

RE-PROFILING OF VETERINARY PROFESSION

Day 1 Competencies for Veterinarians in Africa



Acronyms

2A2E-V	Association of African Veterinary Education Establishment
2A-VSB	Africa Association of Veterinary Statutory Bodies
AC	Advanced Competency
BC	Basic Competency
ACFTA	Africa Continental Free Trade Area
Africa-CDC	Africa Centres for Disease Control
AHSA	Animal Health Strategy for Africa
AMR	Anti Microbial Resistance
AU-IBAR	African Union - Interafrican Bureau for Animal Resources
AU-PANVAC	Pan African Veterinary Vaccine Centre of the African Union
AU-PATTEC	Pan African Tsetse and Trypanosomiasis Eradication Campaign
CODEX alimentarius	The Food Code, adopted by the CAC
CAC	CODEX alimentarius commission - Joint FAO/WHO Food Standards Programme
COP	Conference of parties (of the United Nations)
CPD	Continuing Professional Development
CVO	Chief Veterinary Officer
FAO	Food and Agriculture organisation of the United Nations
FSMS	Food Safety Management Systems
GF-TAD	The Global Framework for the Progressive Control of Transboundary Animal Diseases
GIS	Graphic Information Systems
GMO	Genetically Modified Organism
GMP	Good Manufacturing Process
HACCP	Hazard Analysis Critical Control Points
IATA	International Air Transport Association
ISO	International Organisation for Standardisation
OIE	World Organisation for Animal Health
PPP	Public Private Partnership
RMS	Resource mobilisation Strategy
SPS	Sanitary and Phytosanitary measures
SPS Agreement	the Agreement on the Application of Sanitary and Phytosanitary Measures (of the WTO)
TAD	Transboundary animal disease

UNCCC	United Nations Convention on Climate Change
VPP	Veterinary Para Professional
VS	Veterinary Services
VSB	Veterinary Statutory Body
WAHIS	World Animal Health Information System
WHO	World Health Organisation
WTO	World Trade Organisation

Introduction

AU-IBAR has taken the initiative to update and reinforce the competence of veterinarians and veterinary para professionals (VPPs), who work under the supervision of licensed veterinarians, to ensure better contribution of the livestock sector to the economy in Africa. This initiative emerges from the understanding that effective delivery of public and private veterinary services (VS) requires adequate initial and continuous training of veterinarians. This would be done through updating the curricula and upgrading on-the-job training of the existing workforce. VS and in particular Veterinary Statutory Bodies (VSB) will be encouraged to institute Continuing Professional Development (CPD) requirements for veterinarians and identify/develop CPD materials and opportunities to enable veterinarians to acquire the necessary minimum points to satisfy the requirements.

AU-IBAR, within the framework of the Animal Health Strategy of Africa (AHSA) and with the support of AHSA Guiding Group (GG), identified key competencies to improve and strengthen the quality and the performance of the VS in Africa using the “OIE recommendations on the Competencies of graduating veterinarians (‘Day 1 graduates’) to assure National Veterinary Services of quality” document (published in May 2012) and other materials as reference documents. The aim is to reinforce competencies that address challenges peculiar to the African continent. This document addresses the required competencies of veterinarians and will be complemented by a similar initiative targeting VPPs.

The document is intended to be a guide for member countries, who should adapt the competencies for their specific national and regional needs. In accordance with the OIE document: “OIE recommendations on the Competencies of graduating veterinarians (‘Day 1 graduates’) to assure National Veterinary Services of quality”. Specific Competencies (SC) are those competencies required for a veterinarian to be licensed by the relevant Veterinary Authority, and Advanced Competencies (AC) are those required for a veterinarian to work within the Veterinary Authority. The Specific Competencies in the document refer to those competencies required by a day 1 graduate to work in National Veterinary Service (as opposed to clinical practice). Twenty (18) specific competencies and Twelve (12) advanced competencies in the veterinary domain were identified as being relevant for veterinary work in Africa.

The formulation of this document went through a rigorous consultative and peer-review process involving the Association of African Veterinary Education Establishment (2A2E-V), the Africa Association of Veterinary Statutory Bodies (2A-VSB) and the CVOs common position forum, and was reviewed and validated at the workshop in Dakar Senegal 11 – 15 November 2019.

Day 1 Competencies for Veterinarians

Specific Competencies (SC)

SCI Epidemiology

- Know and understand the general principles of descriptive epidemiology, its application to disease control and the ability to access and use appropriate information sources;
- Understand and participate appropriately in an epidemiological inquiry in case of occurrence of a reportable disease, including collection, handling, and transport of appropriate specimens or samples;
- **Understand risk-based surveillance, syndromic surveillance and participatory approaches using well defined case definition;**
- **Be competent in disease management systems (prevention, control and eradication);**
- **Be aware of the use of Geographic Information Systems (GIS);**
- **Be aware of bio-statistics, animal health economics and the economic impact of animal diseases;**
- **Be aware of the implications of diseases at the livestock and wildlife interface.**

SC2 Transboundary animal diseases (TADs)

- Identify the pathogens, pathogenesis, clinical signs, clinical course and transmission potential (including vectors) associated with TADs;
- Describe the current global distribution of TADs or know where to find up-to-date distribution information;
- Use or explain the collection and handling of samples and the rationale for the use of appropriate diagnostic and therapeutic tools to prevent and combat TADs and pathogens;
- Understand regulatory implications of TADs and pathogens (e.g. the Official Veterinarian who should be contacted if an epizootic pathogen is identified or suspected) and know where to find relevant up-to-date information;
- **Understand and participate in the implementation of contingency plans to control transboundary diseases, including humanely culling animals;**
- **Know about the OIE, WAHIS, GF-TADs and other regional, continental and global networks active on TADs;**
- **Understand the requirements for shipment of samples in line with regulations (e.g IATA and others);**
- **Understand harmonisation of cross boarder disease control strategies and programs (e.g. Joint vaccination programs);**
- **Understand governance issues and implications surrounding TADs.**

SC3 One Health

- Understand the concept and requirements of One Health;
- Know the fundamental role of veterinary services in the protection of animal, human and ecosystem health;
- Be aware of the need to operate One Health at national level;
- Understand the roles of national and regional public institutes as well as the Africa Centres for Disease Control and prevention (Africa CDC);
- Be aware of existent different One Health tools (e.g. the Joint External Evaluation Tool; One Health Zoonotic Disease Prioritisation tool etc).

SC4 Zoonoses (including food borne diseases)

- Identify the clinical signs, clinical course, transmission potential, and pathogen associated with common zoonotic and food borne diseases;
- Use or explain the use of current diagnostic and therapeutic tools for common zoonotic and food borne diseases;
- Understand the implications of common zoonotic and food borne diseases for human health (e.g. how does the disease spread from animals to humans) and know where to find up-to-date and reliable information;
- Understand regulatory implications (e.g. the Official Veterinarian who should be contacted if a zoonotic pathogen is identified or suspected) of common zoonotic and food borne diseases and pathogens and know where to find up-to-date and reliable information;
- Understand the role of wildlife and environment in zoonotic diseases.

SC5 Emerging and re-emerging diseases

- Define “emerging disease” and “re-emerging disease” and provide contemporary examples;
- Detect suspicious signs and report them to the relevant veterinary authority;
- Understand the reasons/hypotheses to explain the emergence and /re-emergence of diseases;
- Know where to find up-to-date and reliable information regarding emerging and re-emerging diseases;
- Be aware of forecasting and be aware of risk factors;
- Be aware of early warning and rapid response systems.

SC6 Disease diagnosis, treatment, prevention and control programmes

- Describe established programs for the prevention and control of common zoonotic or contagious diseases or emerging/re-emerging diseases, to include animal identification and traceability and oversight by the relevant veterinary authority;
- Understand and participate in regular or emergency vaccination campaigns, as well as in regular test- and-cull/treat programmes;

- Explain the concept of an “early detection system”, which is defined as a system, under the control of the veterinary services, for the timely detection and identification of an incursion or emergence of diseases/infections in a country, zone or compartment;
- Know which diseases of animals (including companion animals) require compulsory notification by the veterinarian to the prescribed national authority in order to mitigate disease transmission;
- Know where to find up-to-date and reliable information regarding specific disease, prevention and control measures, including rapid response mechanisms;
- **Understand the national, regional, continental and global animal diseases control and eradication programmes, and the regional co-ordination mechanism.**

SC7 Food Safety

- Understand and explain on-farm food safety practices;
- Be able to carry out slaughter inspection: this includes ante mortem, post mortem and humane slaughter;
- Understand and explain the integration between animal health controls and veterinary public health: the role of veterinarians in conjunction with physicians, public health; practitioners, and risk analysts to ensure safe food;
- **Understand food safety standards and regulation;**
- **Understand the risks associated with drug residues;**
- **Understand the risks associated with the use of chemical additives.**

SC8 Veterinary Products

- Know how to use common veterinary products in the appropriate manner, including appropriate record keeping;
- Understand the concept of drug withdrawal time as a means to prevent drug residues in products of animal origin meant for human consumption, and know how to find up-to-date and reliable information regarding specific withdrawal times;
- Know where to find and how to interpret up-to-date and reliable information regarding the link between use of antimicrobials in food animals and development of antimicrobial resistance in pathogens of human importance;
- Know the appropriate and rational use of drugs and biologicals to ensure the safety of the food chain and the environment (e.g. proper disposal of biological waste);
- **Understand the need for drug and biological veterinary product authorisation, registration and control; and have a broad understanding of the process;**
- **Understand the regulations governing hazardous substances;**
- **Understand the regulations on GMO;**

- **Understand the principles and approaches of Ethno-veterinary medicine and its application to animal disease control;**
- **Understand the concept and implementation of pharmacovigilance.**

SC9 Animal Welfare

- Understand the concept of animal welfare and the related responsibilities of owners, handlers, veterinarians and others responsible for the care of animals;
- Know how to identify animal welfare problems and participate in corrective actions;
- Know where to find up-to-date and reliable information regarding local, national and international animal welfare regulations/standards in order to describe humane methods for:
 - production;
 - transport;
 - housing and habitat;
 - slaughter for human consumption and killing for disease control purposes.
- **Understand the Africa Animal Welfare Strategy and programme;**
- **Understand the relationship between animals and humans, and its history;**
- **Understand the concept of One Welfare, and the link between better animal welfare, increased productivity, increased market value and improved livelihood;**
- **Understand the need for acknowledging animal welfare requirements in research.**

SCI0 Veterinary legislation and ethics

- Have a general knowledge of the fundamentals of national veterinary legislation and of specific rules, regulations and code of ethics governing the veterinary profession at the local, provincial, national, and regional level (in some countries this information may be delivered to the graduates by the Veterinary Statutory Body after graduation);
- Know where to find up-to-date and reliable information regarding relevant veterinary legislation, rules and regulations;
- Understand and apply high standards of veterinary ethics in carrying out day-to-day duties;
- Provide leadership to society on ethical considerations involved in the use and care of animals by humans;
- **Understand good practices in the legislation development processes at national level;**
- **Understand cultural practices associated with animal ethics.**
- **Understand the process of a veterinarian being an expert witness in matters of animal welfare and other professional issues.**

SCI1 General Certification procedures

- Examine and monitor an animal or a group of animals with a view to certifying freedom from specified diseases according to established procedures for the purpose of transport, export and trade (including understanding the requirements for the importing country);
- Fill out, sign and provide health certificates according to the national and international rules;
- **Examine animal products with a view to certification according to established procedures;**
- **Fill out sign and provide certificates for animal products and according to national and international rules.**

SCI2 Communication skills

- Communicate technical information in a way that the general public can understand using verbal and non-verbal skills and existing communication and information technologies;
- Communicate effectively with fellow health professionals to exchange scientific and technical information and practical experience;
- **Communicate effectively in an emergency situation;**
- **Be aware that the communication techniques depends on the circumstances.**

SCI3 Biosafety & Biosecurity

- **Identify, analyse and manage biological risk using principles of biosafety and biosecurity;**
- **Be aware of hazards and risks associated with exposure to different categories of pathogenic agents, materials and the environment;**
- **Be aware of processes and procedures applied for identifying, prioritising and controlling sensitive information, agents and technology.**

SCI4 Veterinary Statutory Bodies(VSBs)

- **Understand the role of the VSB in terms of 3 pillars: patient, client and veterinarian/ VPPs;**
- **Understand the VSB role in setting and maintaining standards of education and standards of practice for veterinarians and VPPs;**
- **Understand the role of the VSB in national legislation;**
- **Understand the VSB requirements and procedures for licensing, authorisation and registration of veterinarians, and VPPs and Veterinary facilities;**
- **Be able to differentiate between the VSB and any Associations or Unions and understand their different roles.**

SCI5 Animal Resource contribution to National Economy

- Understand the importance of animal resources at an economic, nutritional, food safety and food security level;
- Understand the challenges and opportunities within the animal resource sector relating to policies, institutions, coordination and use of technologies
- Be able to advocate for increased investment in the animal resource sector using evidence- based information;
- Be aware of organisations, programs and strategies that work in promoting the development of the animal resource industry (AU-IBAR, AU-PANVAC, AU-PATTEC, AU Agenda 2063 etc)

SCI6 Livestock production systems

- Understand that different livestock production systems exist in Africa, most under extensive systems in the arid and semi-arid lands (including transhumance and nomadism);
- Understand the links between production systems and disease occurrence; and be conscious of the One Health concept;
- Know best practices for preserving of natural resources (including indigenous breeds), and rangeland management.

SCI7 Antimicrobial Resistance (AMR)

- Understand that AMR is a major global public health concern and a food safety and One health issue;
- Be able to address the critical role of AMR in the treatment of disease of food producing animals and its impact on human and animal health with the appropriate use of antimicrobials;
- Be aware of global and national action plans (OIE, FAO, WHO etc) to tackle AMR;
- Be aware of legal requirements regarding antimicrobial use;
- Be aware of current research and publications in the field of AMR.

SCI8 Aquatic Resources

- Be aware of the OIE Aquatic Animal Health Code (the Aquatic Code);
- Know the aquatic animal diseases listed by the OIE;
- Be aware of aquatic animal production systems;
- Know the principles and best practices for aquatic animal health surveillance, disease control and feeding.

Advanced Competencies (AC)

AC1 Organisation of Veterinary Services

- Understand that the delivery of Veterinary Services (VS) is a global public good;
- Know how veterinary services are organised within the country/region (e.g., central and local levels, epidemiological networks);
- Understand the function and authority of VS within country/region;
- Understand how the VS interact with veterinary services in other countries and international partners;
- Understand the relationship between private and public sector veterinarians in delivery of VS;
- Understand the need to evaluate the quality of VS as provided for in the OIE PVS Pathway;
- Be able to find up-to-date and reliable information in terms of VS;
- **Understand the necessary links between VS, Animal Production, Public Health, Wildlife, and other institutions (One Health);**
- **Understand the existence of community organisations/other networks and the importance of safe delivery and use of drugs;**
- **Understand the principles of monitoring, evaluation and knowledge management;**
- **Understand the essence of quality enhancement, control, and assurance;**

AC2 Management of contagious disease

- Understand the management of samples and the use of appropriate diagnostic tools and therapeutic interventions;
- Be aware of the process for determining the source and spread of a disease;
- Be aware of the process for monitoring and conducting initial surveillance of diseases including communication of epidemiological information to other public health practitioners;
- Know the methods to:
 - Identify and trace animals;
 - Control movement of animals, animal products, equipment, and people;
 - Quarantine infected and at-risk premises/areas;
 - Humanely cull infected or exposed animals;
 - Dispose of infected carcasses in an appropriate manner;
 - Disinfect or destroy contaminated materials.
- **Understand zoning and compartmentalisation principles;**
- **Understand the role of animal feeds in the transmission of infectious diseases;**
- **Understand preparedness, response and after-action review;**
- **Understand the role and implementation of routine and emergency vaccination in the management of contagious diseases;**
- **Understand and apply Incident management system principles.**

AC3 Food Safety

- Be aware of the risk-based performance of slaughter inspection including ante mortem, post mortem, humane slaughter and hygienic dressing;
- Be aware of residue testing programmes;
- Be aware of the traceability of animal products;
- Be aware of sanitation at food processing plants, proper storage of processed animal products, in-home food storage and preparation safety, and health and cleanliness of all humans involved in the food chain from farm to fork;
- **Understand Hazard Analysis Critical Control Points (HACCP), Food Safety Management Systems (FSMS) and Good Manufacturing Process (GMP);**
- **Understand different methods of food preservation.**

AC4 Application of risk analysis

- Know how risk analysis can be applied to assessment of risk of animal disease and residues of veterinary drugs, including importation of animals and animal products and other related veterinary services activities;
- Know how risk analysis along the value chain can be used to ensure that veterinary services adequately protect animal and human health;
- Know where to find up-to-date and reliable information (e.g. the OIE Handbook on Import Risk Analysis);
- Understand the following risk analysis concepts:
 - **hazard identification:** the process of identifying pathogenic agents which could potentially be introduced in the commodity (e.g., food of animal origin);
 - **risk assessment:** evaluation of the likelihood and the biological and economic consequences of entry, establishment, and spread of a hazard within a territory;
 - **risk management:** the process of identifying, selecting, and implementing measures that can be applied to reduce the level of risk;
 - **risk communication:** the interactive transmission and exchange of information and opinions throughout the risk analysis process concerning risk; risk-related factors; and risk perceptions among risk assessors, risk managers, risk communicators, the general public, and other interested parties (e.g. stakeholders).
- **Understand the transboundary dimension of risk analysis.**

AC5 Research

- Understand that research means testing a hypothesis by appropriately designing and implementing a protocol, analysing the data, drawing conclusions and publishing the results;
- Be aware that translational and interdisciplinary research is essential to advance veterinary knowledge so that future generations are better equipped to assure the health of animals, the public, and the ecosystem;
- Understand the role of laboratory methods and diagnoses in research;
- Understand the need for good clinical records in research.

AC6 International trade framework

- Be aware of the World Trade Organisation (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) and the role and responsibilities of other standard setting organisations (OIE, Codex Alimentarius Commission (CAC) in developing science-based current regulations governing international trade in animals and animal products;
- Be aware of current international regulations, that govern the safe trade of animals and animal products;
- Understand the import control mechanisms and certification processes related to protection of the health of animals, the public, and the ecosystem in the importing country;
- **Be aware of the Africa Continental Free Trade Area (ACFTA) and other regional trade agreements;**
- **Be aware of the role of national veterinary services and AU-IBAR in articulating common African positions relating to international regulations governing trade of animals and animal products;**
- **Be aware of ISO standards and quality management systems relevant to veterinary services.**

AC7 Administration and management of VS

- Know best practices in administration and management of VS;
- **Be proficient in at least one AU language;**
- **Understand planning and budgeting processes;**
- **Understand the principles of good governance;**
- **Be aware of good leadership and strategic management principles;**
- **Be aware of policy development and analysis processes; project cycle management, logical frameworks and feasibility studies.**

AC8 Climate Change

- Understand how livestock impact on climate change and be aware of the measures to mitigate that impact;
- Be aware of the resolutions/recommendations of the Conference of Parties (COPs) for United Nations Framework Convention on Climate Change (UNFCCC);
- Understand national & regional protocols/legislations and rules on climate change.

AC9 Public Private Partnership (PPP)

- Understand the benefits of PPP in delivering veterinary services;
- Understand national and regional rules and regulations as they relate to PPP.

AC10 Vet-business

- Understand basic procedures to carry out a feasibility study and develop a business plan;
- Understand funding requirements to secure funding from potential investors/banks.
- Understand the need to develop a resource mobilisation strategy (RMS) and plan;
- Understand the process and requirements for resource mobilisation within the national budget;
- Understand the need to map potential partners and develop narrative/concept notes.

AC12 Value Chains

- Understand the concept and approach of Value Chains;
- Be aware of existing national and regional animal resource (livestock, wildlife and fisheries) value chains;
- Understand risk analysis along value chains.

