

Abstract

Current challenges with tackling antimicrobial resistance across sub-Saharan Africa and the implications

Brian Godman^{1,2,3}, Abiodun Egwuenu⁴, Evelyn Wesangula⁵, Natalie Schellack⁶, Aubrey Chichonyi Kalungia⁷, Celda Tiroyakgosi⁸, Ibrahim Chikowe⁹, Amanj Kurdi^{1,3,10}, Adrian J Brink^{11,12}

¹Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, Glasgow G4 0RE, UK. Email: brian.godman@strath.ac.uk; amanj.baker@strath.ac.uk

²Centre of Medical and Bio-allied Health Sciences Research, Ajman University, Ajman, United Arab Emirates

³Department of Public Health Pharmacy and Management, School of Pharmacy, Sefako Makgatho Health Sciences University, Pretoria 0204, South Africa

⁴AMR Programme, Nigeria Centre for Disease Control, Jabi, Abuja, Nigeria. Email: abiodun.egwuenu@ncdc.gov.ng

⁵Patient and Health Workers Safety Division, AMR Focal Point, Ministry of Health, Nairobi, Kenya. Email: wesangulaeva@gmail.com

⁶Department of Pharmacology, Faculty of Health Sciences, University of Pretoria, Pretoria 0007, South Africa. Email: natalie.schellack@up.ac.za

⁷Department of Pharmacy, School of Health Sciences, University of Zambia, Lusaka, Zambia. Email: chichokalungia@gmail.com

⁸Ministry of Health, Gaborone, Botswana. Email: ctiroyakgosi@gov.bw

⁹Pharmacy Department, Kamuzu University of Health Sciences (KUHeS) (formerly College of Medicine), Blantyre, Malawi. Email: ichikowe@medcol.mw

¹⁰Department of Pharmacology, College of Pharmacy, Hawler Medical University, Erbil 44001, Iraq

¹¹Division of Medical Microbiology, Department of Pathology, Faculty of Health Sciences, University of Cape Town, Cape Town, South Africa. Email: adrian.brink@uct.ac.za

¹²National Health Laboratory Services, Cape Town, South Africa

Background: Antimicrobial resistance (AMR) is a growing concern increasing morbidity, mortality and costs, with sub-Saharan Africa having the highest rates globally. Concerns with rising AMR has resulted in Pan-African and country activities including national action plans (NAPs); however, there is variable implementation with key challenges remaining. **Objective:** Document current NAP activities and challenges across sub-Saharan Africa to provide future guidance. **Methodology:** Mixed methods approach including a comprehensive literature review combined with input from senior-level personnel from thirteen African countries with respect to five agreed specific questions regarding the current status of their NAPs as well as ongoing barriers and challenges. **Results:** All the surveyed 13 sub-Saharan African countries have developed their NAPs; however, there is variable implementation. Countries including Namibia and Botswana are yet to officially launch their NAPs with Eswatini only recently launching its NAP. Cameroon is further ahead with the instigation of its NAP than these countries; however, there are ongoing concerns with implementation. Overall, South Africa appears to have made the greatest strides among the surveyed African countries with implementing its NAP, which incorporates regular monitoring of activities. These include the instigation of antimicrobial stewardship programmes. Key challenges still remain across Africa. These include necessary personnel, expertise, capacity and resources to undertake agreed NAP activities as well as a lack of focal points and personnel to drive NAPs. In addition, competing priorities and demands including among donors. **Conclusion:** Challenges with implementing NAPs are starting to be addressed. Further co-ordinated efforts are needed to reduce AMR across Africa.