

Antimicrobial resistance in human health

Contribution of bacteria in human disease as well as certain aspects of antimicrobial resistance that could have major implications in the control of microbial diseases is well covered in this issue of *East and Central African Medical Journal*. In less than a century after the landmark discovery of penicillin the world is today again faced with many types of microbes that have developed resistance to various antimicrobial agents and with a potential to diminish or even reverse the many outstanding inventions from antibiotic research. Continued evolution, emergence and dissemination of drug-resistant strains such as methicillin or vancomycin-resistant *Staphylococcus aureus*, vancomycin-resistant Enterococci, extended-spectrum beta-lactamase producing bacteria, carbapenem-resistant *Enterobacteriaceae* multidrug or extensively drug-resistant *Mycobacterium tuberculosis* and *Neisseria gonorrhoea* and so on is a worrying trend. According to World Health Organization [1], if the current antimicrobial resistance problem is not promptly and effectively dealt with the situation could soon slide into the reality of the “post-antibiotic era”. Antibiotic resistance mainly stems from misuse or overuse of antibiotics, for example in livestock growth promoters, from the environment as in the scavenging free-roaming indigenous chicken and in hospitals. Food handlers are also an important conduit in the spread of antimicrobial resistant strains like *Staphylococcus aureus*.

Antimicrobial resistance menace is global and widespread although the extent of the problem varies from country to country and region to region. Increasing cases of resistant organisms continues to be exported from one country or region to another due to international travel and trans-border transport. The World Economic Forum identified antibiotic resistance as a global risk beyond the capacity of any organization or nation to manage or mitigate alone. A number of international and national bodies such as WHO, the European Commission, the UK government and the White House

are leading the pack in coming up with new and workable strategies to tackle the challenge [3-6].

According to WHO, the microbiology laboratory is a key partner in the fight against antimicrobial resistance. Establishment and support of the microbiology laboratory has been identified as a fundamental priority in guiding and assessing intervention efforts in the fight against antimicrobial resistance. However, there are still glaring gaps in research development and little awareness of the potential negative socio-economic and financial impacts of drug resistance, more so in low-income.

To combat this menace of drug resistance, well-coordinated efforts from governments, multi-national organizations, civil society and all stakeholders must be geared towards infection prevention and control, antibiotic resistance surveillance, research on mechanisms of evolution and emergence of new resistance traits, discovery of new effective antimicrobials including those of plant origin, invention of new vaccines and novel diagnostic tools and proper antibiotic stewardship.

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References

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2. (<http://www.weforum.org/reports/global-risks-report-2013-eighth-edition>), there is still little
3. [http://www.who.int/drugresistance/amr_global_action_plan/en/;](http://www.who.int/drugresistance/amr_global_action_plan/en/)
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