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One Health - The Fate of Public Health in Nigeria

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Abstract: The purpose of this study is to create awareness amongst physicians, veterinarians, environmentalists, and public health professionals in Nigeria on the critical need for "One Health". The continuous global emergence of novel infectious diseases has made scientists in the developed world realised that the only way to achieve a defensible and healthy society is by adopting the "One Health" Initiative. In Nigeria, the unattended poor sanitary measures, neglected porous international borders and deteriorated human and animal health care facilities have made the populace vulnerable to a lot of diseases emerging in different parts of the world. Health professionals in the country need to rise to the challenge through collaborative and synergistic efforts towards building a defensible and healthy society.

Key words: Animal, health, human, Nigeria, public

INTRODUCTION

What is "One Health"? The phrase "One Medicine" was coined by Sir William Osler (1849-1919) and later rearticulated in the 21st century by Dr. Calvin Schwabe (1927-2006) as "One Health"- which refers to the collaborative effort of multiple disciplines working locally, nationally and globally to attain optimal health for people, animals and our environment (Schwabe, 1984; Dunlop and Williams, 1996).

It is axiomatic that the living together of man, animals and our environment has created a complex domain in which the health of each group is interwoven and therefore inseparable. This complex domain can no longer thrive if physicians, veterinarians and public health professionals work indifferently and independently without admitting the inseparable connection of their professional entities.

An updated literature review identified 1,407 species of infectious organisms pathogenic to humans, 58% are zoonotic, 177 are considered emerging or reemerging of which 130 (73%) are zoonotic (Coker *et al*., 2000) This led to the growing concern that the world's latest generation could be the first in history to experience a reduction in life expectancy and health compared to prior generations. This is already evident in Sub-Saharan Africa (CDC, 2005).

Brief history of "one medicine" concept: The concept of "One Medicine" is not new. In the 19th century, the idea was embraced by heroes in the medical and veterinary medical professions such as:

Albertert Calmette (1863-1933), a French physician, bacteriologist and immunologist together with Jean-Marie Camille Guerin (1872-1961), a French veterinarian, bacteriologist and immunologist, who developed the BCG (Bacillus Calmette-Guerin) vaccine from *Mycobacterium bovis* isolated from cow (Myers, 1970).

Williams Osler (1849-1919), a physician known as the father of modern medicine, who conducted researches on hog cholera (classical swine fever), verminous bronchitis of dogs, Pictou cattle disease and others-also coined the term 'One Medicine' (Khan *et al*., 2007).

Rudolf Virchow (1821-1902), a physician and pathologist referred to as founder of comparative medicine, cellular biology and veterinary pathology, and also coined the term 'zoonosis' (Khan *et al*., 2007).

Rachel Carson (1907-1964), an environmentalist, whose study on environmental issues led to an appreciation of the health of the environment as an integral component to One Health concept (Carson, 1962).

Dr. Calvin Schwabe (1927-2006), a veterinary epidemiologist and parasitologist, who spent his life time practicing and teaching the principles of One Health in the 21st century, revived the concept of 'One Medicine' (Saunders, 2000).

At the Centre for Disease Control and Prevention (CDC) U.S.A, Veterinarians serve in positions that address not only infectious disease but also the entire

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spectrum of public health challenges; environmental health, chronic diseases, HIV-AIDS, immunization, laboratory animal medicine, global health, migration and quarantine, health education and bioterrorism (Dunlop and Williams, 1996).

Many countries in Europe and America, with better sanitary measures, organised quarantine procedures and sophisticated health care facilities have adopted the "One Medicine Initiative."

In 2007, the American Veterinary Medical Association (AVMA), the American Medical Association (AMA) and many other professional associations unanimously adopted the One Health Initiative and have designed how to achieve it in the shortest possible time (King, 2008). Likewise the Federation of Veterinarians of Europe (FVE) with their human counterpart (Walter, 2007).

The aims of one medicine include:

- Improving animal and human health through collaboration among all the health science especially between veterinary and human medical professions.
- Creating cross-disciplinary communication in professional journals, conferences and other professional motives.
- Improving research and surveillance in zoonotic and emerging diseases.
- Promoting research on cross-species disease, transmission and integration of human and veterinary disease surveillance and control system.
- Integrating educational system within and between human and veterinary medical schools.

PUBLIC HEALTH IN NIGERIA

Why do we need "One Medicine Concept"? Many of the infectious diseases that pose great threat to humans in Nigeria today are zoonoses (diseases that can be transmitted from animals to humans and are public health threats worldwide). A lot of patients in our hospitals present Fever of Unknown Origin (FUO) which is frequently misdiagnosed for different ailments due to neglect of zoonoses as differentials (Krauss *et al*., 2003) Though the HIV-AIDS virus now poses threats only to human life expectancy especially in Africa, it has been proven to originate from the monkeys (CDC, 2005). Avian influenza is also a zoonotic disease with the possibility of re-emerging so long as proper preventive measures are not instituted. Other infectious zoonotic diseases endemic in Nigeria include:

Tuberculosis, Yellow fever, Lassa fever, Taeniasis, Strongiloidiasis, Ascariasis, Giardiasis, Cryptosporidiosis, African Histoplasmosis *Escherichia coli* 0157:H7, Brucellosis, Larva migrans, Leishmaniasis, Trichinosis, Bilharziasis, Ringworm, Toxoplasmosis, Rabies, Fasciolosis (Coker *et al*., 2000; Wokem *et al*., 2008).

How do we achieve "One Medicine"? Due to the negligence of the Nigerian veterinary medical and human medical professions in the area of cross disciplinary interaction, a lot of basic primordial steps have to be taken before a solid "One Medicine" frame work can be achieved:

- The individual professions involved need to create sound awareness of the concept within and between them in order to establish a desirable bond.
- The superiority complex existing amongst physicians and veterinarians needs to be addressed by establishing the culture of veterinarians and human physicians working autonomously.
- The commonalities of human and veterinary medicine needs to be recognized.
- Cross discipline interaction should be encouraged in order to rise above the propensity for veterinarians and human physicians to communicate exclusively within their respective professions rather than interact across disciplines.
- The populace and the government need to be educated on the importance of One Medicine.

DISCUSSION

Our increasing interdependence with animals, their products, and the environment has triggered concerned physicians and veterinarians worldwide, who are the key components of public health to readdress their approach to contemporary health issues. This study supports and points out clearly the presence of numerous zoonotic infections in Nigeria as established by Coker *et al*. (2000) and Wokem *et al.* (2008). Nevertheless, if appropriate preventive and control measures can be instituted by stakeholders concerned as it has been designed in the United States (King *et al*., 2006), and as mentioned in this study, the populace can be saved from the menace of these endemic diseases.

CONCLUSION

This study has figured out that health professionals (especially medical doctors) in Nigeria and also the general public are less aware of the needed contributions of veterinarians in disease prevention/control and subsequently in the establishment of the One Health Concept. Moreover, the Millennium Development Goal (MDGs) targets the attainment of a sustainable healthy society in countries like Nigeria irrespective of the nature

of the committed professional contributions. Therefore, for Nigeria to accomplish a secured healthy society there must be greater awareness with respect to the commonalities of human health and animal health, the importance of linking human and animal disease surveillance, prevention and control efforts. There must also be inter disciplinary interaction between the veterinarians, physicians and all other professionals through seminars, conferences, public enlightenment campaigns, production of posters and fliers, media talks etc. The afore-mentioned tasks are responsibilities of the Nigerian Veterinary Medical Association (NVMA), the Nigerian Medical Association (NMA) and all concerned professionals in the country. As a developing country, there is the need for an immense contribution and support from the Federal and State governments through their respective Ministries of Health and Agriculture/and or Ministries of Animal Health.

REFERENCES

Carson, R., 1962. Silent Spring. Greenwich, Conn: Fawcett.

Coker, A.O., R.D. Isokpehi, B.N. Thomas and A.F. Fagbenro-Beyioku, 2000. Zoonotic infections in Nigeria: An overview from a medical perspective. Acta. Trop., 76: 59-63.

Centre for Disease Control and Prevention (CDC), 2005. Emerging Infectious Diseases. December, pp: 1842-1847.

Dunlop, R.H. and D.J. Williams, 1996. Veterinary Medicine: An Illustrated History. Mosby, New York, pp: 704.

King, L.J., 2008. One Health: A New Professional Imperative. One Health Initiative Task Force, Final Report.

King, L.J., 2006. Veterinary Medicine and Public Health at CDC. MMWR, 55(SUP02): 7-9.

Krauss, H., A. Weer, M. Appel, B. Enders, H.D. Isenberg, H.G. Schiefier, W. Slenczka, A. von Graevenitz and H. Zahner, 2003. Zoonoses - Infectous Diseases Transmissible from Animals to Humans. 3rd Edn., Journal of American Society for Microbiology (ASM), ASM Press Washington, DC, pp: 456.

Khan, L.H., B. Kaplan and J.H. Steele, 2007. Confronting zoonoses through closer collaboration between medicine and veterinary medicine (as 'one medicine'). Veterinaria Italiana, 43(1): 5-19.

Myers, J.A., 1970. Tuberculosis; A Half-Century of Study and Conquest. Warren H. Green, Inc., St Louis, Missouri, pp: 353.

Saunders, L.Z., 2000. Virchow's contributions to veterinary medicine: Celebrated the forgotten now. J. Vet. Pathol., 37: 199-207.

Schwabe, C.W., 1984. Veterinary Medicine and Human Health. 3rd Edn., Williams and Wilkins, Baltimore, pp: 680.

Walter, W., 2007. One World, One Health, One Medicine. Federation of Veterinarians of Europe Newsletter.

Wokem, G.N., C. Chukwu and C.B. Nwachukwu, 2008. Prevalence of intestinal parasites seen in HIV sero-positive subjects in Port Harcourt, Nigeria. Nigerian J. Parasitol., 29(2): 15-120.