

Confronting the bane of antimicrobial resistance

In this issue of the *SAMJ*, Finlayson *et al.*^[1] call for responsible and improved access to new antibiotics to treat infections caused by drug-resistant organisms. They highlight the need for administrative and clinical oversight to preserve the longevity of these new antibiotics, and caution that antibiotic resistance is increasing across both the private and public healthcare centres in South Africa. The World Health Organization (WHO) identified antimicrobial resistance (AMR) as one of its top 10 global healthcare threats in 2017, and it is estimated that AMR, described as the silent pandemic, was associated with 5 million deaths in 2019.^[1] While, historically, solutions have focused on high-income countries, 4.3 million of these estimated 5 million deaths occurred in low- and middle-income countries.^[2]

Some causes of AMR include staff members in healthcare facilities failing to keep their hands and surfaces clean, and not isolating patients infected with AMR organisms. Frequently, patients in state-funded facilities spend a considerable amount of time on stretchers in hospital corridors waiting for beds. This makes it difficult for the often-overworked healthcare worker to implement basic measures for prevention and control of infections. In addition, possibly because of movement of patients, resistant organisms are transferred between facilities, as described by investigators over the past two decades – identical antimicrobial-resistant organisms (of the same clone) have been found in different healthcare facilities. However, AMR does not only occur in hospital settings, as emphasised in an article in *Nature*, this September.^[2]

Last month, on 26 September, world leaders met at the 79th United Nations General Assembly (UNGA) to discuss the problem of bacteria, fungi and protozoans' increasingly evolving resistance to antimicrobial drugs. At a high-level meeting on AMR, a political declaration was approved where targets and actions, including reducing the estimated 5 million human deaths associated with AMR annually by 10% by 2030,^[3] were clearly set. The declaration calls for sustainable national financing and catalytic funding to the tune of USUSD100 million to assist in achieving a target of at least 60% of countries having funded national action plans on AMR by 2030. The declaration acknowledges that AMR is a complex problem, and concedes the need for a multisectoral response combining human, agricultural, animal and environmental sector-specific interventions.

The declaration sets a target that at least 70% of antibiotics used for human health globally should belong to the WHO access group antibiotics,^[4] which have relatively minimal side-effects and lower potential to cause AMR. Infection prevention and control (IPC) targets are considered. These include 100% of countries having basic water, sanitation, hygiene and waste management services in all healthcare facilities, and 90% of countries meeting all the WHO's minimum requirements for IPC programmes by 2030. Investments committed to include those that facilitate equitable access to and

appropriate use of antimicrobials, as well as reporting surveillance data on antimicrobial use and AMR across sectors.

The declaration's commitments on agriculture and animal health are that by 2030, the quantity of antimicrobials used globally in agri-food systems will be reduced, through prioritising and funding the implementation of measures to prevent and control infections and ensure prudent, responsible and evidence-based use of antimicrobials in animal health. This is to be achieved by, *inter alia*, preventive strategies, including animal vaccination strategies, good husbandry practices, biosecurity and water, sanitation and hygiene. Regarding the environment, prevention and addressing the discharge of antimicrobials into the environment are underscored. The declaration also calls for increased research and knowledge on the environmental dimensions of AMR, and for accelerating the implementation of actions to address key sources of antimicrobial pollution.

While the UNGA high-level meeting and declaration are welcomed, simple measures can be (and should have been) executed to address this pandemic, such as protocols and basic interventions in and around healthcare being implemented. Effective vaccination programmes could reduce levels of AMR by lowering the chance of infective complications requiring antibiotics. Appropriate use of antibiotics must be emphasised or re-emphasised, and diagnostic tools to inform decisions on the correct antimicrobials to be administered are not that difficult to put into practice. A huge challenge is the failure to recognise AMR as a public health problem. Most people not involved in healthcare lack the knowledge needed to understand what AMR is and how it could affect their health.^[2] AMR must be recognised as a silent pandemic at a societal level. For this, we also require the political will to invest in public awareness of the problem across human, animal and environmental health. These simple measures could be lifesaving.

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