

Antimicrobial resistance and universal health coverage

What's the deal?



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Managing antibiotic resistance will be critical to achieve universal health coverage.

Mirfin Mpundu, ReAct Africa

Equitable and sustainable access to effective antimicrobials is crucial to provide quality health care for all. Antimicrobial resistance is threatening this essential component of health that keeps infections treatable and therefore hinders the advancement of universal health coverage. To preserve antibiotic effectiveness, interventions need to be implemented throughout the whole health system and the whole of society.

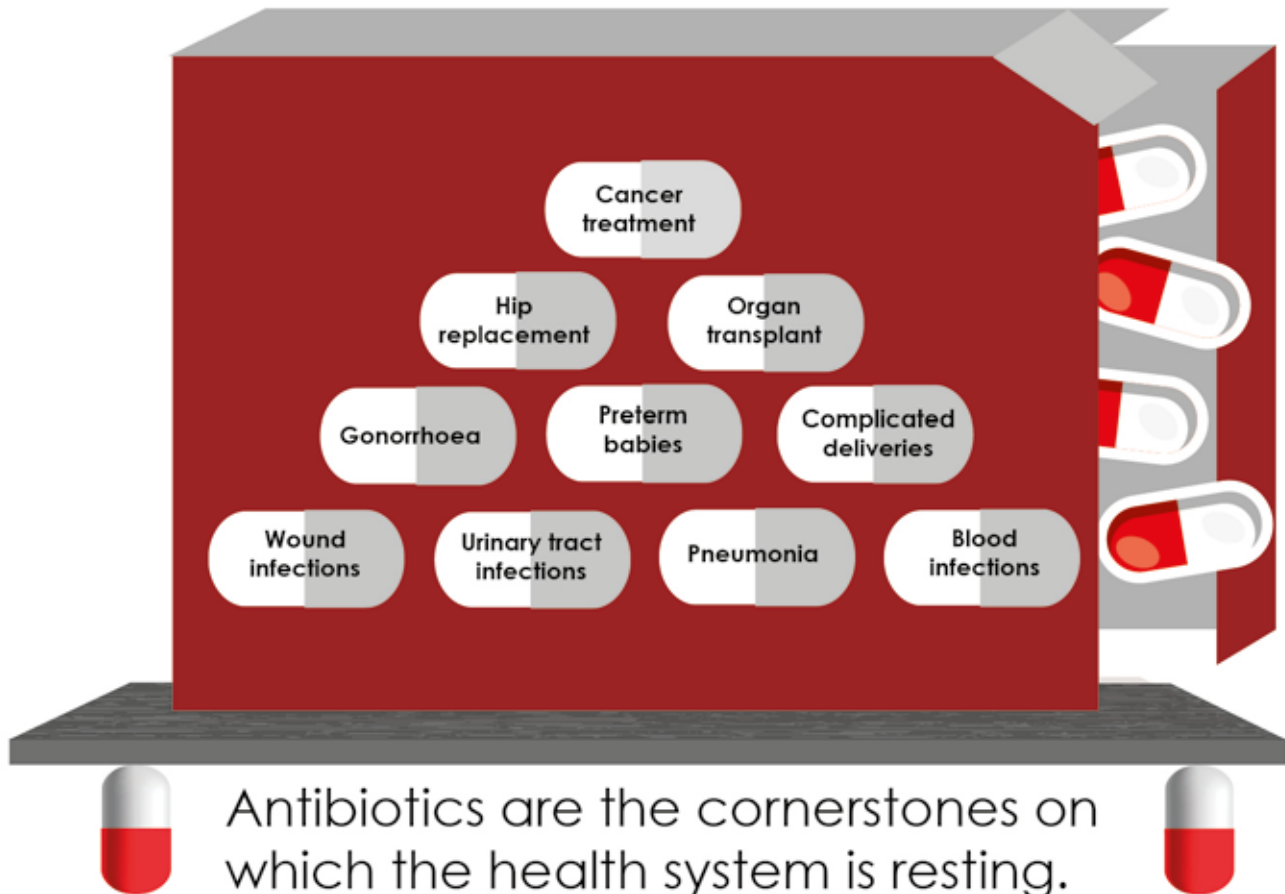
Management of antimicrobial resistance must therefore be a core element of universal health coverage as:

- **Without sustainable and effective treatment of infections, good quality health care for all will not be reached.**
- **Without management of antimicrobial resistance, sustainable financing of universal health coverage will be difficult.**

Universal health coverage can provide an ideal platform to address antimicrobial resistance. Including the management of antimicrobial resistance when implementing strategies to achieve health care for all is one of the most important and effective steps to prevent infections, prevent the spread of infections and ensure appropriate use of antimicrobials.

The antibiotic pyramid

Diseases and procedures relying on effective antibiotics



Without antimicrobials health systems crumble - the impact on health and quality of care

Effective antibiotics are critically important cornerstones for a health system, but bacteria becoming resistant to antibiotics threatens their continued lifesaving value. Health systems heavily rely on antibiotics, not only for the basic treatment of infections, but also for medical and surgical procedures.¹ The increased burden of antimicrobial resistance therefore not only affects quality of care for treating infections, but all aspects of healthcare and health systems in general.

The wide impact of antimicrobial resistance on health and quality of care

- Common infections, such as wound infections, urinary tract infections and pneumonia will increasingly be associated with severe complications and increased risk of death.
- Many childhood and maternal infections such as neonatal sepsis and childbed fever could become fatal once again – as they still are in many countries with limited access to antibiotics.
- Non-vital surgeries would become difficult to justify due to the risk of infection.
- Most cancer therapies would become substantially riskier as chemotherapy causes immune suppression, which increases the risk of even uncomplicated infections becoming fatal.
- Other therapies that require immune suppression, such as organ transplants, will be untenable.

Pay now or pay much more later - the impact on the financing of universal health coverage

Antimicrobial resistance is a major threat to the financing of universal health coverage. Maintaining or creating universal health coverage without curbing antimicrobial resistance, can become unaffordable and unsustainable. The World Bank estimates that between 1.1% and 3.8% of global GDP could be lost due to antimicrobial resistance if left unchecked by 2050.² By comparison, the consequences of climate change are predicted to cause a drop of 1.0% to 3.3% in global GDP by 2060.³

Failure to manage antimicrobial resistance leads to resistant infections that require more and longer hospitalizations (inpatient care) and the need for more expensive treatments options. The morbidity and mortality attributable to these resistant infections also bear enormous societal costs. Sustainable financing of universal health coverage needs to consider the current and long-term risks of antimicrobial resistance: the choice is to pay now, or pay much more later.⁴

Apart from impacting the affordability of health care on the national level, antimicrobial resistance also has a catastrophic financial impact for the individual. Antimicrobial resistance is a risk for the individual's ability

to afford healthcare with the higher costs of treatment due to resistant infections, which undermine the entire essence and goal of universal health coverage.

People living in poverty are less able to get treatment for resistant infections primarily due to high cost of medicines, but also for the loss of income and costs of longer or more intensive treatments that can require hospitalization. The World Bank projects that 24 million people could fall into extreme poverty by 2030 because of antimicrobial resistance. Most of these people would come from low- and middle-income countries. Antimicrobial resistance could seriously undermine prevention of poverty and the objectives of universal health coverage.

While antimicrobial resistance could have significant effects on poverty and the ability to afford a healthy life and health care, universal health coverage is sometimes wrongly perceived as merely a health financing mechanism. There are many opportunities for managing antimicrobial resistance within a basic package of services made available through health insurance already, but it is essential to also make sure that systems are equitable and provide good quality

There are opportunities to achieve universal health coverage while addressing antimicrobial resistance. To do that we need to prioritize investments for interventions with high impact, low complexity, low level of resources that build resilient systems, as well as interventions that lead to more robust data on antimicrobial resistance.

Laetitia Gahimbare, World Health Organization, Regional Office for Africa

\$700



The median overall additional cost to treat a resistant bacterial infection.

442 days



The time period a rural male casual worker in India has to work to earn this amount.

Chandy, S: *The Journal of Infection in Developing countries*. Vol 8, sept 2014

care for all, both in public and private care facilities.⁵

Finally, universal health coverage and antimicrobial resistance require strong human-centered primary care with functional, accessible health care facilities and affordable medicines and diagnostics. This cannot be resolved through more money for health care or increased individual financial security only, but requires training of health workers, community participation and increased health literacy.⁶

Addressing universal health coverage without a focus on the quality of the health system, increases inequalities within populations and increases the gaps between countries. Only a global increase in coverage that goes together with increased quality of healthcare will lead to better health outcomes, especially for infectious diseases that are not restricted to country borders. The objective of universal health coverage is that all individuals receive access to affordable and quality health services that they need, without putting them at the risk of financial harm.

If we fail [to address antibiotic resistance], we will pay for it through our wallets, but the poor will pay for it with their lives.

Participant speaking on antibiotic resistance at the World Health Organization's Primary Healthcare Meeting (Alma Ata 2.0, 25-26 October 2018 - Astana, Kazakhstan)

Entry-points for integrating antimicrobial resistance into universal health coverage

For a universal health coverage strategy to be truly successful, it has to address antimicrobial resistance. The following measures⁷ that should be considered within a health system strengthening approach would provide entry-points for integrating work on antimicrobial resistance in universal health coverage:

1. Service delivery

- **Put emphasis on prevention: clean water and sanitation, immunizations and infection prevention and control.**
- **Facilitate rational use through access to diagnostics and primary health care.**

Universal health coverage programs should give increased importance to access to health care for infectious diseases. Increased opportunities and facilities for better diagnosis should be created through improved people-centered primary care and increased access to diagnostics over time.

The best and most affordable interventions lie in increasing focus on preventing infections, preventing the spread of resistant infections and lowering the use of antimicrobials through infection prevention and control, clean water and sanitation.⁸ Also, antimicrobial stewardship programs in all health care settings and the strengthening of immunization programs have significant impact on managing antimicrobial resistance.

2. Health workforce

- **Pay attention to and invest in professional education, training, certification and development as well as regulation of professionals.**

To reduce resistance and ensure better value for money, universal health coverage should include attention to and investment in professional education, training, certification focusing on antimicrobial resistance.⁹ Antimicrobial resistance should also be considered when reducing shortages in the health workforce as it could increase needs in the future when infections become more complex to treat.

A well-trained health workforce can be an integral part of increasing health literacy in the population. Community-based practitioners collaborating with skilled health professionals within integrated primary health care delivery models can help health seekers learn how to prevent infections and inform about the proper use of antimicrobials.

3. Health information systems

- **Strengthen monitoring and surveillance across networks focusing on laboratories and set standards for diagnostics.**

Strengthening monitoring and surveillance across networks of laboratories and setting standards for diagnostics is essential to map antimicrobial resistance, but also to make sure that interventions for antimicrobial resistance work. Monitoring and surveillance on national and local levels also helps the formulation of context-specific treatment guidelines. This should go together with mechanisms to monitor prescription behavior and establishing mechanisms to discourage inappropriate use.

4. Access to essential medicines

- **Ensure antimicrobials are accessible, but not used irrationally. This requires linking access with ensuring responsible use.**

More people are still dying from lack of access to antibiotics, than from drug-resistant infections.¹⁰ Today, there is an increasing global problem with shortages of antimicrobials that can lead to the use of broader-spectrum, costlier, less effective or more toxic antibiotics. Many of the antibiotics that are used because of shortages are from the WHO Reserve category, meaning they should only be used if there is no other alternative.

Engaging on access to antibiotics while promoting rational use, means reevaluating drug policies, but also focusing on treatment guidelines, access to diagnostics, preventing high out-of-pocket costs, preventing shortages and gaining insight into behavioral dimensions, such as knowledge, practices, incentives, cultural beliefs etc.

- **Consider antimicrobial resistance a risk to both the sustainable financing of universal health coverage and the individual's ability to pay for higher cost of treatment.**
- **Approach financing of universal health coverage through an antimicrobial resistance-lens.**
- **Delink health worker income and profit of companies and institutions from the volume of antimicrobials sold.**

Both for universal health coverage and antimicrobial resistance, health system financing should be based on the principles of "(1) service use relative to need; (2) efficiency; (3) quality; (4) transparency and accountability".¹¹ The long-term cost implications of antimicrobial resistance should be taken into account. Additionally, through the financing of universal health coverage, especially when done through public systems, there are many opportunities to give financial incentives for better performance in managing antimicrobial resistance:

Solutions per health financing mechanism

Public Budget	Social Health Insurance	National Health Service	Private Health Insurance	Private Pay
Public policies for health care facilities.	Antimicrobial resistance and infection prevention as part of the quality assessment when contracting health care providers.		Regulation and accountability mechanism for private insurers.	Regulation and accountability mechanism for private health-care providers.

5. Financing

- **The impact of antimicrobial resistance goes beyond health care, and systems changes should therefore be applied to the agricultural and environmental sectors.**
- **Consider regulations on antimicrobial use and prevention of infections.**

While universal health coverage mainly relates to health systems, antimicrobial resistance requires one health leadership that connects human and animal health and the environment. As antimicrobial resistance is a relatively new, yet critical problem in global health, it needs stronger political leadership, advocacy, coordination and accountability at all levels. New regulations and policies may be required in the management of antimicrobial resistance:

Examples of antimicrobial resistance regulation and policy

Appropriate Use	Increased regulation of and oversight for sales of antimicrobials.
Quality of antimicrobials	Manage substandard and falsified antimicrobials.
National health security	Ensure that antimicrobial resistance is part of the outbreak response for infectious diseases.
Reducing perverse incentives	Reduce perverse incentives that encourage overuse or over-prescription of antimicrobials.
One health	Regulations for antimicrobials used in agriculture and levels of antimicrobials in the environment caused by health care, agriculture and pharmaceutical industry.

6. Leadership /governance

The importance of a one health and sustainable development focus for addressing antimicrobial resistance

The core missions of universal health coverage and the Sustainable Development Goals respectively are to gain 'Health for All' and to 'Leave No-one Behind'. While universal health coverage is part of advancing progress on sustainable development Goal 3, it contributes and is interlinked with the other goals.

Antimicrobial resistance seriously undermines the achievements of not only Sustainable Development Goal 3, but it has a broad impact on poverty reduction, economic growth, food production and inequality. Work on antimicrobial resistance therefore needs to have a greater systems perspective, and requires coordination across different sectors through the one health approach.¹²

Left unchecked, antimicrobial resistance will roll back a century of medical progress, damage the environment, interrupt food production, cause more people to fall into extreme poverty and imperil global health security.

Dr. Tedros Adhanom Ghebreyesus,
Director General, World Health Organization

Broader impact of antimicrobial resistance on sustainable development



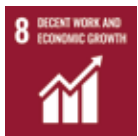
- Antimicrobial resistance significantly increases cost of treatment driving people into poverty or making treatment inaccessible. The World Bank projects that 24.1 million people could fall into extreme poverty by 2030 because of antimicrobial resistance.
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- Antimicrobial resistance in animals threatens the sustainability and security of food production and the livelihood of farmers.
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- Common infections – many of which are childhood and maternal infections – will increasingly be associated with severe complications and increased risk of death.
 - Non-vital surgeries would become difficult to justify due to the risk of infection.
 - Most cancer therapies and other therapies that require immune suppression, such as organ transplants, would become substantially riskier.
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- The cost of inaction could result in a 1.1% to 3.8% decrease of global GDP by 2050. By comparison, the consequences of climate change are predicted to cause a drop of 1.0% to 3.3% global GDP by 2060.
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- Antimicrobial resistance risks increasing inequalities within societies.
- Groups that are extra vulnerable to antimicrobial resistance include women and children, migrants and refugees.



Managing antimicrobial resistance while achieving universal health coverage

An essential part of implementing universal health care is to strengthen health care systems to provide access to quality care. These system strengthening measures will concurrently contribute to managing antimicrobial resistance. For instance, the expansion of primary health care, access to essential medicines and diagnostics, access to clean water and sanitation, prevention of infections, increased vaccination coverage and other measures are important components of antimicrobial resistance programs that improve quality of care. This illustrates that antimicrobial resistance and universal health coverage go hand-in-hand.

At the same time it is also true that system strengthening measures to improve access could also end up exacerbating the antimicrobial resistance problem in the absence of improved governance, training and behavioural change within health systems. Antimicrobials are often used as a 'quick fix' for low-quality health care or to make up for poor hygiene. In other words, antibiotics are often used as a substitute for a good quality (primary) care, the prevention

of infections, health education and access to clean healthy food, clean water and sanitation. Increasing resistance undermines the quality of care and services. Conversely, primary health care can dramatically reduce antimicrobial resistance through simple, cost-effective interventions. Expanding healthcare without increased quality and without conservation efforts could lead to an increase in misuse of antibiotics and antimicrobial resistance.

Striking a balance between access to antimicrobials and preventing excessive use is obviously the answer, but to achieve this there needs to be greater coordination between the universal health coverage and antimicrobial resistance strategies. However, an antimicrobial resistance strategy that blindly restricts access to antimicrobials can also lead to avoidable deaths from infections, which in turn could affect the support necessary for the conservation of antimicrobials. High quality universal health coverage focusing on access to primary healthcare, therefore, is an important medium to manage antimicrobial resistance.

What has stood out, which is a great achievement and which need emphasis, is mainstreaming of antimicrobial resistance into the existing government framework. Malawi has managed to do that – to mainstream antimicrobial resistance. We are called for meetings even for HIV/AIDS and for many other programs, because they critically understand that antimicrobial resistance is a challenge and the program can be incorporated into the system, and we can unite resources.

Watipaso Kasambara, Antimicrobial Resistance Coordinator Malawi

Women with their children and infants await polio injections at a health care facility in Kapoeta, South Sudan. The activity is considered a public event, so the women dress their finest and most colorful. Photo: Samuel Boland, Photoshare.



Endnotes

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5. A. Rubinstein et al, 'Quality first for effective universal health coverage in low-income and middle-income countries', *The Lancet Global Health* 6, (2018): 1142–1143.
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This paper is based on a conference held by ReAct – Action on Antibiotic Resistance and South Center on 'Achieving Universal Health Coverage while Addressing Antimicrobial Resistance,' held on July 23-25 2019 in Nairobi, Kenya.

The conference outcomes were used as input to this paper and are based on the contributions of participants from 33 different countries; Benin, Burkina Faso, Cameroon, Chad, Cote d'Ivoire, Congo Republic, Democratic Republic of Congo, Egypt, Ethiopia, Ghana, Guinea, Guinea-Bissau, India, Kenya, Liberia, Lesotho, Madagascar, Malawi, Namibia, Niger, Nigeria, Rwanda, South Africa, Sudan, Sweden, Swaziland, Tanzania, Togo, Uganda, the United Kingdom, the U.S.A., Zambia and Zimbabwe.

5 Steps to manage antimicrobial resistance within universal health coverage strategies

A systems problem like antimicrobial resistance requires system solutions. Therefore, integrating the work to address antimicrobial resistance into other efforts with the aim of building stronger systems is an important way forward.¹³ For this reason, we must seek the entry-points for how antimicrobial resistance can be addressed in the efforts to achieve universal health coverage. In this paper we have presented examples of how measures on antimicrobial resistance practices could be implemented in a universal health coverage strategy and where they could reinforce each other.

Tackling both issues through joining forces on the global, regional and national levels can be done by taking the following 5 initial steps:

- 1. Amplify the message that: 'Achieving universal health coverage and managing antimicrobial resistance go hand in hand'.**
- 2. Build political commitment to invest now in measures to address antimicrobial resistance. Failing to do so will result in paying much more later. Antimicrobial resistance threatens the sustainable financing of universal health coverage in national health systems.**
- 3. Identify entry points through which antimicrobial resistance can be addressed in national universal health coverage strategies and how resources can be united.**
- 4. Advocate for inclusion of antimicrobial resistance in broader health and development programs at global, regional and national level.**
- 5. Build strong one health platforms for collaboration across sectors, and ensure greater coordination between the universal health coverage and antimicrobial resistance strategies.**



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