

Antimicrobial resistance: a clear and present danger in Ghana

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The World Antibiotic Awareness Week (WAAW) is observed every year in November and is aimed at creating awareness of the increasing problem of antibiotic resistance. The celebration is also to encourage best practices among the general public, health workers and policy makers to avoid the further emergence and spread of antibiotic resistance.

In 2014, the World Health Organisation's report on Antimicrobial Resistance (AMR) showed high levels of resistance in all regions of the world.¹ The global impact of AMR remains unknown, however the European Center for Disease Prevention and Control (ECDC) estimates that AMR is responsible for some 25,000 deaths per year with 2.5 million extra hospital days in Europe.² Globally an estimated 10 million deaths attributable to AMR is expected to occur by 2050, with 4 million of these occurring in Africa.³ The current impact of AMR in Africa remains unknown from lack of data, but there is evidence of a significant level of resistance to commonly prescribed antibiotics.⁴

Antimicrobial resistance, albeit a naturally occurring phenomenon, has been worsened as a result of inappropriate use of antibiotics in humans and animals. In Ghana, high rates of antibiotic use has been observed in humans and animals.⁵⁻⁸ Inappropriate use of antimicrobial is facilitated by the unavailability or the lack of implementation of antibiotic prescribing guidelines, lack of diagnostic microbiology services as well as unregulated access to over the counter antimicrobials by the general populace.

Within hospitals and clinics, the spread of AMR is facilitated by poor implementation of Infection Prevention and Control (IPC) practices. Despite the presence of a national IPC policy in Ghana,⁹ there are significant challenges with its implementation. For example out of ten hospitals surveyed recently only one had a full time infection control nurse¹⁰ although WHO recommends one full time IPC worker per 250 hospital beds.¹¹ Several hospitals still struggle for access to hand hygiene supplies including running water, soap and alcohol hand rub.

In Ghana, there are increasing reports community and hospital acquired infections caused by Extended Spectrum Beta Lactamase (ESBL) producing organisms like *E. coli* and *Klebsiella sp.*^{12,13} Anecdotal evidence also shows an increase in the incidence of carbapenem resistant *Acinetobacter sp* and *Pseudomonas sp* infections in vulnerable patient populations like those in intensive care units.

In a recent audit at the Medical Intensive Care Unit (MICU) at a Teaching Hospital, there was high resistance to gentamicin and ciprofloxacin among aetiological agents of severe sepsis, with 100% resistance to 3rd generation cephalosporins (unpublished work, Yaw Ofori-Adjei).

It is obvious that urgent strategies are needed for the control of AMR in Ghana. These strategies should include improving access to diagnostic microbiology services, improving knowledge of prescribers by incorporating AMR into educational curricula of healthcare institutions as well as continuous medical education of healthcare practitioners. There is the need set up surveillance of AMR at all levels of healthcare nationwide, adequately implement IPC protocols in hospitals, train more Clinical Microbiologists and Infection prevention staff to increase and maintain focus on AMR and IPC in hospitals. Meanwhile there is the urgent need to embrace antibiotic stewardship programs to protect the few potent antimicrobials available on the local market. Also, there is the need to improve access to alternative agents for treating multi-drug resistant infections to reduce the increasing morbidity and mortality from these organisms.

The presence of a national Infection control and AMR policies shows the existence of the necessary political will towards combatting the problem of AMR in Ghana.^{9,14} A concerted effort is however needed to ensure that both policies are implemented at all levels in our health care delivery system including the private sector.

This year's WAAW was observed from the 12 – 18 of November. The WHO is encouraging the incorporation of two key messages to help guide the discussion on antibiotic use and take steps towards wider public understanding of antibiotic resistance. They are "Think twice. Seek Advice." and "Misuse of Antibiotics puts us all at Risk". As prescribers, we do need to question our decisions to prescribe and rethink our choices of antibiotics. The antibiotics we have in our armament to combat resistant strains have limited accessibility to the average patient due to cost and availability. We must therefore ensure that we are all poised to stop the development AMR. Failure to do these places all of us at risk.

Dr Appiah-Korang Labi MB ChB MGCP
Department of Microbiology, Korle-Bu Teaching Hospital, Accra, Ghana
Email: guylabi2@gmail.com
Conflict of Interest: None Declared

Dr Yaw Adjei Ofori-Adjei MB ChB FWACP
Department of Medicine and Therapeutics, Korle-Bu Teaching Hospital, Accra
E-mail: yofori@gmail.com
Conflict of Interest: None Declared

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