Core Competence of the MSc. (Epizootiology) programme at University of Ibadan, Ibadan, Nigeria.

Babalobi O.O.

Lecturer-Consultant (Epizootiology) and Animal Health Information Specialist, Department Of Veterinary Public Health and Preventive Medicine, Faculty of Veterinary Medicine, University of Ibadan. Ibadan, Nigeria.

Abstract

The concept of Core Competence developed to assess professional training needs, was applied in this 2004 study to evaluate the Masters of Science (Epizootiology) programme developed in 1984 at the Department of Veterinary Public Health and Preventive Medicine, Faculty of Veterinary Medicine, University of Ibadan. Ibadan, Nigeria. Results indicate the curricular covered four of the five major Core Competency needs in Epizootiology (Veterinary Epidemiology), with sufficient curricular courses available for General Skills, Surveillance and Monitoring Skills, Outbreak Investigation Skills as well as Study Design and Analysis. There are however major deficiencies in the fifth core subject of Risk Analysis.

In addition to including the socio-economic concept of risk analysis, there is a review of the Masters of Epizootiology curricular of the University of Ibadan to harness all concepts within the fundamental nature of epizootiology; from the traditional long-established macroscopic field-based Participatory Epizootiology/Ethno-Veterinary Medicine perception of the stakeholder rural livestock farmer, to promoting modern contemporary microscopic desk/laboratory epizootiological concepts of Risk Assessment, Genetic and Molecular Biology, Geographic Information System and other Veterinary Computer Informatics facilities. However, field-based observational and descriptive studies remain the basis of epizootiological training and investigation.

Introduction

Epizootiology is the science that studies the origin, frequency, distribution and determinants of animal population health and diseases; and defines methods for promotion, protection and restoration of population health by reducing, eliminating and eradicating diseases (Kouba 2003). Epizootiology is a systematic and holistic study of the causations of ill health and other problems of populations of animals in the context of their animate and inanimate environment, with objectives for effective prevention and control interventions (Esuruoso 1993). Also known as Veterinary Epidemiology (VE) and/or Veterinary Epidemiology and Economics (VEE), it is the veterinary counterpart of human medicine 'Epidemiology'.

Competency describes the knowledge, skills and abilities required in any field. A core competency is fundamental knowledge, ability, or expertise in a specific subject area or skill set. The *core* part of the term indicates that the individual has a strong basis from which to gain the additional competence to do a specific job. (http://watis.techtarget.com/definitions). Detailed analyses of the Competency concept are available in the Public Health Competencies project of www.TrainingFinder.org (http://www.phf.org/Link.html).

Rhodes *et al* (2000) has proposed a model for the core competencies required in a contemporary Veterinary Epidemiologist. These are in the areas of

1. General Skills,
2. Surveillance and Monitoring Skills,
3. Outbreak Investigation Skills,
4. Study Design and Analysis,
5. Risk Analysis.

Materials and Methods

At the Department of Veterinary Public Health and Preventive Medicine, University of Ibadan, Ibadan, Nigeria, Advanced Epizootiology (PVM 701) is a core subject in the department's three postgraduate courses. These courses are **Master of Preventive Veterinary Medicine (MPVM)**, **Master of Veterinary Public Health (MVPH)** and **Masters in Epizootiology (M.Sc Epizootiology)**, and were designed in 1984 (Esuruoso 1984). However the M.Sc Epizootiology programme did not get started till 1986.

This study was conducted in 2004/2005 in preparation for the 2005 review of postgraduate courses at the University of Ibadan. It evaluated the M.Sc. (Epizootiology) program against the model for core competencies required in a contemporary Veterinary Epidemiologist (Rhodes *et al* 2000).

Result

The University of Ibadan, Nigeria M.Sc. (Epizootiology) courses providing core competencies for the Veterinary Epidemiologist are reflected in Table 1 below:

Table 1   M.Sc. (Epizootiology) courses at the Department of Veterinary Public Health and Preventive Medicine, University of Ibadan, Ibadan, Nigeria providing core competencies for Veterinary Epidemiologist.

SUBJECT	CORE COMPETENCIES	COURSES THAT COULD GIVE DESIRED COMPETENCY
GENERAL SKILLS	+ Communication skills + Computer skills + Animal health, Public health and disease awareness + Economic awareness	- PVM 701: Advanced Epizootiology - PVM 703: Advances in Veterinary Extension Promotion and delivery - PVM 704: Technical Report Writing - PVM 707: Veterinary Biometrics - PVM 708: Abattoir Design, Management and Effluent disposal - PVM 712: Animal by-products and quality control measures - PVM 716: Economics of Livestock Diseases - PVM 712: Advances in Veterinary Business Management
SURVEILLANCE AND MONITORING	+ Evaluation of an existing surveillance and monitoring systems + Surveillance system design and / or operation + Evaluation of available diagnostic tests	- PVM 701: Advanced Epizootiology - PVM 705: Disease Surveillance and Reporting - PVM 706: Veterinary Biometrics - PVM 712: Animal by-products and quality control measures
OUTBREAK INVESTIGATION	+ Design and/ or conduction of outbreak investigation + Emergency preparedness or response measures	- PVM 701: Advanced Epizootiology - PVM 702: Applied Veterinary Immunology - PVM 704: Technical Report Writing - PVM 706: Advances in Vaccine Production and Vaccination - PVM 707: Veterinary Biometrics - PVM 717: Seminar

STUDY DESIGN AND ANALYSIS	+ Design of epidemiological study + Execution of epidemiological studies + Critique of journal articles and submissions	- PVM 701: Advanced Epizootiology - PVM 702: Applied Veterinary Immunology - PVM 704: Technical Report Writing - PVM 706: Advances in Vaccine Production and Vaccination - PVM 712: Animal by-products and quality control measures - PVM 718: Project
RISK ANALYSIS	+ A working knowledge of the complex interactions between science, politics and animal health policies + Evaluation of an existing risk analysis + Risk Assessment design and / or execution	- ???

Discussion

The University of Ibadan Nigeria M.Sc. (Epizootiology) courses curricular designed in 1984 adequately covered four of the five major Core Competency needs in Epizootiology (Veterinary Epidemiology), with sufficient curricular courses available for General Skills, Surveillance and Monitoring Skills, Outbreak Investigation Skills as well as Study Design and Analysis. There were however major deficiencies in the fifth core subject of Risk Analysis (a method of estimating statistical and predictive risk by data analysis and modeling, rather than by subjective intuitive risk as perceived by individuals).

Modern Veterinary Epidemiology has become more Quantitative with mathematical concepts such as Risk Assessment, Geographic Information System, Veterinary Informatics and Computer based Modeling Software packages being applied. Worldwide, the Internet provides limitless opportunities for computer based Veterinary Education, Service Delivery and Research (See Bernado 2000 and Hird et al 2000). Genetic and Molecular Biology have also afforded better and deeper understanding of animal health and production problems. At the same time, new concepts in Qualitative Epizootiology have evolved, the most important being Participatory Epizootiology. Thus, the curricular of the three postgraduate courses at the Department of Veterinary Public Health and Preventive Medicine, University of Ibadan, Ibadan Nigeria, have been reviewed to meet these contemporary core competency training needs.

Conclusion

In this new millennium, Veterinary Epidemiology teaching, training and research must involve these complementary aspects of contemporary quantitative and qualitative Epidemiology (Thrusfield 1988, 1992). Computer and other Information Technology facilities should be provided to allow exposure of students to opportunities available through such medium. However, while Veterinary Epidemiology becomes more analytical and quantitative, the basic foundation of quantitative field-based observational and descriptive studies will continue to be the bedrock of Veterinary Epidemiology. As pointed out by Esuruoso 2001 (personal communication) *"unless the literary (qualitative facts) and the numerical (quantitative figures) come together, the meaning (veterinary epidemiology results) tends to be deceptive"*.