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VETERINARY COUNCIL OF NIGERIA

Compilation of Papers Presented at the
VCN Professional Continuing Education Seminar 2016

Theme:

ANIMAL HEALTH AS A TOOL FOR NATIONAL ECONOMIC DIVERSIFICATION

Venues & Date

SOUTHERN CENTRE

Emmaus House, Arthur Eze
Avenue, Awka,
Anambra State.

14th July, 2016

NORTHERN CENTRE

State College of Education,
Minna/Suleja Road, Opposite
Tradoc, Minna,
Niger State.

4th August, 2016

VETERINARY SURGEONS:

A. General Session:

- i. The Challenges of Pastoralism on the National Economy Security by *Dr. J. A. Maina*
- ii. The Role of One Health in Managing Emerging and Re-Emerging National Health Challenges by *Dr. O. O. Babalobi*

B. Parallel Session-Veterinary Surgeons:

- i. **Medicine/Pharm./Public Health:** Drug Use, Abuse and Residue: The Implication for Economic Diversification by *Prof. Y. O. Aliu*
- ii. **Animal Production:** Livestock Genetic Upgrading and the National Economy by *Prof. P. I. Rekwot*
- iii. **Surgery:** Unraveling the Mystery behind Small Animal Surgery in the 21st Century: Theory, Principles and Practice (Series I) by *Dr. C. A. Awasum*

**VETERINARY COUNCIL OF NIGERIA (VCN) CONTINUOUS EDUCATION
SEMINAR (CEP)**

**THE ROLE OF ONE HEALTH IN EMERGING AND RE-EMERGING
NATIONAL HEALTH CHALLENGES**

Presenter:

Babalobi, Olutayo Olajide (DVM, MPVM, PhD; FCVSN)

Lecturer and Consultant Epizootiologist,
(One Health, Participatory Epizootiology and Veterinary ICT Research Group),
Department of Veterinary Public Health and Preventive Medicine,
Faculty of Veterinary Medicine,
University of Ibadan, Ibadan, Nigeria.
Website: <http://vet.ui.edu.ng/OOBabalobi>
E-mail: oo.babalobi@mail.ui.edu.ng; tayobabalobi@gmail.com
GSM Nos. : +234-816-753-8536; +234-805-530-1991.
LinkedIn: [ng.linkedin.com/pub/tayo-babalobi/25/a62/317/](https://www.linkedin.com/pub/tayo-babalobi/25/a62/317/)

Skype: olutayo.babalobi

Alive by His Grace for His Purpose

List- Creator, <onehealthnigeria@googlegroups.com>, an interactive email
discussion forum created to actively promote the institutionalization of
One Health in Nigeria.

Invitational Paper Presented at the VCN Professional Continuing Education Seminar
Held at Awka (Anambra State, on Thursday, July 14, 2016) and Minna
(Niger State, on Thursday, August 4, 2016)

Presentation Goal:

Veterinary contribution to Public Health in Nigeria through the One Health Approach

Presentation Objectives:

- i. Understanding One Health Approach beyond being a Concept
- ii. Identifying National Health challenges
- iii. Discussing the place of One Health in these Issues
- iv. Discuss Information on management of the diseases.

Presentation Approach: Participatory, Discussion, Interactive

Presentation Outline:

Introduction

Definition and discussion of key terms

Health and Dis-ease

Progression in Health approaches:

Public Health, Global Health, International Health, Veterinary Public Health (VPH), Planetary Health and One Health

One Health agenda

One Health: Interdisciplinary, Multidisciplinary or Transdisciplinary?

One Health and Inter-Professional Education

One Health: Beyond Zoonoses

Economics of One Health

Relationship between One Health and poverty

Preventing One Health silos

Tripartite One Health

One Health in Nigeria: Past, Present and Future

Tributes

Presentation Outline (Continued):

Emerging Diseases ED

Emerging Infectious Diseases EID

Emerging Transmissible Diseases ETD

Emerging Zoonoses EZ

Re- Emerging ("Lingering") Zoonoses

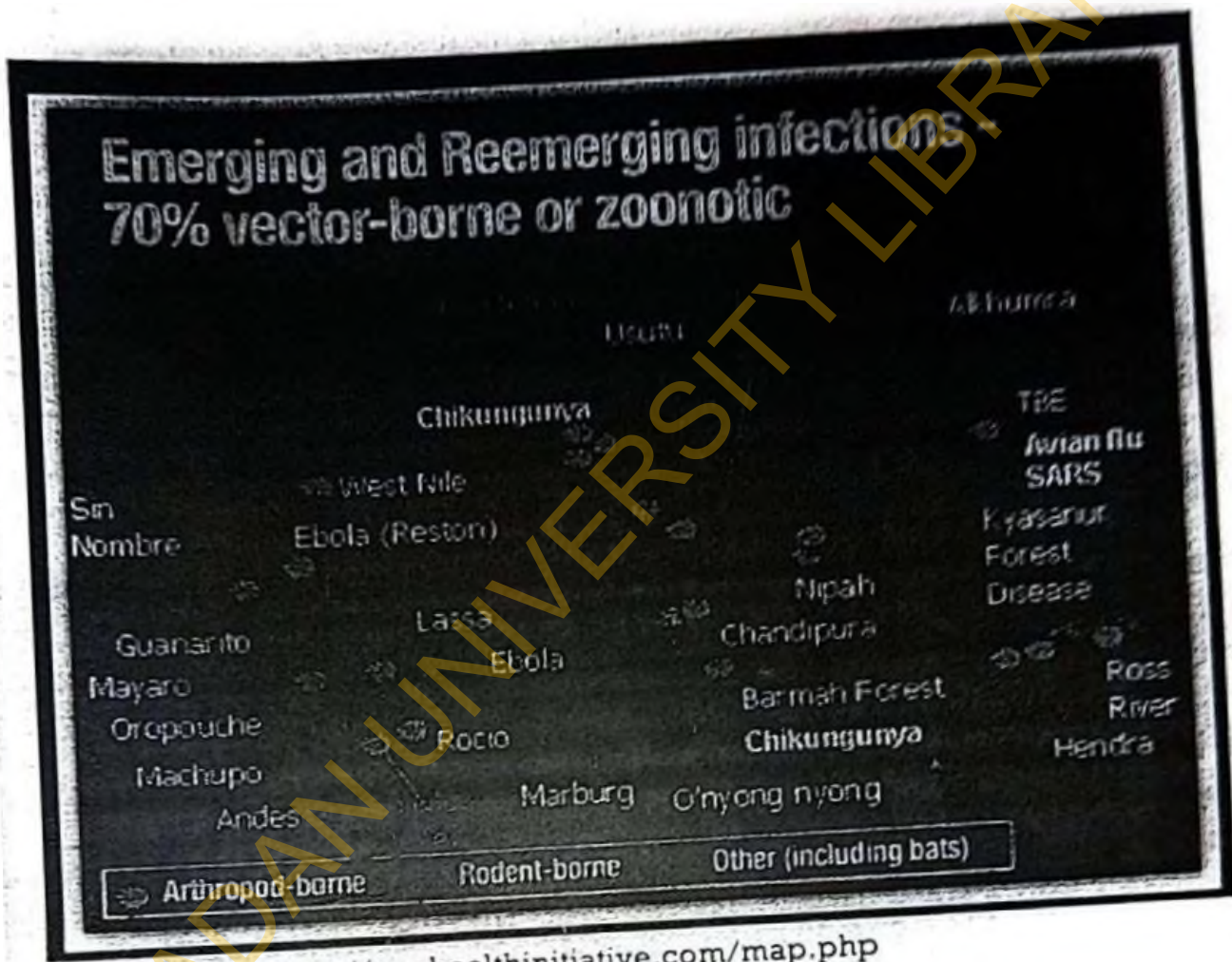
Multidisciplinary Approach in the Control of Zoonoses

Neglected Zoonotic Diseases and Poverty

Presentation Outline (Continued):

Nigeria National Health Challenges
 National One Health Policy
 Neglected Tropical Diseases (NTDs)
 Neglected Diseases and Zoonoses

Veterinary Contribution to Public Health
 Case Study



Source: <http://onehealthinitiative.com/map.php>



Introduction

The word **Health** is defined "A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." (WHO Constitution 1948). It is also referred to as 'a condition of physical, mental, and social well-being and the absence of disease or other abnormal condition. <http://medical-dictionary.thefreedictionary.com/Human+health>

The word 'health' was derived from the old English word 'hoelth', which meant a state of being sound, and was generally used to infer a soundness of the body (Dolfman M. The concept of health: an historic and analytic examination. Journal of School Health 1973; 43:491-7.)

Health [hoelth] is a relative state in which one is able to function well physically, mentally, socially, and spiritually in order to express the full range of one's unique potentialities within the environment in which one is living. The opposite of Health is **Dis-ease**: Dis ease: anything that makes a living being not to be at ease

Ease: The condition of being comfortable or relieved.

Un-ease: Lacking a sense of security; anxious or apprehensive

Stress: **Stress** is a person's response to a stressor such as an environmental condition or a stimulus. **Stress** is a body's way to react to a challenge.

Distress: may refer to occurrence when an individual cannot adapt to stress; i.e. suffering

Current views of health and illness recognize health as more than the absence of disease. The need for a more realistic definition of the word "Health" was expressed by Üstün & Jakob in 2005 in an article titled: Re-Defining Health which appeared in the *Bulletin of the WHO* 83:802. (http://www.who.int/bulletin/bulletin_board/83/ustun11051/en/) in which they quoted Australian Aboriginal people who generally define health thus:

"...Health does not just mean the physical well-being of the individual but refers to the social, emotional, spiritual and cultural well-being of the whole community. This is a whole of life view and includes the cyclical concept of life-death-life" (National Health and Medical Research Council. Promoting the health of Indigenous Australians. A review of infrastructure support for Aboriginal and Torres Strait Islander health advancement. Final report and recommendations. Canberra: NHMRC, 1996: part 2 :)

Individual Health/ well-being have various components including:

- Career Health
- Community Health
- Cultural Health
- Economic Health
- Emotional Health
- Family Health
- Financial Health
- Marital Health
- Mental Health
- National Health
- Physical Health
- Psychological Health
- Social Health
- Spiritual Health
- Etc.

Sequential progress in Health Approaches

i. Public Health: The field of medicine and hygiene dealing with *the prevention of disease in humans and the promotion of human community health by government agencies*. It is an extremely large, multi-disciplinary field with many professions working together to safeguard and improve the health of people all across the globe (The Columbia University Encyclopedia, 2003).

Public health refers to all organized measures (whether public or private) to prevent disease, promote health, and prolong life among the population as a whole. Its activities aim to provide conditions in which people can be healthy and focus on entire populations, not on individual patients or diseases. Thus, public health is concerned with the total system and not only the eradication of a particular disease.

The three main public health functions are:

- The assessment and monitoring of the health of communities and populations at risk to identify health problems and priorities.
- The formulation of public policies designed to solve identified local and national health problems and priorities.
- To assure that all populations have access to appropriate and cost-effective care, including health promotion and disease prevention services.

Public health professionals monitor and diagnose the health concerns of entire communities and promote healthy practices and behaviors to ensure that populations stay healthy.

<http://www.who.int/trade/glossary/story076/en/>

Public Health is Community-Based and its 'patient' is the community (Lisa M. Lee and Tanja Popovic (2006): Preface: 60 Years of Public Health Science at CDC, Morbidity and Mortality Weekly Report MMWR, 2006 Vol. 55 / Supplement: 1-3. December 22 2006)

ii. **Global health:** Global Health is the health of populations in a global context and transcends the perspectives and concerns of individual nations (Theodore M. Brown, Marcos Cueto, and Elizabeth Fee. The World Health Organization and the Transition from "International" to "Global" Public Health. American Journal of Public Health: January 2006, Vol. 96, No. 1, pp. 62-72. Doi: 10.2105/AJPH.2004.050831). It is the area of study, research and practice that places a priority on improving health and achieving equity in health for all people worldwide'(Koplan JP, Bond TC, Merson MH, et al. (June 2009): Towards a common definition of global health *The Lancet*, Volume 373, Issue 9679, Pages 1993-1995)
Global health is typified by the international activities of the World Health Organization WHO

iii. **International Health:** International health is defined as a well-established branch of public health, with origins in the health situation of developing nations and the efforts of industrialized countries to assist them(White F, Nanan DJ (2008). "Ch. 76:

International and Global Health". In Maxcy-Rosenau-Last. *Public Health and Preventive Medicine* (15th Ed.). McGraw Hill. pp. 1252-8.)

iv. Veterinary Public Health (VPH) is defined as "*The contributions to the physical, mental and social well-being of humans through an understanding and application of veterinary science*" [WHO/FAO/OIE definition 1999].

In 1975, the World Health Organization recognized the role of Veterinary Public Health in human health and commissioned the report of a Joint FAO/WHO Expert Committee on Veterinary Public Health. ("The Veterinary Contribution to Public Health Practice" Report of a Joint FAO/ WHO Expert Committee on Veterinary Public Health. Geneva, World Health Organization, 1975 (WHO Technical Report Series, No. 573).

Twenty-five years later in 1999, a study group on Veterinary Public Health (VPH), convened jointly by the World Health Organization (WHO), the Food and Agriculture Organization of the United Nations (FAO), and the Office International des Epizooties (OIE), and including twenty-eight experts from eighteen countries, defined veterinary public health as "*The contribution to the complete physical, mental, and social well-being of humans through an understanding and application of veterinary medical science.*" (WHO Study Group on Future Trends in Veterinary Public Health (1999: Teramo, Italy). Future trends in veterinary public health: report of a WHO study group. (WHO technical report series; 907). The meeting was opened by Dr F.-X. Meslin, Coordinator, Animal and Food-related Public Health Risks, World Health Organization (WHO), who pointed out the increasing importance of VPH for both developing and developed countries, as well as its role in helping to achieve the Health for all in the twenty-first century strategy adopted by the World Health Assembly in 1998 (Health for all in the twenty-first century. Geneva, World Health Organization, 1998 (document WHA51.5).

In 2002, The World Health Organization (WHO) has published its findings from a study group on the future of veterinary public health. The report describes the increasing emergence and reemergence of zoonotic diseases in the 1980s and 1990s and their importance for global public health (World Health Organization. Future trends in veterinary public health: report of a WHO study group. Technical report series, No. 907. Geneva: The Organization; 2002.)

ONE HEALTH

One Health has been defined as "the collaborative effort of multiple disciplines — working locally, nationally, and globally — to attain optimal health for people, animals and the environment" (The American Veterinary Medical Association. One Health Initiative Task Force. "One Health: A New Professional Imperative". July 15, 2008 https://www.avma.org/KB/Resources/Reports/Documents/onehealth_final.pdf).

My comprehensive definition:

All collaborating efforts of various human activities, **occupations and professions;** labouring as companions, working together, united to achieve a common mandate, purpose and responsibility of making man to be at ease with other biological and non-biological components of the earth and its environment. (BABALABI O. O. (2012): Implementing the One Health through the Nigerian Field Epidemiology Laboratory Training Program. Panel session on One Health: Concept to Action. International Conference on Emerging Infectious Diseases 2012 (ICEID 2012), Atlanta, Georgia, USA, March 11-14, 2012.

The "One Health" concept arose from the realization that human health and animal health are inextricably linked and that a holistic approach is needed to understand, protect, and promote the health of all species. "One Health" seeks to improve communication and encourage collaboration between veterinarians, physicians, environmental scientists and public health professionals to find multidisciplinary solutions to the shared challenge of public and environmental health.

It is a multidisciplinary strategy to prevent, control and eliminate the challenge of diseases, where possible, within a larger ecological context that includes humans, animals and plants interacting in a complex ever-changing natural environment recognizing that 60% of all human pathogens are zoonotic (http://nigeria-feltp.net/prog_desc.php)

A **discipline** (or **specialism**) is knowledge or wisdom associated with one academic field of study or profession. A discipline incorporates types of knowledge, expertise, skills, people, projects, communities, problems, challenges, studies, inquiry, approaches, and research areas that are strongly associated with academic areas of study or areas of professional practice. For example, the phenomenon of gravitation is strongly associated with the academic discipline of physics, and so gravitation is considered to be part of the disciplinary knowledge of physics.

Multidisciplinary: . . . of, relating to using several disciplines at the same time
mul·ti·dis·ci·pli·nar·y (m l t -d s -pl -n r , -t -). **adj.** Of, relating to, or making use of several disciplines at once: a multidisciplinary approach to teaching.— (The Free Dictionary)

Multidisciplinary knowledge is associated with more than one existing academic discipline or profession.

A multidisciplinary community or project is made up of people from different disciplines and professions who are engaged in working together as equal stakeholders in addressing a common challenge. - [http://en.wikipedia.org/wiki/Discipline_\(academia\)](http://en.wikipedia.org/wiki/Discipline_(academia))

Interdisciplinary:

Interdisciplinary (n t r-d s -pl -n r). adj. Of, relating to, or involving two or more academic disciplines that are usually considered distinct.
(<http://www.thefreedictionary.com/Interdisciplinary>)

Interdisciplinary knowledge is the knowledge extensions that exist **between or beyond** existing academic disciplines or professions. The new knowledge may be claimed by members of none, one, both, or an emerging new academic discipline or profession.

An interdisciplinary community or project is made up of people from multiple disciplines and professions who are engaged in creating and applying new knowledge as they work together as equal stakeholders in addressing a common challenge.

The key question is what new knowledge (of an academic discipline nature), which is outside the existing disciplines, is required to address the challenge.

Aspects of the challenge cannot be addressed easily with existing distributed knowledge, and new knowledge becomes a primary sub goal of addressing the common challenge. The nature of the challenge, either its scale or complexity, requires that many people have interactional expertise to improve their efficiency working across multiple disciplines as well as within the new interdisciplinary area.

An interdisciplinary person is a person with degrees from one or more academic disciplines with additional interactional expertise in one or more additional academic disciplines, and new knowledge that is claimed by more than one discipline. Over time, interdisciplinary work can lead to an increase or a decrease in the number of academic disciplines. [http://en.wikipedia.org/wiki/Discipline_\(academia\)](http://en.wikipedia.org/wiki/Discipline_(academia))

What is the difference between multidisciplinary and interdisciplinary?

Multidisciplinarity is a non-integrative mixture of disciplines in that each discipline retains its methodologies and assumptions without change or development from other disciplines within the multidisciplinary relationship.

An **interdisciplinary** field is a field of study that crosses traditional boundaries between academic disciplines or schools of thought, as new needs and professions have emerged.

[http://wiki.answers.com/Q/What is the difference between multidisciplinary and interdisciplinary](http://wiki.answers.com/Q/What_is_the_difference_between_multidisciplinary_and_interdisciplinary)

Disciplines involved In OH Include:

- Professions : Agricultural, Biomedical health, Ecological/Environmental, Laboratory, Medical and Veterinary Health
- Academic and Research Institutions: University Faculties/Schools/Colleges of Agriculture, Animal health and Production; Environmental Sciences; Biomedical, Medical, Nursing, Public Health, Community and Social Medicine; Veterinary Biomedical, Clinical and Pathological Medicine, Public Health and Preventive Medicine; Biomedical, Environmental and Veterinary Research Institutes)
- Relevant professional students/trainees: (agricultural, biomedical, environmental health, laboratory, medical, nursing, public health, veterinary etc.
- Other non-professional/ occupational trainees

The One Health concept arose from the realization that human health and animal health are inextricably linked and that a holistic approach is needed to understand, to protect, and to promote the health of all species.

Whether it is
Emerging infectious diseases,
Antibiotic resistance,
Globalization,
Natural disasters, or
Climate change,

Human and veterinary medical communities must work together to successfully combat the serious health threats of the 21st century.

One Health seeks to improve communication and encourage collaboration and coordination between veterinarians, physicians, environmental scientists and public health professionals to find multidisciplinary solutions to these shared challenges.

One Health is no longer a concept or initiative; it is a call to action

EMERGING (AND RE-EMERGING) CHALLENGES AT GLOBAL LEVELS

Emerging Diseases (ED)

Human infectious diseases are caused by more than 1400 pathogen species with considerable diversity in lifestyles. Almost all pathogens of newly emerging diseases come from animal reservoirs. Most are viruses, especially RNA viruses. The emergence of a new infectious disease in the human population involves exposure to the pathogen, successful infection of the hosts, and sufficient transmission between hosts. These different levels of emergence make up the 'pathogen pyramid'. Both ecological and evolutionary changes can affect a pathogen's position on the pyramid. HIV/AIDS, influenza (H5N1), SARS, Ebola, and monkey pox are emerging diseases. From the available data it is hard to tell if ecological changes alone caused these diseases to emerge or if evolutionary changes were sometimes involved as well. The past provides some guidelines as to which kinds of pathogen are most likely to emerge in the future. Mark Woolhouse, Rustom Antia: Evolution in Health and Disease. Chapter 16 Emergence of new infectious diseases. p. 215)

Emerging infectious diseases (EID):

The broad definition of an emerging infectious pathogen used by the US Centers for Disease Control and Prevention is one *'whose incidence in humans has increased within the past two decades or threatens to increase in the near future'* [Lederberg et al 1992), but it was suggested over 10 years ago that emerging pathogens were very frequently zoonotic [Morse 1995). Over the last several decades, there has been an average of almost one new emerging disease each year, and approximately 75% of these diseases have been zoonotic (King 2004). • ~5 new EIDs each year • ~3 new Zoonoses each year • Zoonotic EIDs from wildlife reach highest proportion in recent decade Peter Daszak, 2016

Emerging infectious diseases (EIDs) are a significant burden on global economies and public health. Their emergence is thought to be driven largely by socio-economic, environmental and ecological factors, but no comparative study has explicitly analysed these linkages to understand global temporal and spatial patterns of EIDs.

Analysis of a database of 335 EID 'events' (origins of EIDs) between 1940 and 2004, and demonstrate non-random global patterns. EID events have risen significantly over time after controlling for reporting bias, with their peak incidence (in the 1980s) concomitant with the HIV pandemic. EID events are dominated by Zoonoses (60.3% of EIDs): the majority of these (71.8%) originate in wildlife (for example, severe acute respiratory virus, Ebola virus), and are increasing significantly over time. 54.3% of EID