**Combatting Antimicrobial Resistance; Ethical considerations and implications**

Shobayo, B. I.\*, Bolay, F. K.\*, Fallah, M. P\*

\*National Public Health Institute of Liberia, Congo Town, Liberia

\* \*University of Liberia, Fendell, Louisiana, Liberia,

bodeshobayo@gmail.com

**ABSTRACT**

**Background:** Antimicrobial resistance (AMR) development can be attributed to a wide range of factors ranging from over-prescription of antibiotics, non-adherence to antibiotic dosage, overuse of antibiotics in livestock and fish farming, poor infection prevention and control in health facilities, lack of new antibiotics and ability of bacteria to acquire and transfer resistant genes. The issue of AMR has received critical attention globally and has been elevated beyond the medical field to the level of policy making. In this vain, it has become essential to consider ethical implications for AMR as they arise due to several considerations. This paper seeks to highlight those key considerations.

**Health Implications:** Increasing drug resistance poses an imminent risk to human health today and for generations to come. This sis continuously re-echoed by the repeated and growing number of warnings by medical and global health. Failure to take necessary actions and initiate interventions may result in dire consequences for treatment of acute bacterial infections and increased risk for medical procedures in which antibiotics are used prophylactically, such as surgical interventions or some types of chemotherapy. This raises serious moral issues in terms of failure to provide safe and secure medical care.

**Economic Burden:** It has reported that by 2050, AMR will lead to 10 million deaths every year, costing the world up to $100 trillion. In a report commissioned by the UK government in 2015, it was suggested maintaining today’s levels of infection and resistance rates would bring cumulative global economic losses of almost $6 trillion over the next four decades. Key reports such as these have indicated enhanced understanding of non-intervention and its ethical undertone.

**Regulation for Sale/Use:** According to WHO, AMR threatens the effective prevention and treatment of an ever-increasing range of infections caused by bacteria, parasites, viruses and fungi. Controlling antibiotics use to ensure effectiveness regulating over-the-counter sales of antibiotics remain critical. Ensuring that this is achieved requires making difficult ethical decisions that have implications on the lives, properties and businesses of other people.

**Use in Agriculture:** The use of antimicrobials in animals and food production remains important for the welfare of animals and the economic benefits for agriculture. However, this practice remains a major contributor to AMR development through its misuse especially as growth promoters in farm animals. Residues of antibiotics are passed on humans and thereby creating conditions for AMR development. Striking a balance between antimicrobial use in agriculture and ensuing the development of AMR in humans due to consumption of animal and animal products require serious ethical considerations.

**Conclusion:** Although science is not entirely clear on morality, scientific findings may have ethical implications. Antibiotic resistance gives rise to several ethical questions that need to be addressed. Closely considering the moral obligations in the context of AMR remains vital for the ethical significance of AMR to be included more widely into policy making, practice guidelines and training programs.