaction in addressing the unfolding global challenge posed by AMR. Antimicrobial resistance is one of the biggest health challenges facing the world, with devastating consequences if humanity fails to take the necessary action immediately. A silent pandemic, it not only affects human lives and livelihood but also threatens the lives of animals, and plants, along with the environment around them.[9] This makes AMR a One-Health problem, and tackling it calls for approaches that embrace humans, and the animal, agriculture and environment sectors.

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Just as the world was unprepared for the coronavirus disease 2019 (COVID-19) outbreak that led to a pandemic and devastated lives and livelihoods, it remains unprepared for an AMR crisis that is gaining ground. A study by the Global Research on Antimicrobial Resistance puts at 1.27 million the estimated number of global deaths directly attributable to AMR per year in 2019. Among the 21 regions that the study examined, Western sub-Saharan Africa had the highest burden.[10] Using a similar methodology led to an estimate of 133 000 deaths attributable to AMR in the WHO European Region in 2019.[11] An analysis across 52 countries in the Organisation for Economic Co-operation and Development (OECD), Group of 20 and the EU for 2005–2015 period shows a rise in the AMR incidence from 14% to 17%.[ii] The OECD average conceals a massive variation in resistance ratios, from 35% for countries like Greece, the Republic of Korea and Türkiye to 5% for other countries such as Iceland, the Netherlands and Norway. Outside the OECD, the average resistance rate is 29%, and possibly as high as 42% in countries such as India, the People's Republic of China and the Russian Federation. The statistics reveal that AMR is a problem not just of the developing, low- and middle-income countries but also the advanced high-income ones.[12] This makes AMR a global challenge and global commons problem. While low-income settings might have a higher AMR prevalence compared to others, resistant bacteria will develop and spread globally, and threaten people in all countries. The COVID-19 pandemic laid bare the global impact of cross-border health threats.

Without preparedness and response, projections for 2050 put the estimate of global deaths attributable to AMR at around 10 million per year, which is comparable to the number of deaths due to cancer in 2020.[13,14] Additionally, in the absence of immediate action, AMR will push an additional 28.3 million people into poverty and decrease the global gross domestic product (GDP) by 3.8% by 2050.[15] Comparing such projections to the recent total death toll of 6.7 million[16] and the 3.1% decline in global GDP in 2020[17] due to COVID-19 underscores the risk that AMR could deal a more serious blow than the prevailing COVID-19 pandemic.

The current narrative on AMR is misleading for two main reasons. Firstly, it is pathogen-centred because it primarily designates the issue as a bugs-and-drugs problem rather than a wider matter affecting humans, animals, plants and the environment. Secondly, AMR is presented as a problem of the future, yet, as the data above reveal, it is here and now. While AMR-related death rates have already reached an alarming rate, exceeding those due to HIV/AIDS and malaria globally, they will evidently get worse in future.[10]

Like climate change, biodiversity loss and water crises, addressing AMR and the critical need to maintain the effectiveness of existing antimicrobials is a global commons challenge that needs mission-oriented policies guided by an inclusive common-good approach.[18] This implies that unlike in the case of public and private goods that are produced by governments or businesses, the solution should involve collective interactions and investment. And it calls for shared ownership and governance models, with all actors collaborating.[19] Accordingly, international stakeholders such as WHO, the World Organization on Animal Health, the United Nations Environment Programme, the Food and Agricultural Organization, the World Bank, the OECD and the ReAct network call for a globally coordinated strategy to address AMR, with every country supporting preparedness as a common good.[20,21,12,22]

Like with the responses that the COVID-19 pandemic generated, it is vital to address AMR from a health-systems perspective because it has the potential to undermine entire health systems of nations across the globe. Efforts to strengthen health systems must include a long-term, coordinated and unfragmented global and national response, with an AMR national action plan as its key function.[23] To this end, the State must have the capacity to: plan and set the direction for a long-term, critical challenge; invest in dynamic capabilities to build and govern platforms for the common good; coordinate governance mechanisms and innovative approaches to align multiple sectors;[24] create more and better finance, using the finance and economic levers of a Health-for-All economy,[25] and; establish a new antibiotics innovation ecosystem.[26]

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i The analogy here is that if a frog is put suddenly into boiling water, it will leap out, but if the frog is put in tepid water which is then brought to a boil slowly, it will not perceive the danger and will be cooked to death.

ii The incidence of AMR is defined as the proportion of infections resistant to antimicrobial treatment for eight high-priority antibiotic-bacterium combinations.

The global AMR incidence is doomed to escalate in a business-as-usual scenario. Research and Development face considerable scientific challenges that make it difficult to discover antibiotics early and carry out research on new antibiotics. Researchers already picked the low-hanging fruit of antibiotic discovery in the years between 1960 and 1980. It is now more difficult to find promising compounds. A significant share of the clinical pipeline consists of small tweaks to existing medicine. Additionally, the number of big multinational pharmaceutical companies engaging actively in antimicrobial research fell from 18 in 1999 to six in 2020 (see Figure 1). Today, smaller biotech companies and academia drive innovative research in this field. They struggle to move a compound from basic to clinical research owing to high costs, limited public funding and lack of expertise in bringing a new antibiotic all the way to the end user.[27]

Such limitations in the pipeline fuel the unfolding AMR crisis and necessitate urgent research funding to the small biotech companies and academia. Efforts are under way to address aspects of the problem. They involve the Combating Antibiotic Resistant Bacteria Biopharmaceutical Accelerator (CARB-X)–funded by three Group of Seven governments (Germany, the United Kingdom and the United States)–as well as Wellcome and the Bill & Melinda Gates Foundation, the Novo Holdings' REPAIR Impact Fund, and the AMR Ac¬tion Fund, which is primarily funded by pharmaceutical companies. There is a need to adequately fund such efforts through a blend of public and private funds. Additionally, the portfolio of investments should cover a broad range of projects to ensure the invention of innovative compounds, as in the case with the ongoing work by CARB-X.[28] Ways to address the issue of research on and the development of new antibiotics include an innovation ecosystem where the government has a market-shaping role, placing emphasis on global-priority pathogens, and imposing smart conditionalities on public funds, such as patent pooling.[27,29]

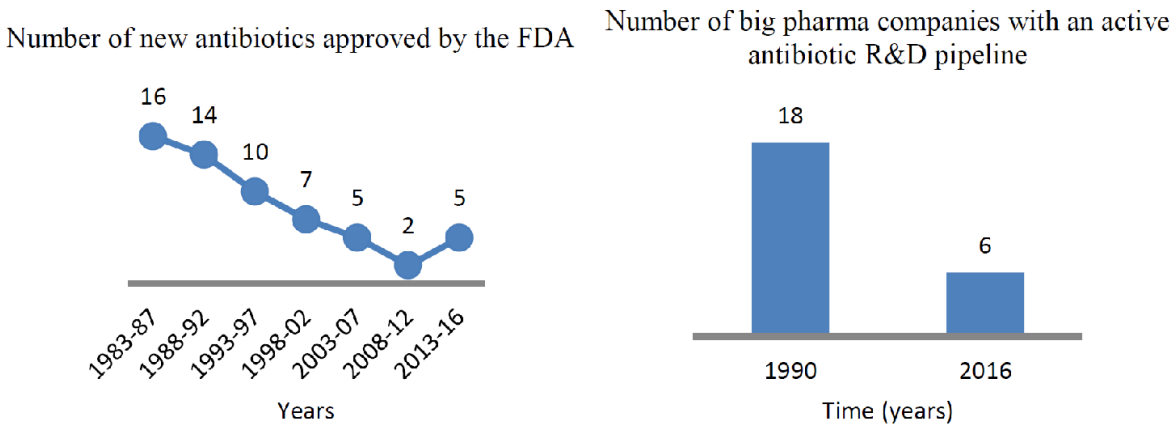
While it is crucial to accelerate Research and Development (microbes evolve, and humankind will always need new products to remain ahead of the curve), this is only one aspect of the AMR challenge. Addressing AMR requires political commitment, not only to fix the pipeline of new antibiotics, but also to achieve:

i. smart health systems that reduce unnecessary and inappropriate use of antibiotics so as to achieve access without excess, and;

ii. a coordinated One-Health approach to AMR preparedness, using whole-of-government economic and financial policy levers, as is the case with other aspects of Health for All.[25]

This insight concentrates on how financial and economic levers, along with financing and tools, can help ensure the financing and application of national action plans on AMR. Together, the levers and tools, which include outcome-based budgeting, delegated and earmarked financing, joint or pooled budgeting and aligned budgeting, constitute positive approaches to tackling AMR and its far-reaching consequences from a whole-of-society perspective.

FIG. 1:
Evidence on antibiotic pipeline



Source: Tackling antimicrobial resistance ensuring sustainable R&D. G20 Summit Final note by OECD, WHO, FAO, OIE, 29 June 2017[30]

TABLE 1

Overview of challenges and recommendations

CHALLENGES	RECOMMENDATIONS
#1 Weak political incentives to address AMR and implement NAPs	Shift the focus on the long-term benefits of investing in AMR such as reduced mortality, the impact on livelihood and the environment, and implementing NAPs rather than seeing it as a cost element in the short run.
#2 Inadequate data and analysis	Invest in dynamic capabilities of the government to build and govern surveillance structures and digital platforms to collect and review data systematically.
#3 Lack of trust and transparency	Harness participatory engagement across all sectors involved (human health, animal health, food and agriculture and the environment) as well as from civil society and the private sector. Enhance the accountability of the public and private sectors.
#4 Inadequacy of AMR budgets	Avoid budget cuts, use tools like whole-of-government budgeting, spending reviews and efficiency criteria to reallocate budgets from inefficient domains to efficient ones. Invest in cost-effective AMR interventions such as antimicrobial stewardship programmes, WASH and infection prevention and control. Integrate/mainstream AMR into existing health systems plans and budgets (to avoid duplication), as well as health-system strengthening initiatives like UHC/the Special Programme on Primary Health Care, emergency response. Specify AMR-relevant interventions and integrate them into broader health systems and health emergency preparedness, response and resilience initiatives and associated budgets at country and global level. Generate higher tax revenues, through windfall and pro-health taxes and channel them to AMR-related policies and activities. Engage existing lending facilities of international institutions such as the IMF and the World Bank on AMR and include investment in and progress on AMR in their loan conditionalities for development financing. Such institutions should find ways to help and even steer countries using their envelopes towards AMR-related investments. Incorporate AMR to the agenda of other big funds such as the recently created Pandemic Fund, the Global Fund or GAVI and get catalytic fund support from them for low- and middle-income countries.
#5 Challenges in coordinating budgets across multiple sectors	Enhance organizations' dynamic capability to anticipate adapt and learn. Have a multi-sectoral coordination body with adequate resources that reflects a One-Health approach to the problem and manages all the interactions between the interested stakeholders. Utilize budgeting and financing tools such as outcome-based budgeting, earmarked financing, delegated financing, joint/pooled budgeting, aligned budgeting which have been used previously in other One-Health domains.

2. The scope and impact of the AMR problem

2.1. Background

AMR occurs when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines. As a result, medicines become ineffective and infections persist in the body, increasing the risk of spread to other people.[31] Antimicrobial resistance poses a serious threat to the lives and health of humans as evidenced by the mortality figures in numerous studies.[10,11,12,13] Additionally, it can seriously affect the quality of life. A case in point is the elevated risk of infection after common surgical and chemotherapy interventions in an environment with 100% resistance (see **BOX 1**).

AMR is also a serious threat to the health of animals, plants and the environment, jeopardizing the basic values in a Health-for-All economy and the achievement of the SDGs. The spread of new resistant strains of bacteria in terrestrial and aquatic animals leads inexorably to an increase in animal suffering and losses (see **BOX 2**). This in turn affects livelihoods worldwide, as roughly 1.3 billion of the global population earn their income and living from livestock and aquatic animals.[32]

BOX 1

AMR and its possible impacts on the quality of life

In a world where antibiotics are no longer effective, the high risk of infection and subsequent death make it imperative to avoid or postpone surgical operations for non-fatal conditions. The result is a significant deterioration in the quality of people's lives. Estimates regarding hip-replacement surgery reveal that the prophylactic use of antibiotics cuts the rates of post-operative infection by up to 50%, and the number of deaths caused by infection by up to 30%.[33] According to OECD calculations, in the absence of effective antimicrobial treatment, the 11 most common surgical and blood-cancer chemotherapy interventions, which require prophylactic antibiotic treatment, would cause around 439 000 additional postoperative infections and 30 700 deaths in the EU.

BOX 2

Different pathways for AMR and animal health

In **Indonesia**, more than 50% of the E. coli bacteria isolated from broiler chickens no longer respond to available antibiotics. Such bacterial infections represent one of the two major causes of mortality in poultry farms in the country. Indonesia has made significant efforts in recent times to introduce a 3-Zone Biosecurity programme for poultry producers. Beside vaccination and good farm management practices, a 3-Zone Biosecurity programme is critical to preventing viruses and bacteria from entering and infecting poultry. It is an important measure that will improve the health of poultry and reduce the use of drugs, including antimicrobial medicines.[34]

Norway stands out in its success at reducing the use of antibiotics in aquaculture. In the 1980s and 1990s fish farmers in the country used antibiotics to treat their salmon against bacterial diseases of fish, thereby releasing huge amounts of antibiotic in the environment. Concerned about rising antimicrobial resistance, the farmers shifted to an alternative solution involving vaccination to protect salmon from bacterial diseases. While Norway is the biggest salmon producer in the world, it is one of the lowest users of antibiotics.[35] In 1986 **Sweden** became the first country to ban the use of antibiotics to promote growth in food-animal production. The country has since progressed immensely by lowering the total sale of antibiotics for animal use from 53.4 tonnes in 1984 to 10 042 kilos in 2018. The progress has contributed to Sweden's comparatively favourable situation with regard to antibiotic resistance. Such success is attributable to decades of intersectoral collaboration and work on disease prevention and animal health.[36]

2.2.
AMR and the environment

Untreated human and animal excreta–which disseminate into the environment through toilets that lack confining barriers, wastewater used for irrigation, the fertilization of crops with untreated animal manure or human waste–is a significant pollutant source that contributes to the development and transmission of AMR.[37] Pollution by chemicals with antimicrobial activity such as pharmaceuticals, certain metals, biocides and other compounds also enhance AMR in the environment.[38] Pollution damages the microbial composition of the environment and disrupts biodiversity and ecosystem services. Additionally, the climate crisis affects ecosystems, human health, animal health and food production in numerous ways. Rise in temperature, and the frequent occurrence of severe weather events lead to floods, which contaminate surrounding communities through wastewater and sewage. This also contributes to increase in bacterial infections and the emergence and spread of AMR.[39] Antimicrobial resistance accelerates with climate change, given that new bacterial pathogens will likely emerge as the climate warms or changes. They may emerge, not only from melting permafrost but also as a result of the unfamiliar approaches, such as new sources of food and agricultural systems, that people may adopt to mitigate the changes.[37]

2.3.
AMR has the potential to create significant losses in economic activity

World Bank estimates for the 2015–2050 period reveal that if humanity fails to take appropriate action, AMR could cause a decline in labour supplies and productivity, elevate health care costs, reduce livestock production and hamper the global livestock trade. While this is a conservative view (health impacts on economic activity), together, such costs will add up to significant declines in income and output and seriously compromise efforts to build thriving communities and societies, and to maintain human health and well-being. Unless governments reorient economies and economic and financial decisions to address AMR, Health for All will remain a pipe dream (see **BOX 3**).

BOX 3
The economic impact of AMR

The World Bank estimates the following global economic impacts under a high-incidence AMR scenario for the 2015–2050 period:[iii 15]

- 214 million people will lose their lives as a result of AMR, leading to a 4.5% decline in labour productivity. The yearly total number of deaths corresponds to 2.3% of the UN-projected population in 2050.
- The volume of real global exports will decline by 3.7% amounting to US$ 1.7 trillion. The loss includes the impact of declines in livestock on trade flows.
- The rising disease burden will increase total health costs by 25% in low-income countries. An 8% increase across all countries is expected, compared to the base case in 2050. This amounts to a US$ 1.2 trillion rise in annual health care costs.
- Such factors conspire to aggravate the declines caused by AMR in economic activity. Compared to a world without AMR, the losses across all dimensions may add up to US$ 23 trillion in global trade and up to US$ 85 trillion in GDP between 2015 and 2050 in present value terms.[iv]
- The real GDP losses by country groupings are estimated at 5.6% for low-income, 4.4% for middle-income and 3.1% for high-income nations. By 2050 a high-AMR scenario could impoverish 28.3 million more people, of whom 90% live in low-income countries.

iii The World Bank study looks at the effects of antimicrobial resistance against three bacteria, namely *Escherichia coli*, *Klebsiella pneumoniae and Staphylococcus aureus*. A high-incidence AMR scenario refers to the case where the resistance rates for the first 15 years of the model follow current rates of resistance, which increase to 100%, thereafter. In the text high-incidence AMR, high AMR and pessimistic AMR scenarios are used interchangeably.

iv The present value calculations are based on an annual discount rate of 1.4%.

2.4.
AMR will further deepen the social stratification within countries

Antimicrobial resistance has disproportionate impacts on disadvantaged groups such as people with low income, women, older adults, children, people with disabilities and refugees (see **BOX 4**).[40,41] Without action, AMR will further deepen social inequalities. Financial and economic policies, can prevent further social stratification and mitigate the effects of existing inequalities.[42]

Antimicrobial resistance comes with vast challenges and impacts. Tackling AMR at the national level requires sustained and coordinated action at scale, across a range of institutions and sectors, including human and animal health, food production, the environment, education and trade. It is important for many different stakeholders, with different approaches, to cooperate and invest sufficiently so as to stave off negative impacts. This is easier said than done in an environment where people traditionally work in silos, carrying out discrete plans and activities.[21] While acknowledging such difficulties at the national level, it is worth noting that initiatives do exist at the global level to address the AMR problem and raise awareness.

» Without action, AMR will further deepen social inequalities. Financial and economic policies, can prevent further social stratification and mitigate the effects of existing inequalities. «

BOX 4

AMR and the deepening of social stratification

Poor households have limited access to safe drinking water, healthcare services and sanitation.[43] They also suffer from poor nutrition and housing conditions. Such circumstances conspire to raise the household members' risk of contracting infectious diseases. According to a study conducted in Kenya, the United Republic of Tanzania and Uganda, patients who had difficulty in affording health care were more likely to default on treatment. Financial and time constraints, coupled with inefficiencies in public health care, create structural barriers that push patients to seek alternative antibiotic access points and to default on treatment, which will further deepen the AMR problem.[44]

Along the gender divide, women are more prone to the risk of infection due to certain biological factors. These include urinary tract infections (which are more common among women), childbirth, abortion and lack of sanitary health care. Women are usually the front-line workers in health care, and are overrepresented in the teaching profession, which are some of the societal factors that put them at greater risk of infection.[44] Additionally, certain gender norms and attitudes towards males and females, that slip into the prescribing practices of healthcare providers, have an impact on women's exposure to the AMR risk. In the United Republic of Tanzania, for instance, men were twice as likely to have an antibiotics prescription as women for a non-specific febrile illness.[45] Antimicrobial resistance also disproportionately affects older adults, whose proportion is rising in the global population. About 40% of deaths in the United States due to infection with the most common AMR pathogens occur in people aged 65 and older. Antimicrobial resistance can also jeopardize the availability and effectiveness of procedures such as hip and knee replacements, heart-valve replacements and chemotherapy. All of the procedures are critical in maintaining older adults' capacities and abilities to function, and in increasing longevity.[12]

3. Current landscape regarding global and national efforts to address AMR

3.1. Efforts to raise global awareness

The key milestone in global efforts to raise awareness on AMR involved the adoption of the Global Action Plan (GAP) on AMR by the World Health Assembly in 2015 (see BOX 5). In its political declaration in 2016, the UN General Assembly identified resistance to antibiotics as the most urgent global threat and declared the GAP the blueprint for combatting AMR.[46] In 2019 the Ad-hoc Interagency Coordination Group on Antimicrobial Resistance published its recommendations on AMR.[47]

» In its political declaration in 2016, the UN General Assembly identified resistance to antibiotics as the most urgent global threat. «

In terms of governance structure, the Food and Agriculture Organization, WHO and the World Organisation for Animal Health took the most important step in 2010 by setting up the Tripartite Secretariat to enhance a coordinated One-Health approach to the AMR problem. Subsequently the United Nations Environment Programme joined the Tripartite Secretariat, which became the Quadripartite Secretariat, to "lead and coordinate the global response to antimicrobial resistance in close collaboration with the UN system".[48]

Another important step was the formation of a One Health Global Leaders Group on AMR in 2020 (see BOX 6). The Tripartite partnership also launched the AMR Multi-Partner Trust Fund in 2019 as part of efforts to support governments, especially those in low- and middle-income countries to address AMR, by financing catalytic, coordinated policy advice, technical assistance, and capacity-strengthening programmes requested by member countries.[49]

BOX 5

The Five Strategic Objectives of the Global Action Plan

The global action plan adopted by WHO in 2015 is considered a major milestones in addressing the AMR challenge at the global level. The overall goal of the action plan is to maintain the ability to treat and prevent infectious diseases with effective and safe medicines that are used in a responsible way, and accessible to all who need them. Achieving this calls for the five strategic objectives below:

- improving awareness and understanding of AMR
- strengthening knowledge through surveillance and research
- reducing the incidence of infection
- optimizing the use of antimicrobial medicines, and
- ensuring sustainable investment in countering antimicrobial resistance, taking the needs of all countries into account and increasing investments in new medicines and other interventions.[50]

The objectives are set out as overarching principles for countries. For their part the countries are expected to develop their own national action plans on antimicrobial resistance in line with the objectives.

BOX 6

One Health Global Leaders Group

The Quadripartite partnership launched the One Health Global Leaders Group in November 2020, to bring together heads of government, ministers, leaders from the private sector and civil society. The Group's mission is to establish global collaborations with governments, agencies, civil society and the private sector through a One-Health approach, and to advocate placing high priority on policy actions around AMR.[51] Their Excellencies Sheikh Hasina, the Prime Minister of Bangladesh and Mia Amor Mottley, the Prime Minister of Barbados co-chair the Group, which also includes members from across different sectors and countries. Among the many pressing problems regarding AMR, the group pays particular attention to the inadequacy of financial support for the sustainable implementation of national action plans. To that end, it zeroes in on internal and external financial resource mobilization, particularly in low- and middle-income countries, to help develop and carry out national action plans.[52] The Group has made a plea for more donor-country support for the Multi-Partner Trust Fund, which has a mere US$ 27.9 million in commitments from the EU and the governments of Germany, the Netherlands, Sweden and the United Kingdom up until December 2024.[3]

The Group has advocated for the high-level meeting on AMR at the UN General Assembly in 2024, and the inclusion of AMR in any global treaty concerning pandemics. Equally importantly, it advocates the consideration of anti-microbial resistance and One Health in the investment decisions of governments and global, regional, national, bilateral, multilateral financing and development institutions, banks and private investors. This involves assessing risks and impacts related to AMR.[52]

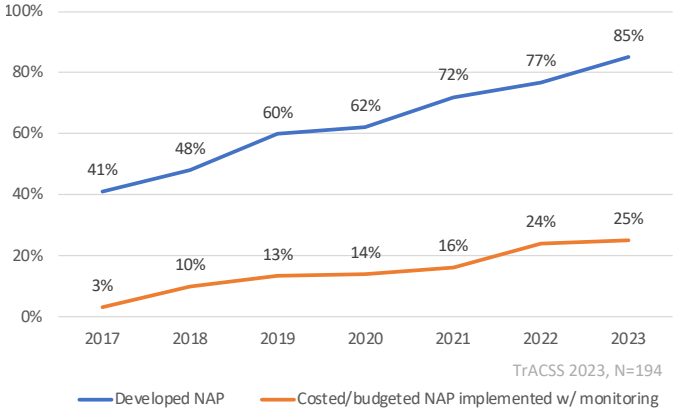
3.2.
National action plans

In addition to such global efforts, countries need to set their own AMR agenda by preparing and carrying out well-designed and targeted national action plans on antimicrobial resistance. Today 178 countries across the globe have AMR national action plans that are aligned with the GAP and reflect its strategic priority areas. The Tripartite, and now Quadripartite partnership, conducts the Tracking AMR Country Self-Assessment Survey which monitors the progress of each country's action on AMR. According to TrACSS results for 2023, of the 177 countries that responded to the survey, 85% have developed a NAP, but only 25% are implementing their plan effectively with financing and monitoring in place. Despite progress in developing and implementing NAPs over time, lack of financing and effective governance mean that the implementation gap continues to pose a major challenge that deserves attention and action (see **FIG. 2**).[1]

The World Health Organization published a handbook for the implementation of national action plans on AMR, which specifies important steps in NAP implementation (see **ANNEX 1** for the steps). The Organization also devised a costing and budgeting tool to calculate and visualize detailed costs for priority activities included in the NAPs on AMR (see **BOX 7**).[4,53] Costing of NAPs is not feasible without the country developing a prioritized operational plan; this prioritization of NAP activities is based on using a scored feasibility and impact matrix. The costing tool's drawback is that it currently lacks guidance on how to calculate the return on investment. This is currently being addressed through development and testing of pilot "investment cases" in three countries.

FIG. 2:

Share of NAP developing and implementing countries out of 194 Member States



Source: World Health Organization, Tracking AMR Country Self-assessment Survey (TrACSS) data 2017–2023. Country progress with development of a national action plan on AMR (TrACSS Q5.1 2017-2021/ Q2.3, 2022-2023).

BOX 7

WHO Costing and budgeting tool

This is a pragmatic and modular tool that is adaptable to the needs of countries and allows different sectors, ministries or even departments to complete in the tool independently. The plans can then be consolidated into a national costed plan. The tool asks for the entries listed below from the user:

- NAP entry: the NAP priorities, objectives and activities that were selected for costing.
- Basic inputs: key parameters relevant to their country, including ministry/names of implementers, names of funders, number of years the implementation will take and unit costs for various items.
- Costing matrix: automatically generated after the NAP entry is completed, and used to insert sub-activities and to enter unit costs and units based on the implementation developed by the country prior to costing
- Funding (optional): existing funds from various sources/donors; an optional but recommended step that may be completed at any time after the NAP entry is completed;
- Dashboards: summarize cost data entered by the user. The Funding Dashboard tab combines cost and funding data by the user.

» The costing tool has now been used in 43 countries, with more than 450 staff trained; it has also been adapted for costing national action plans on health security, highlighting the usefulness of this tool and its flexibility. «

Indonesia and Türkiye were two countries selected for a pilot implementation of the tool in 2019 and 2020, respectively. The key lesson drawn from Indonesia was that existing budget systems and processes almost exclusively concern specific sectors or ministries and cannot address the multisectoral nature of national action plans on AMR. The costing exercise in Türkiye triggered a preliminary discussion between Ministries regarding possible collaboration on joint budget planning to support more collaborative activities of the national action plan on AMR. The costing tool has now been used in 43 countries, with more than 450 staff trained; it has also been adapted for costing national action plans on health security, highlighting the usefulness of this tool and its flexibility.[53]

4. Challenges with the implementation and financing of national action plans and recommendations on what can be done

The responsibility for securing equitable access to effective antibiotics in health-care systems falls on national governments, and NAP implementation should ultimately be financed from sources within a country as part of existing health budget lines. Nonetheless, various challenges exist that hinder the funding and implementation of NAPs. The challenges along with some recommendations to address them are listed below:

CHALLENGE #1

Weak political incentives to address the AMR challenge

Antimicrobial resistance is a serious threat to the sustainability of health systems, human lives, and the overall economy, and its impacts are expected to unfold in the long run. This prevents policymakers, who tend to plan around short-term political cycles, from committing to addressing the AMR problem and incorporating it into their policy agenda. Inadequate analysis of AMR's impact on economies and health systems fuels this lack of political commitment.

Recommendation: It is important to establish political support to the AMR challenge by replacing policy makers and politicians' present value system, that concentrates on short-term efficiency, with one that emphasizes long-term sustainability and places planetary and human health and well-being at the core of all decisions. Countries should start by redefining what they value then work backwards to reorient economic and financial levers, and position health as an investment, to ensure Health for All.[42] Such a vision is a key step for policy makers in their efforts to make AMR a priority in their development plans given that threatens the health and sustainability of humankind, animals, plants, and the environment around them (see BOX 8).

Another important way to garner more political buy-in is to prevent projecting AMR as a new vertical programme. Rather, AMR should appear as a cross-cutting programme that fits into present policy initiatives and plans. Country-level case studies commissioned by the WHO AMR Secretariat–in Ghana, Nepal and Nigeria–guide national AMR teams in incorporating AMR activities into ongoing programmes and projects. The studies assess entry points in existing programmes for: AMR activities for each dimension of One Health, and for; interested stakeholders, and map the stakeholders with appropriate activities. The mapping helps identify the possible needs, and the sources of finance for the AMR policies.[54]

BOX 8

Examples of strong national political leadership on AMR

As a country the United Kingdom is a good example in view of its active AMR agenda. The country published its first five-year AMR strategy in 2013. This inspired the United Kingdom's 20-year vision and five-year national action plan on AMR, which the Government, its agencies, the health family and administrations co-develop in Scotland, Wales and Northern Ireland with support from a range of stakeholders. The United Kingdom appointed an envoy dedicated to AMR in 2019. In addition to these national efforts, the British Government established the Fleming Fund. Meanwhile Sweden, has treated AMR as a priority for many years, which is a reaffirmation of its political commitment to address the problem.[55]

CHALLENGE #2

Inadequacy of data and analysis on AMR

There is a need to back up the narrative with credible data on: the prevalence and types of AMR; illness and mortality rates that can be attributed to or associated with resistance, and; the cost of combating AMR and the likely outcome. This is key in the effort to present AMR as an effective investment case. It is crucial to develop and strengthen–at the hospital, national, regional and global levels–investment cases that specify the actions to take, their costs, and the price of inaction. This is critical for building up a strong national narrative to increase political engagement.[56]

Recommendation: There is a need for more comprehensive analysis of the costs of AMR at the global and national levels. The World Bank report provides essential information and analysis on that front. It is also necessary to establish a more complete picture of the analysis, taking into account all the One-Health cost dimensions of AMR.[v]

v The WHO AMR division is working on a comprehensive report evaluating the costs along the three dimensions of the One Health, meaning the human, animal and environmental dimensions, and computing an aggregate cost for the year 2030. The expected publication date of the report is Fourth quarter 2024. The report will also include a tool that will allow individual countries to incorporate certain basic parameters, and economic parameters that will give them an analysis to help determine which interventions are most appropriate in given settings.

At the national level, it is vital to invest in dynamic State capabilities by building and managing digital infrastructures and platforms. This will help maintain integrated regular monitoring and tracking procedures.[24] A strong and functioning surveillance system is the key to tracking and tracing the use of antibiotics in human and animal health, and in the agricultural sector. Improving dynamic State capabilities in this manner will guarantee the existence and functioning of systems that generate information on and promote understanding of the scale of the AMR problem. It will improve the quality of data collected and ensure more consistent analysis of antibiotic prescription and use. Additionally, it will ensure the assessment of the full economic burden of AMR across all the sectors involved (see **BOX 9**). In addition to a solid digital infrastructure, it is important to invest in a qualified health workforce and equip it with the skills to analyse and interpret data, which plays an important role in processing the data and translating them into policy action.

» A strong and functioning surveillance system is the key to tracking and tracing the use of antibiotics in human and animal health, and in the agricultural sector. «

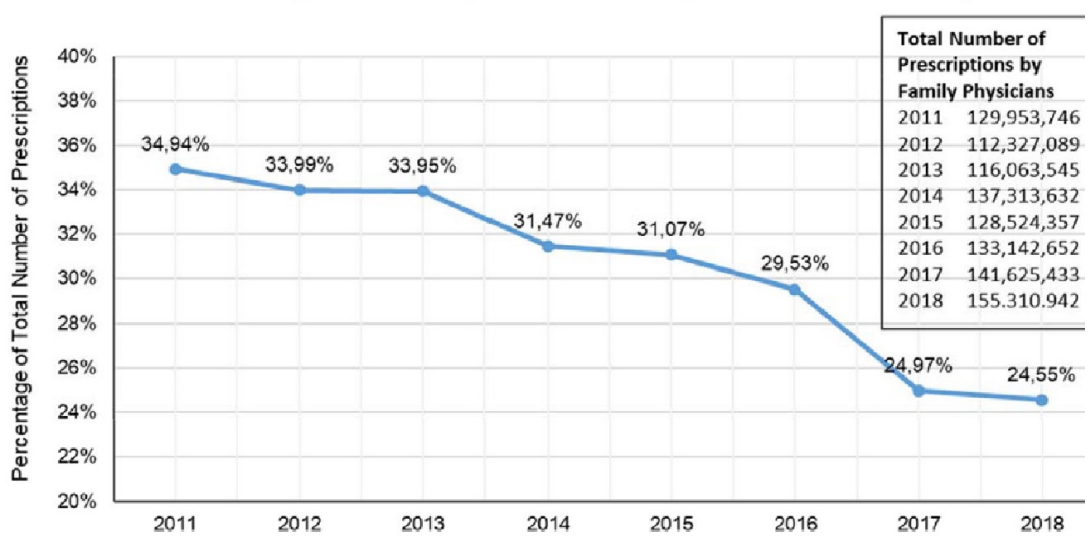
BOX 9

Tracking antibiotic prescription behaviour through the Prescription Information System in Türkiye

Türkiye is a country with a high level of antibiotic consumption and antimicrobial resistance.[57] It developed and implemented the Rational Drug Use National Action Plan 2014–2017– which prioritizes the rational use of antibiotics–to contain the use of antibiotics. Activities and interventions to mitigate antibiotic consumption included maintaining a ban on over-the-counter sales of antibiotics and monitoring the antibiotic-prescription behaviours of primary healthcare physicians. Using a digital platform called the Prescription Information System, which collects prescription data sent to the database of the Ministry of Health, made it possible to monitor and evaluate the prescribing behaviours of family physicians during this period. Data obtained from the system served in training sessions carried out for physicians who prescribe antibiotics at higher rates. This was supplemented with informative meetings on the rational use of antibiotics, organized for all family physicians in all provinces, which led to a significant decline in the share of prescriptions containing antibiotics (See **FIG. 3**).[58]

FIG. 3:

Percentage of antibiotic prescription in Türkiye 2011–2018



Source: Aksoy M, Isli F, Kadi E, et al. Evaluation of more than one billion outpatient prescriptions and eight-year trend showing a remarkable reduction in antibiotic prescription in Türkiye: A success model of governmental interventions at national level. Pharmacoepidemiol Drug Saf. 30(9):1242–1249, 2021.[58]

CHALLENGE #3

Non-transparency in the use of antibiotics in agriculture and food production, and weak governance systems with lack of trust

Trust and transparency are the key ingredients in implementing an effective AMR agenda at the global or national scale. The COVID-19 pandemic showed that trust in the government was essential to ensuring compliance with all health measures.[24] Analogously, countries with lower scores on governance and corruption indexes exhibit higher levels of antibiotic resistance.[59] One important element in building trust in governments is transparency. Transparent governance systems and lower levels of corruption in a country will provide a better environment to introduce and enforce regulations concerning the misuse and overuse of antimicrobials in health, food and animal sectors, and their safe disposal. Weak governance might also be associated with the increased diffusion of substandard and falsified antimicrobials on the market, which is expected to exacerbate the AMR prevalence.

Transparency is also vital in food-animal production, which is an important channel in the transmission of AMR to humans. In 2017, the WHO issued Guidelines on the use of medically important antimicrobials in food-producing animals, which included a call for a total ban on the use of all classes of medically important antimicrobials in food-producing animals to promote growth. In 2021 the World Organisation for Animal Health's reporting system, relying on voluntary reporting, indicated that 42 countries still used antimicrobials for growth promotion in food-animal production. However, the agency has not revealed the countries' identities in order to ensure continued cooperation in voluntary data reporting.[60] This is a serious challenge as having transparent systems that report and publicly announce antibiotic use in agricultural food production is the key to maintaining accountability regarding the AMR problem and preventing the spread of resistance.

Recommendation: It is possible to build trust and transparency by enhancing participatory engagement in the AMR domain.[24] Examples of such engagements include public-interest nonprofit organizations working to eliminate the routine use of antibiotics in food animals as well as monitoring the honouring of commitments made by the food-industry and publishing annual findings.[61] The Antibiotic Resistance Coalition is one such initiative. In their statement on the Muscat Ministerial Manifesto on AMR, the Coalition draws attention to lack of transparency in the use of antibiotics. It pledges to keep a watchful eye on countries, particularly the People's Republic of China and the United States to see whether they commit to reducing the use of antibiotics and curb resistance. None of these countries features on the preliminary list of Manifesto signatories that committed to the targets.[62]

Another initiative is Oceana, the largest international advocacy organization focused solely on ocean conservation. It has been campaigning to increase transparency through the disclosure of information on the use of antibiotics in aquaculture. Such efforts have made impact in Chile, which is soon expected to enact a new law that requires the Fisheries Service to publish data on the use of antibiotics and antiparasitic, on mortalities and on the number of salmon produced by company.[63]

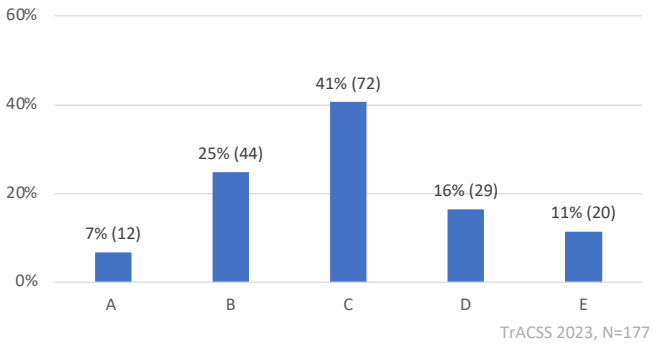
CHALLENGE #4

Inadequacy of AMR funding

While establishing a national action plan is a big step, equipping it with resources and carrying it out is imperative for effective actions against AMR. Countries, especially the LMICs, do not have financial resources to allocate to national action plans. Alarmingly, 2023 TrACSS survey results show that, only 20 countries globally have financed their NAPs from national budgets (see FIG. 4). Additionally, in 2023 only 19 low- and lower- middle-income countries had a NAP that they were implementing and monitoring actively.[1] Low-income countries mostly depend on project-based aid, which is donor income that is susceptible to volatility. The countries also need regional and national funds to ensure secure and sustainable financing.

FIG. 4:

Country progress with AMR NAP.



A: No NAP
B-E: Developed a NAP,
C-E: Implemented a NAP,
E: Financed NAP from national budgets

Source: World Health Organization, Tracking AMR Country Self-assessment Survey (TrACSS) data 2023. Country progress with development of a national action plan on AMR (TrACSS Q2.3, 2023).

RECOMMENDATION 1
Governments should be ready to place a high priority on NAPS on AMR and create fiscal space for their implementation.

This calls for a shift in governments' focus, especially in the ministries of finance, to long-term impacts of AMR and away from the short-term costs of investing in it. Given the serious threat that AMR poses to countries' long-term development, it crucial to mainstream national action plans on AMR and incorporate them into the budgets and planning of national and regional development banks. Once national action plans find their way into the national development agenda, a clear approach to planning, costing and budgeting is a critical first step in making these efforts practicable. It is important to set priorities, and the WHO costing and budgeting tool for national action plans can help in making the relevant funding decisions. A costed NAP is fundamental to identifying funding gaps and mobilizing additional resources to fill the gaps, which makes it possible to carry out the activities successfully.[4]

Use of pro-health taxes and levies can create the additional fiscal space for tackling AMR. Windfall taxes are another possible fiscal policy lever.[24] Applied to the pharmaceutical industry's excess profits; such taxes can generate funds for AMR policies (see **BOX 10**). It is worth noting that countries not only need more finance but better finance, meaning that the financing should be directed to the top priority areas of the AMR problem.[25] Major changes are achievable even with small budgets in AMR settings. It is essential to pinpoint cost-effective areas of action and channel funds to them (See **BOX 11**).

» Given the serious threat that AMR poses to countries' long-term development, it crucial to mainstream national action plans on AMR and incorporate them into the budgets and planning of national and regional development banks. «

BOX 10

Pro-health taxes and levies as innovative sources of financing health

Excise taxes that increase the prices of tobacco, alcohol and sugar-sweetened beverages are an example of pro-health taxes. Increasing such taxes by 50% can raise the tax-to-GDP ratio by 0.7% in low- and low- and middle-income countries on average.[5] Another example of innovative financing–used by the Republic of Korea–involves 1,000 won donated to the Global Disease Eradication Fund (GDEF) from every international flight ticket departing from the country. The money goes towards the treatment and prevention of infectious diseases in low-income countries. Since 2007 the Fund has received 329.5 billion won.[64]

BOX 11

Cost effective AMR interventions and programmes

Stewardship programmes, providing consultation on the prescription of antibiotics, training hospital personnel, infection prevention and control and water, sanitation and hygiene are examples of cost-effective interventions in the AMR domain that are particularly successful in low-resource settings. According to estimates, stewardship programmes decrease antimicrobial consumption by 19% on average, AMR by 1.7%–10.4%, and the length of hospital stays by 9%.[65] Such benefits come at modest costs of US$ 2.5–US$ 12 per capita per year, depending on the country.[12] A group of private hospitals in South Africa that implemented a pharmacist-driven, prospective audit and feedback strategy for antimicrobial stewardship reported a 20% drop in antimicrobial consumption.[66] Improved hand hygiene is another good investment, with an average annual implementation of a purchasing power parity (PPP) of US$ 8 500 per 100 000 people for a net return of around US$ PPP 140 000 across OECD countries.[12]

RECOMMENDATION 2

International financial institutions such as the IMF and the World Bank should emphasize their current AMR agenda more, to raise awareness and use all their lending facilities to channel more funds to AMR.

International financial institutions should incorporate conditionalities on the design and implementation of national action plans on AMR or other AMR mitigation policies in their loans.[25] They should prioritize and emphasize AMR as a development objective of the government programmes that they are financing and provide the national and subnational governments with budget funding and expertise.

The World Bank[67] has already identified AMR as a priority in its agenda, as part of its 20th IDA replenishment (IDA20) Policy Package, and in the Financial Intermediary Fund for Pandemic Preparedness. In countries supported by the International Development Association alone, the IDA20 cycle provides US$ 93 billion in financing for development, with the countries setting priorities on how they use funding.[68] The IMF allocated US$ 650 billion Special Drawing Rights in response to the pandemic. This initiative is applicable to the AMR setting.[69] Although the IMF set up its Resilience and Sustainability Trust in the wake of the pandemic to provide affordable long-term financing and help low- and middle-income countries overcome their structural challenges, including climate change, pandemic preparedness and digitalization, it is possible to extend it to include AMR.[70]

Another remarkable initiative to incorporate AMR into the agenda of international institutions involves the OECD. The OECD Development Assistance Committee included an AMR-action funding tracker as part of its annual review of Overseas Development Assistance. This is an important update that could direct donors towards specific initiatives to fund AMR action and support country-level AMR development.[71]

RECOMMENDATION 3

Global and catalytic funding should be provided for different stages of NAP implementation.

Countries may need some catalytic funding to jump-start the implementation of their national action plans. This is especially true of LMICs in the early stages of their NAP implementation. In addition to the catalytic funding there is a need for stable global funds, given that AMR is a global common good and tackling it requires shared responsibility. The Tripartite partnership established its AMR Multi-Partner Trust Fund to provide short-term catalytic and longer-term funds to support the implementation of national action plans on AMR. However, with a mere US$ 27.9 million raised in commitments from the European Union, the governments of Germany, the Netherlands, Sweden and the United Kingdom to last until December 2024, the Fund severely lacks adequate financing.[3]

» Countries may need some catalytic funding to jump-start the implementation of their national action plans. «

In addition to creating new funds or entities that focus exclusively on AMR, the time is also ripe to engage with other international funders that work in related domains and help orient their existing work and agenda towards AMR policies. The Global Fund, which raises resources for HIV, tuberculosis and malaria, would be a perfect candidate for this category. Given that such diseases heavily depend on effective antimicrobial treatment, it is imperative to include AMR-specific activities in the Fund's proposals, and to encourage ways of optimizing the funders' work in antimicrobial stewardship.[72] It would be useful to start by reviewing the Global Fund's mandate, and establishing whether it is adequate or needs revision and broadening to include AMR policies and activities. In recent times the Global Fund has made promising initiatives to orient its funding activities towards AMR. It recently adopted pandemic preparedness and response as a strategic objective. In its 2023–2025 agenda on building Resilient and Sustainable Systems for Health (RSSH), it emphasized the importance of including surveillance systems to help respond to the growing burden of AMR under the RSSH/PP-Lab Surveillance Module. The Global Fund also strongly encouraged projects on AMR surveillance, which will accelerate the monitoring and prevention of, and response to the antimicrobial resistance of HIV, tuberculosis, malaria and other priority pathogens.[73] In terms of new product development and procurement, Gavi, the Vaccine Alliance is a strong candidate for providing support to countries' AMR agenda.[74]

RECOMMENDATION 4

Whole of government budgeting, spending reviews, and imposition of efficiency criteria on budgets should be utilized more efficiently.

Allocating more budgets to AMR does not necessarily lead to fiscal pressures. Being a highly cross-cutting and multi sectoral issue, AMR can fit into other health systems' plans and budgets such as those for health-emergency preparedness, response and resilience. Reallocating budgets from inefficient domains to health investments, health services, preparedness and the training of the health workforce on AMR can be significant sources of finance.

Whole-of-government budgeting is a useful approach that is well suited to aligning spending decisions with spending needs. Whole-of-government budgeting places a high priority on expenditure programmes that contribute to a set of agreed national goals. Budgeting processes of ministries and agencies focus on results that reflect goal achievement. Ministries and agencies also coordinate and collaborate among each other to reduce inefficiencies and improve outcomes. Implementing a whole-of-government approach and placing AMR among the top priority issues of the health budgets is a way of securing and coordinating budgets around the AMR problem and integrating into existing health budgets. Bangladesh is one country that has achieved that by incorporating AMR into the Communicable Disease Module of its 2017–2022 Health Sector Programme.

New Zealand's Wellbeing Budget is a recent promising example of whole-of-government budgeting. Gender budgeting constitutes another example of a similar approach, while focusing on a narrower goal of addressing gender inequalities. Both approaches rely on explicit criteria to evaluate the impact of budget allocations (see **BOX 12**).[5]

» Implementing a whole-of-government approach and placing AMR among the top priority issues of the health budgets is a way of securing and coordinating budgets around the AMR problem and integrating into existing health budgets. «

Spending reviews constitute another powerful government instrument for securing budgets for health expenditure items such as AMR. Spending reviews reveal wasted resources and bring well-performing programmes to the fore. Depending on the circumstances, governments may also want to consider earmarks and minimum spending targets to secure resources for high-priority programmes in health (see **BOX 13**).

BOX 12

Well-being and gender budgeting

In 2019, New Zealand's Labour Government, announced the so-called Wellbeing Budget which guides the Government's investment and funding decisions, using social and environmental indicators along with economic and fiscal ones.[75] The budget has five key focus areas: mental health, child well-being, supporting the aspirations of the Māori and Pasifika populations, building a productive nation, and transforming the economy. All ministries are eligible to apply for incremental spending, based on how it contributes to inter-generational well-being. The budget included an investment of $NZ 1.9 billion in mental health and a particular focus on reducing child poverty.[76] While it is too early to evaluate the performance of this approach in terms of desired outcomes, it arguably contributed to the New Zealand Government's swift and effective management of the COVID-19 pandemic, by shifting focus from economic growth to the protection of the health and well-being of citizens.

Gender budgeting is a tool that incorporates a gender perspective at all levels of the budgetary process, and restructures revenues and expenditures to enhance gender equality. Countries that have adopted this approach have achieved certain improvements in women's social and developmental outcomes. Mexico pays particular attention to diseases affecting women (such as cervical, ovarian and breast cancers, as well as the prevention of teenage pregnancies) in the health sector as an outcome of gender budgeting. Brazil set up a comprehensive care programme for women's health. In the Netherlands, universities, research institutes and the Minister of Education agreed in 2015 to make the allocation of full subsidies contingent on the awarding of at least 30% of high-level academic and administrative positions to women before 2020.[5]

BOX 13

Spending reviews as a powerful tool to promote efficient allocation of budgets

Spending reviews assess the level and intrasectoral and intersectoral composition of government expenditures. The reviews identify ineffective budget lines and programmes and help redirect the resources to more productive ones. As such these reviews can help the government to raise additional AMR budget by channelling funds from inefficient domains to AMR NAPs. Fuel subsidies that become part of antipoverty programmes are good examples of a strategic spending review. On average the subsidies represent 7.7% of GDP in LMICs, which exceeds the average government health spending in such countries.[77] The World Bank offers support to countries to carry out regular public expenditure reviews.[5]

The Slovak Republic carried out reviews recently. In 2016 it published its first health care spending reviews, which identified potential savings of 363 million euros. The government spotted potential for improvement and asked the Ministries of Finance and Health to carry out a second healthcare spending review, to identify areas where savings could be made and where to reallocate them. In the second round the spending review detected savings of some 730 million euros between 2020 and 2021 that can be turned into additional funds for priority areas such as general outpatient care, staff, long-term care, prevention and mental health.[78]

CHALLENGE #5

Challenges in the multisectoral coordination of budgets

Antimicrobial resistance is a One-Health issue involving multiple sectors, including at the government level. This considerably raises the likelihood of overlaps and conflicts between other national programmes and the AMR agenda. Joint health promotion initiatives between different tiers and departments of government, including AMR, could create imbalances between incentives and rewards. Many governments and ministries, from those dealing with health and agriculture to the environment and trade, have a direct role in AMR mitigation policies and the implementation of NAPs. The costs and benefits of not investing in AMR action are well documented for the human health sector, which makes the AMR an important policy agenda for health ministries. Like all other health issues, AMR should become mainstream across government departments and agencies since it is not possible to mitigate the problem as long as it remains in the silo of the health ministry.

The challenge is that other stakeholders at the government level face certain trade-offs that prevent them from supporting AMR mitigation efforts and policies. For example, the agriculture and food-animal sectors, along with the trade sector make up some of the key pathways for the transmission of resistant organisms, both within nations and globally. Antimicrobials are used in livestock husbandry not only for treatment but also to promote growth. According to estimates, the global procurement of antimicrobials in the animal sector related to the livestock industry is 73–100% higher than the purchases for the human health sector.[79] There is a global increase in the demand and hence the production of livestock for retail meat, which is more significant in middle-income countries like Brazil, India and the People's Republic of China. Excessive use of antibiotics reflects the efforts to meet the increased global consumer demand. Global trade in food commodities plays a role in the transmission of resistant organisms. The situation reflects an obvious conflict of interest for ministries of agriculture and trade. On a strictly global level, trade policies can mitigate the growing AMR burden through bans, user fees and restrictions on food animals raised using antimicrobials. It is important to achieve this without disproportionately reducing the competitiveness and productivity of one country vis-à-vis the rest of the world.[80]

The existence of vertical policy-making structures and funding silos would lower prospects for intersectoral work.[81] This challenge is greater when there is a mismatch between the stakeholder with financial responsibility for delivering the health-promoting action and the action's beneficiary.[6] Indeed, placing a high priority on budgeting for and financing AMR action poses a major challenge that needs to be tackled.

RECOMMENDATION 1:
Countries should invest in their capabilities to establish and strengthen coordination mechanisms across all sectors and the different levels of government involved in the AMR domain, to raise awareness, review progress and set priorities for actions.

The pandemic showed the importance of sub-national governments in delivering frontline services, such as primary health care, population-based health services and the allocation of resources across sectors. The same applies to the context of AMR.[5] The WHO Implementation handbook for national actions plans on AMR proposes an important first step, which is to establish a national or subnational governance structure comprising a multisectoral coordinating mechanism, inter-ministerial group, dedicated secretariat that embraces all related government sectors as well as technical working groups. The mechanisms should have clear membership and terms of reference so that the roles and responsibilities are clear (see **ANNEX 1**).[4] According to the 2023 TrACSS survey results, of the 177 respondents, nearly half of the countries (52%) have a functional multisectoral coordination mechanism. Around 10% of them lack the multisectoral governance mechanism and 48% have a dysfunctional one, which shows the need for more action to maintain effective multisectoral governance and coordination.[1] This would enable countries to make strides in important aspects of their battle against AMR, and should feature prominently on their to-do lists (see **BOX 14**).

RECOMMENDATION 2
The complexity of antimicrobial resistance and the multiple stakeholders involved make it vital to coordinate funding and budgeting for AMR action.

The challenges encountered in the multisectoral budgeting and financing of AMR actions are similar to those found in other intersectoral initiatives where health is a key component. Previous experience in tackling challenges to intersectoral financing and budgeting involves different financing methods devised and implemented in different country settings. These and other country examples can provide inspiration and guidance for addressing similar issues in the AMR setting.[83] The financing mechanisms presented below have previously served to support intersectoral collaboration in various challenges to One Health and as such, can apply to the AMR setting.

i. Outcome-based budgeting

This tool connects budgets with expected outputs or performance, rather than focusing on the spent budget, and provides a basis for an objective evaluation of the efficiency of resource allocation. In the context of AMR this tool plays an essential role, given the multisectoral nature of the problem. Allocating outcome-based budgets to all the government's One-health departments will make it easier to assess the contribution of each sector to AMR action, increase the departments' accountability and avoid failure in the search for a solution to the AMR problem.[24]

BOX 14

The Jordan National Multisectoral AMR committee and data for action

In 2017, Jordan formed a national multisectoral AMR committee and tasked it with developing the country's first national action plan on AMR, and coordinating and monitoring its implementation. Under the committee's leadership Jordan achieved certain key actions against AMR, including strengthening the surveillance of AMR and antimicrobial consumption. This is imperative to assessing the spread of AMR, and monitoring the success of local, national and global strategies. The committee initiated the creation of the Jordan National Antimicrobial Resistance Surveillance System, which generates quality data based on internationally standardized laboratory methods and interpretation metrics for antimicrobial sensitivity testing. The Jordan National Antimicrobial Resistance Surveillance System has reported its data annually to the WHO Global Antimicrobial Resistance and Use Surveillance System since 2018. The Jordan Food and Drug Administration has managed the collection of data on imported and locally manufactured antimicrobials since 2017, and has set up a national surveillance system for monitoring AMR. Through such efforts Jordan became the first low- or middle-income country in the WHO's Eastern Mediterranean Region to develop a national antimicrobial stewardship policy and national clinical guidelines for priority infections.[82]

Earlier health programmes show that when carefully designed, outcome-based intergovernmental transfer can improve efficiency in the use of resources and accelerate progress towards health outcomes. Argentina's Plan Nacer is a case in point. The Plan provides maternal and child-care insurance to uninsured families. Well-defined outcome indicators such as the enrolment of beneficiaries, and the use and quality of maternal and child beneficiaries enabled the Plan to succeed in reducing low-weight births and in-hospital neonatal mortality.[84] One advantage of outcome-based budgeting is its flexibility, which allows for the adaptation of its design and implementation to local institutional circumstances. It can align activities and spending with government priorities while increasing fiscal transparency.[85]

AMR is well-suited for the use of this tool because it is possible to find easily identified outcomes/ and indicators such as the consumption of antibiotics, resistance rates, and deaths associated with AMR. Additionally, it is possible to successfully track the vital indicators through a strong surveillance system that was discussed above in relation to the challenge posed by the inadequacy of data and analyses.

ii. Earmarked financing

In this kind of financing, one or more tiers of government allocate specific funds from new or existing revenue streams to serve a specific purpose. There are examples of this scheme being used to finance intersectoral programmes in developed and developing countries. The earmarked funds are usually controlled by the relevant ministry at national level. At the local level they are mostly controlled by the regional or municipal administrations.

A number of low- and middle-income countries, such as Costa Rica (revenue from lotteries) and Mexico (oil revenues), have experimented with this to finance their immunization programmes. Haiti, Tajikistan and Viet Nam are raising resources for immunization through tax levies on luxury goods and on products that are harmful to health, such as alcohol and tobacco (see **BOX 15**).[7]

Another example of earmarked financing comes from the city of Wonju in the Republic of Korea. Wonju joined the WHO Alliance for Healthy Cities of the Western Pacific Region in 2004. Wonju developed a Healthy City project, including a range of multisectoral programmes for health in workplaces and schools. The project was funded by earmarked revenues from a local tobacco consumption tax. There were positive health outcomes associated with the project which made Wonju one of the 81 Healthy Cities across the country. One of the project's drawbacks was that its sustainability depended on the city mayor's political will and support.[86]

BOX 15

Earmarked financing of immunization in Costa Rica

In Costa Rica, sources of funding for the National Immunization Fund include earmarked allocations of general revenues from the Ministry of Health and the Costa Rican Social Security Administration (CCSS). Both agencies are required to include an adequate budget to acquire vaccines and defray immunization-programme costs. Since 2005, proceeds from the November drawing of the National Lottery (overseen by the San José Social Protection Board) have been earmarked for the National Immunization Fund. Since 2009, the resources have served to fund unplanned expenditures and to pursue the programme's cocoon strategy.

Established in 2008 the Kaste programme in Finland also involves earmarked funding schemes and provides funds to relevant actors on condition that they deliver intersectoral health promotion activities. It requires the involvement of at least two different sectors–such as the education sector and workplaces–in local municipalities. The programme allocated 17.5 million euros per year to promote physical, mental and social well-being and reduce inequalities in these areas. Municipalities and joint municipal boards for social welfare and health care can apply for discretionary Government transfers to create and implement projects.[87]

The town council in Varde, Denmark developed an intersectoral health policy which involved all sectors of the municipality, including those responsible for schools and social welfare. The implementation stage encountered problems due to a lack of dedicated funding. The town council subsequently set up the Fund for Health, with an initial earmarked budget of 1 million Danish kroner that was available to support intersectoral health projects. The various departments needed to have a project conducted by multiple sectors as a prerequisite to bidding for funding. The stakeholders acknowledged in interviews that this earmarked fund stimulated intersectoral activity and prevented silos in budgeting.[88]

The examples above show that earmarking budgets at the national level to fund AMR policies can help meet the challenge of lack of funds and guarantee the availability of resources for this multisectoral problem. Using pro-health and sin taxes directly for high-priority programmes in health, such as AMR sends a strong message and reinforces the acceptability of the taxes. There is a need for caution regarding the volatility and sustainability of revenues from such taxes. They are extremely susceptible to changes in the behaviour of the end-consumer (for instance alcohol or tobacco consumption). Additionally, given that the taxes ultimately seek to reduce certain negative habits over time, they run the risk of lowering the tax base. Therefore, while they are a good source of finance to kick-start the funding of AMR initiatives, it is necessary to replace them with more sustainable revenues in the long-run.

iii. Delegated financing

Another approach to financing intersectoral health promotion activity is delegated financing. In this case, funds are allocated to an independent statutory organization, such as a health promotion agency or a foundation. Funds delegated to the independent agency may come from multiple sources, not just from health budgets.

National trust funds are a good example of this tool, which can be used to finance the AMR agenda of countries. The tool is a pool of funds to serve a particular purpose, with specific rules governing the use of proceeds. It involves combing funds from various sources such as taxes, private sector contributions and donor funds through a legal arrangement. The trust funds' governance structure usually comprises a board responsible for the management and operations, with trustees or directors overseeing reporting and controls (see **BOX 16**).

Health promotion foundations exist in other countries with high, middle and low incomes, including Austria, Malaysia, Mongolia, New Zealand, the Republic of Korea, Singapore, Switzerland, Thailand, Tonga, the United Kingdom and the United States.[89,90,91] Many of the projects funded by the foundations have activities that cut across different sectors. As such, delegated financing will help overcome the organizational and financial silos that governments are known for. However, at the implementation phase the sectors concerned will need support.

In the **United Kingdom**, **the Big Lottery Fund** receives 40% of the share of national lottery ticket sale revenues and uses them to promote health and well-being, the environment, education and other charitable causes.[92] The Fund has awarded over £6 billion in funds since its inception in June 2004, with 80%–90% of the grants being allocated to voluntary and community-sector organizations. Intersectoral health-related schemes are the grants' primary beneficiaries.

Another such example is the **Thai Health Foundation**, which is funded by a 2% surcharge on excise taxes on alcohol and tobacco.[93] **The Health Promotion Agency in New Zealand** obtains a third of its fund from a levy on alcohol and another proportion from a levy on problem gambling.[94]

BOX 16

Health Trust Fund Bhutan

The Royal Government of Bhutan (RGOB) established the Health Trust fund in 1998 to raise income for the costs of essential health services in the country. It is an innovative way of financing volatile health expenditure items such as vaccines, and an important tool for ensuring that, among other things, critical vaccines and essential drugs are available in a timely manner. The Fund's board includes officials from the Ministry of Health, the aid and debt management department and the monetary authority of Bhutan. It became operational in 2003–04 through contributions from external donors, the RGOB, and private domestic contributions.[7] For every donor contribution to the Fund the RGOB contributes a similar amount. This principle demonstrates the Royal Government of Bhutan's firm commitment to the development and success of the Fund in order to sustain primary health care.[95]

Flexibility in the use of funds can help delegated financing improve multisectoral collaboration on health. VicHealth in Australia, which funds the Streets Ahead programme is a case in point. Local councils in this scheme received direct funds to create supportive environments for children to engage in physically activity especially during their commute to school. Partnerships with teaching staff in schools were important in helping children develop the necessary skills and gain the confidence to participate in cycling and outdoor activities. However, some disadvantaged schools did not place a high priority on this project. Compensating schools financially for teacher time spent on the programme, and demonstrating the direct benefits to the schools, drew more commitment from the schools. This example illustrates the importance of engaging all the partners of delegated financing projects in sharing the rewards as well as the responsibilities.[6]

iv. Joint or pooled budgeting

Joint or pooled budgeting is another way to fund intersectoral areas of collaboration where two or more sectors contribute to a single pool for spending towards a common goal. The pooling of budgets can occur at the national, regional or local level and are accessible through grants or the regular budgetary system.

Denmark used a combination of earmarked financing and joint budgeting as part of its efforts to combat AMR. Budget allocations were made from the pooled funds in 2014 and 2016 for projects in various regions and municipalities to reduce antibiotic use and resistance and to prevent infections in health care centres. The National Antibiotic Council established a working group that included members and representatives from the municipalities, patient groups and consumers, and that helped the Ministry of Health set priorities for projects that would receive funding from the pooled budgets earmarked for action against antibiotic resistance.[96]

Joint budgeting is also introduced as a new element in the 2017–2021 WHO Country Cooperation Strategy (CCS) of Thailand. The CCS has six programme priority areas, one of which is antimicrobial resistance. The Ministry of Public Health, WHO, the Health Systems Research Institute, the National Health Commission Office, the National Health Security Office, and the Thai Health Promotion Foundation are the partners in the Strategy who made pledges at the beginning of the implementation of the CCS. Donors pool funds into a common bank account, and financial reporting for each of the priority programmes is streamlined into a single reporting requirement. Six Programme Sub-committees exist for each priority area as well as lead and implementing agencies that are responsible for the overall implementation. Joint budgeting helps embrace CCS principles that promote local ownership, alignment with national priorities, and harmonization with partners.

One disadvantage is that pooled funding is considered "pure," as the mandates of some agencies object to the use of their funds for certain programme activities. Virtual earmarking of the funds helps resolve this challenge, and the fungibility of unrestricted funds in the pool compensates for this. In a midterm evaluation of the 2017–2021 CCS, stakeholders reported that the joint budgeting mechanism reduced transaction costs for the lead and contracting agencies as well as for the six programmes and brought funders into closer alignment with one another and with the objectives of the CCS. Additionally, a higher standard of accountability is expected as an outcome of the international-standard financial audit of the six programme-contracting agencies.[97]

Singapore provides another example of joint budgeting, with its One Health framework established in 2012. The framework is under the authority of the inter-agency One Health Coordinating Committee that comprises the Ministry of Health, the National Environment Agency, the National Parks Board, the National Water Agency and the Singapore Food Agency. In 2017, the One Health AMR Work Group launched Singapore's National Strategic Action Plan on AMR, bringing together and building on existing efforts in the human, animal, food and environment sectors. These agencies established and funded the One Health AMR Research Programme. This is a grant created and funded by Singapore's One-Health agencies. The programme supports cross-sectoral research in priority AMR areas, which helps inform policies, formulate interventions and guide operations to combat AMR in the country. The One-Health agencies delegated the use and administration of the funds in this programme to the National Center for Infectious Diseases Singapore.[98]

The cases of Denmark, Thailand and Singapore stand out as important examples to guide other countries in creating AMR budgets and ensuring harmony between sectors. As such, other countries wishing to pursue funding and to budgets for their national action plans on AMR should study the examples further.

v. Aligned budgeting

An aligned budget is an arrangement whereby budget holders align resources but define their own contributions. The budget holders form a joint board, which agrees on the objectives and how to align each partner's activities to optimize synergies between stakeholders. While the stakeholders monitor spending and performance jointly, they manage activities independently. This type of budgeting tends to apply in cases where partnerships between different stakeholders need time to mature or where one of the parties might underfund the pooled budget.[99]

Aligned budgets to finance AMR activities can be useful in federal States where the regions or states are expected to devise and finance their own NAPs. This makes it difficult to implement nationwide and harmonious policies and creates a major impediment to a country's consolidated efforts to combat AMR. Pakistan, where the Federal Government's national action plan only covers federal regions, is a case in point. The provinces are responsible for designing their own regional action plans, but only receive technical assistance from the government upon request. In recent times only one province has applied to the Federal Government for assistance in developing its national action plan.

In an environment where the federal government does not involve the regions in its AMR-related policies and agenda, nor pressures them to set and implement their own agenda, the states or regions naturally have little incentive to develop their own AMR action plan. The aligned budgets can be useful tools for integrating the regions or states into the AMR policies of the federal government but without forcing federal governments to take on all the responsibilities of financing and implementing NAPs.

All the above examples illustrate that multisectoral financing methods can successfully raise revenues and secure budgets to tackle the AMR challenge. Regardless of the approach, it is necessary to follow certain key principles to achieve utmost efficiency. One of them is the crucial role of **accountability for funds** received, in ensuring that each participant carries out their activities. Clearly defining outcomes of interest as well

» All the principles, and hence the success of multisectoral collaboration, rely on mutual trust among all the stakeholders, regardless of the financing mechanism. «

as the economic costs and payoffs to all interested stakeholders makes it possible to forge partnerships. It might become necessary to make **effective monitoring and achievement** of the defined outputs and outcomes a condition for continued financing of intersectoral activities. Accountability is best maintained when financial and regulatory mechanisms are combined. **Collaboration** that involves all stakeholders as part of the solution is another essential principle for guaranteeing support from funders. This will be straightforward where AMR is concerned because all the One Health departments have well-defined roles. All the principles, and hence the success of multisectoral collaboration, rely on mutual trust among all the stakeholders, regardless of the financing mechanism. Building trust may be a lengthy process, even where all the partners contribute to the budget. This is an important phase in view of the different backgrounds and perspectives of all the stakeholders involved in the AMR domain.

5. Conclusion

The world remains unprepared for a potential AMR crisis that is unfolding slowly and silently. AMR could have devastating consequences for health and the economy in all countries around the world. It is a challenge to One Health and requires joint and collaborative action by humans and the animal-health, agricultural and environmental sectors. Additionally, it is a global commons problem that requires global action and efforts.

Addressing AMR requires political commitment, not only to fix the pipeline of new antibiotics, but also to achieve:

i. Smart health systems that reduce the unnecessary and incorrect use of antibiotics so as to achieve access without excess,

ii. A coordinated One-Health approach to AMR preparedness, using the whole-of-government economic and financial policy levers as is the case with other aspects of Health for All.

The five key challenges to the implementation of national action plans on AMR are weak political incentives, inadequate data and analysis, lack of transparency and trust, the inadequacy of budgets allocated to AMR, and problem of coordinating budgets across the multiple sectors involved.

» This insight concentrates on how to use financial and economic levers, and tools such as outcome-based budgeting, delegated and earmarked financing and joint budgeting, to ensure adequate allocation of funds to this health issue, and to guarantee the continued coordination of budgets across the multiple sectors involved. «

This insight concentrates on how to use financial and economic levers, and tools such as outcome-based budgeting, delegated and earmarked financing and joint budgeting, to ensure adequate allocation of funds to this health issue, and to guarantee the continued coordination of budgets across the multiple sectors involved. Among its recommendations at the international level, the insight highlights engaging existing lending facilities of international financial institutions on AMR. It also proposes incorporating AMR into the agenda of other big funds, such as the recently created Pandemic Fund, the Global Fund and Gavi, the Vaccine Alliance, and getting catalytic funding from them.

At the national level the insight lists policies that can help mitigate the AMR incidence in the medium to long term. The policies include avoiding budget cuts, whole of government budgeting, using spending reviews and efficiency criteria to reallocate budgets from inefficient domains to AMR, investing in cost effective AMR interventions, mainstreaming AMR and integrating it into existing health systems. Such measures all require a strong and determined governments that have the **capacity** to set a direction for development through strong core government functions and behaviours.

It is possible for governments to overcome challenges to multisectoral coordination by investing in their **dynamic capability** to anticipate the effects of AMR on their country. Additionally, they can learn and from WHO guidelines listed in its Handbook for the implementation of national action plans and adapt them. They can also learn from previous One-Health problems that required coordinating the multiple sectors that were involved. It is crucial to have a multisectoral coordination body that reflects a One-Health approach to the problem and manages all interactions between interested stakeholders. Tools exist that can help maintain the financing and budgeting of AMR action across the multiple sectors involved in the challenge. They include outcome-based budgeting, earmarked financing, delegated financing, joint or pooled budgeting and aligned budgeting. Other intersectoral domains have used such tools in sectors that involved health.

The recommendations listed in the insight are all inspired by the **values of a Health for All economy** which places human, animal and planetary health at the core of its business and opposes the idea of health as a cost item, viewing it instead as an important area of investment that must have its place among top priorities. The financial and economic levers embrace the notion that national action plans on AMR do not merely need **more but, better finance**, which help address the AMR challenge. It is important, once again, to emphasize that success in mitigating AMR hinges on **governments' ability** to discard myopic practices and invest in their capacity to set a direction for development. This is achievable through strong core government functions that will ensure investment in long-term, significant challenges such as antimicrobial resistance.

6. Acknowledgements

This insight was prepared by Dr Serife Genc Ileri, research consultant, WHO Secretariat supporting the WHO Council on the Economics of Health for All and Assistant Professor of Economics at Istanbul Technical University. It is an expanded version of the article[83] "How to finance national antimicrobial resistance action plans" published in the Bulletin of the World Health Organization's theme issue on Building an Economy for Health, in May 2024.

Dr Ritu Sadana, Head of the WHO Secretariat supporting the Economics Council, coordinated the work and provided valuable inputs. This work also benefited from the inputs from WHO staff, including Mr Anand Balachandran, Unit Head of National Action Plans, Antimicrobial resistance (AMR) Division at WHO, Dr. Hanan Balkhy, Regional Director, WHO Regional Office for the Eastern Mediterranean, Dr Jean Pierre Nyemazi, Acting Director, Global Coordination and Partnership Department, AMR Division, Dr Nicole Valentine, Unit on Social Determinants of Health, and Dr Susan Sparkes, Department of Health Systems Financing and Economics. All researchers within the WHO secretariat also contributed: Dr Devika Dutt, Dr Roberto Duran Fernandez, Dr Maksym Obrizan and Mr Alberto Huitron.

Our sincere thanks goes to stakeholders who were interviewed and provided their valuable insights and feedback on the first draft of the report including: Dr Anthony So from Innovation+Design Enabling Access (IDEA) Initiative, Johns Hopkins Bloomberg School of Public Health, React Strategic Policy Program and North America; Dr Sujith Chandy, Director of ReACT Asia Pacific;Dr Otto Cars Senior Strategic Advisor and former founding director of the ReACT group; Dr Kerstin Akerfeldt, Policy Expert at ReACT Europe;Dr Tonny Brian Mungai Muthee, Health Specialist

Health, Nutrition and Population Global Practice Department at the World Bank; Dr Hajime Inoue , Senior Advisor in the same unit; Ms Yoshini Naomi Rupasinghe, Senior Health Specialist for Europe and Central Asia at the World Bank; Dr Damiano De Felice Director of Development and External Engagement at CARB-X; Ms. Melda Kecik, Mr Berk Geroglu, Mr Bahadir Sucakli, National Professional Officers at WHO Country Office in Türkiye.

We are also grateful for the contributions and insights provided by the following people during the interviews: Dr Sheila Aggarwal-Khan, Director of Industry and Economy Division at UNEP; Ms Aitziber Echeverria Programme Management and Liaison Officer to the AMR Quadripartite Joint Secretariat and UNEP and Ms Jacqueline Alvarez, Director of the Latin America and Carribean at UNEP; Dr Michael Hodin, CEO of the Global Coalition on Aging, Dr Chantal Morel, Professor at Bern University; Dr Afreenish Amir, Technical Officer AMR at National Institute of Health Pakistan; Mr Aninda Rahman Deputy Program Manager Communicable Disease Control (CDC), Directorate General of Health Services, Government of Bangladesh; Mr Paritosh Chakma, National Consultant- Essential Drugs and other Medicines, WHO Country Office Bangladesh.

Annex

The WHO Implementation handbook for national action plans on AMR suggests the following key steps to help countries advance in the implementation of their NAPs.[4]

1. **Strengthen governance: One Health and multisectoral collaboration**

    a. Establish a national/subnational governance structure: multisectoral coordinating mechanism, interministerial group, dedicated secretariat and technical working groups

    b. Establish membership and terms of reference for multisectoral coordinating mechanisms: the roles and responsibilities should be clear.

    c. Establish membership and terms of reference for technical working groups

    d. Capacity building for effective contribution and governance on AMR: (trust, transparency)

    e. Engaging all stakeholders in and outside of the government.

2. **Prioritize activities: prioritization should be evidence based**

    a. Undertake an analysis of the current situation: new activities, existing activities, entry points (scaling up the existing activities)

    b. Identify goals for implementation

    c. Identify key activities for prioritization

    d. Prioritize activities based on an agreed scope and approach.

3. **Cost the operational plan**

    AMR should be part of the plans and of the development agenda of all countries. (WHO has tools to cost NAPS, including costing and budgeting tools, a consolidator tool also provides helpdesk support and a detailed manual on how to use those.)

4. **Mobilize resources**

    a. Identify funding gaps

    b. Map potential funders for activities for which there is no funding

    c. Discuss with potential funders and present a resource mobilization advocacy.

5. **Implement prioritized activities**

6. **Monitor and evaluate.**

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