




THE REPUBLIC OF UGANDA

NATIONAL ONE HEALTH TRAINING MANUAL



National One Health Platform
July 2022



The National One Health Platform, Kampala, Uganda is the author of this Training Manual with the following lead sectors and Agency.

- I. Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)
- II. Ministry of Health (MOH)
- III. Ministry of Water and Environment (MWE)
- IV. Uganda Wildlife Authorities (UWA)

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Abbreviations and Acronyms

ARIS	Animal Resources Information System
ASF	African Swine Fever
CAO	Chief Administrative Officer
CBO	Community Based Organization
CCHF	Crimean Congo Hemorrhagic Fever
CDC	Centre's for Disease Control
CHC	Communication for Health Communities
COCTU	Coordinating Office for Control of Trypanosomiasis in Uganda
COVAB	College of Veterinary Medicine, Animal Resources and Biosecurity
CPHL	Central Public Health Laboratory
DAR	Director of Animal Resources
DENV	Director Environment
DGHS	Director General for Health Services
DHO	District Health Officer
DLFP	District Laboratory Focal Person
DLG	District Local Government
DSFP	District Surveillance Focal Person
DOHT	District One-Health Teams
DVO	District Veterinary Officer
ECTAD	Emergency Centre for Transboundary Animal Diseases
EDUWA	Executive Director Uganda Wildlife Authority
EH	Assistant District Health Officer
EMA-i	Event Mobile Application
ERC	Emergency Risk Communications
EVD	Ebola Virus Disease
FAO	Food and Agriculture Organization of the United Nations
FHI360	Family Health International 360
FMD	Foot-and-Mouth Disease
GEMP	Good Emergency Management Practice
GHSA	Global Health Security Agenda
GPS	Geographical Positioning System
HF _s	Health Facilities
HMIS	Health Management Information System
HPAI	Highly Pathogenic Avian Influenza
IDI	Infectious Diseases Institute
IDPs	Internally Displaced Persons
IDSR	Integrated Disease Surveillance and Response
IGAD	Intergovernmental Authority for Development
IHR	International Health Regulations
JEE	Joint External Evaluation
KAP	Knowledge, Attitudes and Practices
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries

Mak	Makerere University
MakSPH	Makerere University School of Public Health
MCM	Multi-sectoral Coordination Mechanism
MOH	Ministry of Health
MSF	Doctors without Borders
mTRAC	Mobile Phone Tracking Health Information System
MWE	Ministry of Water and Environment
NADDEC	National Animal Disease Diagnostics and Epidemiology Centre
NALIRRI	National Livestock Resources Research Institute
NAPHS	National Action Plan for Health Security
NARO	National Agricultural Research Organization
NGO	Non-Governmental Organization
NOHP	National One Health Platform
NOHRCS	National One Health Risk Communication Strategy
NTF	National Task Force
ODK	Open Data Kit
OH	One Health
OH-APP	One Health Assessment for Planning and Performance
OHCEA	One Health East and Central Africa
OHCO	One Health Coordination Office
OHTWG	One Health Technical Working Group
WOAH (OIE)	World Organization for Animal Health
PDS	Participatory Disease Search
PE	Participatory Epidemiology
PHEOC	Public Health Emergency Operations Centre
PHFP	Public Health Fellowship Program
PPE	Personal Protection Equipment
PZD	Priority Zoonotic Disease
RDC	Resident District Commissioner
RVF	Rift Valley Fever
SET	Surveillance Evaluation Tool
SitRep	Situational Report
SMART	Spatial Monitoring and Reporting Tool
SOP	Standard Operation Procedure
UMA	Uganda Medical Association
UNMA	Uganda National Meteorology Agency
UPDF	Uganda Peoples Defense Force
UPF	Uganda Police Force
URCS	Uganda Red Cross Society
USA	United States of America



USAID	United States Agency for International Development
UTCC	Uganda Trypanosomiasis Control Council
UVA	Uganda Veterinary Association
UVRI	Uganda Virus Research Institute
UWA	Uganda Wildlife Authority
VHF	Viral Hemorrhagic Fever
VHT	Village Health Team
VPH	Veterinary Public Health
WB	World Bank
WHO	World Health Organization
ZDCO	Zoonotic Diseases Coordination Office

Foreword

The One Health approach is an innovative and collaborative mechanism to promote multi-sectoral and interdisciplinary application of knowledge and skills of medical, public health, veterinary and environmental experts working together to address animal, human and environmental health challenges. The health of humans depends on the health of animals and environment hence “One Health Approach”. This approach is officially recognised by World Health Organisation (WHO), Food and Agriculture Organisation of the United Nations (FAO) and World Organisation for Animal Health (WOAH) to address emerging and re-emerging zoonotic disease threats and other public health issues like antimicrobial resistance, food safety, environment contaminants, radiations and chemical threats. Uganda formalised One Health Approach after endorsing the One Health Framework in March 2016. This led to the formation of the National One Health Platform coordinated by the Ministry of Health (MOH), Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), Ministry of Water and Environment (MWE) and the Uganda Wildlife Authority (UWA). The National One Health Platform leadership rotates annually among the four sectors. A number of achievements have so far been realised, including: the establishment of One Health Coordination Office (formerly Zoonotic Disease Coordination Office), formulating the One Health Strategic Plan 2018-2022, nominating sectoral Focal persons to the OHCO, responding to major disease outbreaks (including Rift Valley Fever, Ebola Virus Disease, Anthrax and Crimean Congo Hemorrhagic Fever, among others). The country selected priority zoonotic diseases in March 2017 and undertook the first joint External Evaluation (JEE) of International Health Regulations core competencies in June 2017. The JEE tool assessed 19 technical areas including prevention and reduction of the likelihood of outbreaks or other public health hazards and events defined by IHR (2005).

The development of this National One Health Training Manual is in line with JEE 2017 recommendations to fill the significant inter-sectoral capacity gaps that existed in areas of preparedness, real time surveillance and emergency response, among others. It is yet another step to institutionalise, decentralise and fast track One Health skills to key stakeholders in Uganda. We urge all the members of the National One Health Platform to embrace this manual to raise the necessary workforce that is responsible to One Health challenges.



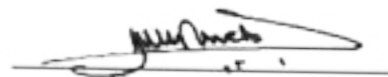
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All the best,



Antonio Querido

FAO Country Representative, Uganda

Session I: Course Lay Out

1.1 Background

This manual was prepared to support the National One Health Platform to train cadres of personnel who can apply multi-sectoral approach to effectively support prevention of emergence of new zoonotic diseases, early detection of threats and rapidly respond to and control public health events targeting geographic areas where the risks of spill over, amplification and spread are greatest.

1.2 Target Audience

The target audience for this manual is primarily frontline One Health field staff at national and sub-national levels. They include, but not limited to: Veterinarians, Medical/Public Health Workers, Environmentalists, Social Scientists, Anthropologists, Zoologists, Local Government (including political leaders), Community Health Workers, Security Agencies (Uganda Peoples Defense Force, Uganda Police Force and Uganda Prisons) and Ministry of Security, Laboratory Technologists, Specimen Transporters (Hub Riders), Epidemiologists and Biostatisticians.

1.3 Purpose

This manual provides a structured approach to offer tailored training to equip frontline One Health teams with skills and knowledge required to rapidly detect, prevent and respond to zoonoses and other public health concerns. It is useful for both tutors and learners.

1.4 Duration, sessions and learning outcomes

The training is for five consecutive days, covering 34-40 contact hours and it is divided into six integrated sessions, Table 2. The generic training time table is given in Annex I. Trainers are expected to prepare own presentation as per current trends.

Table 2. Course sessions, time allocation and learning outcomes

Session	Approximate time allocated	Learning outcomes
Session 1: Introduction to One Health approach and concept	2 hours	At the end of this session, trainees will: Define One Health approach, evolution of the One Health (OH) approach, OH basic competencies, key actors and drivers of OH and policy frameworks for OH in Uganda
Session 2: General Principles of Surveillance	6 hours	At the end of this session, trainees will learn: epidemiological triad, One Health triad, types of surveillance, standard

		Operations Procedures (SOPs) for investigating and responding to priority zoonoses in Uganda, biosecurity and biosafety measures
Session 2: General Principles of Surveillance	8 hours	At the end of this session, trainees will know: how to investigate and respond to an outbreak of zoonoses and other public health events as well as post outbreak actions
	6 hours	At the end of this session, trainees will know: what to report in event of an outbreak, types of reports, outbreak investigation reporting format, reporting channels, collaboration and data sharing, reporting tools, archival and publication procedures
Session 5: Effective Communication	8 hours	At the end of this session, trainees will know: the National One Health Platform, communications, challenges and opportunities for OH, risk communication, types of communication, the communication processes, channels of communication, how to identify a communication problem, elements of effective communication, community engagement approaches, lobbying and advocacy approaches
Session 6: One Health Leadership, Multi-sectoral Coordination and Sustainability	4 hours	At the end of this session, trainees will know: multi-sectoral coordination mechanisms, OH assessments, OH sustainability, ways of mobilizing resources, partners and networks for One Health (internationally, regionally and nationally)
TOTAL	34 hours	

1.5 One Health competences to be acquired

Trainees will acquire competencies in:

- Applications and concept of One Health approach
- Disease outbreak investigation, (detection response and prevention)
- Effective communication and coordination
- Conducting surveillance
- Resource mobilization and community engagement

1.6 Training approach

The training will include:

- Didactic lectures
- Group discussions - case studies and case reports
- Take home assignments
- Table top simulations
- Peer experience sharing
- Field work

1.7 Materials for the training

The materials required for the training include:

- LCD projector
- Flip Charts
- Markers
- Manilla paper
- Case reports
- Notes books and pens
- Voice recorders
- GPS devices or smart phones
- Case studies

Generic templates for this course include daily attendance sheet (Annex X), pre-&post-training quiz (Annex XI), OH course evaluation (Annex XII) and certificate of completion (Annex XIII).

1.8 How to use this manual

This manual provides a structured synopsis of training course on One Health. Under each session, brief notes give the trainer or trainee a quick overview. The notes are brief and easy-to-read. They complement expanded handouts and other resources by the respective facilitators. Each facilitator will provide the required cases studies and case reports for a given session. For each session, there are selected sources for additional reading. The facilitators should be experienced people well versed with public service delivery in the country.

The facilitators can include additional case studies

Session 11: Introduction to One Health Approach

2.1 Time allocated

- 2 hours (lectures)

2.2 Learning outcomes

At the end of this session, trainees will know:

- Evolution of the One Health (OH) Approach
- Key actors and drivers of OH
- Policy frameworks of OH in Uganda

2.3 Materials for further reading

- National One Health Framework
- National One Health Strategic Plan
- JEE Tool (JEE, 2016)
- JEE Report for Uganda (JEE 2017)
- Zoonotic Disease Prioritization Report for Uganda (CDC, 2017)
- The role of environmental health in OH (Musoke et al., 2016)
- One Health Operational Framework (WB, 2018)
- Evolution of the One Health (OH) Approach (Gibbs, 2014)

2.4 Session notes

2.4.1 Background

The One Health approach is an innovative strategy to promote multi-sectorial and interdisciplinary application of knowledge and skills of medical, public health, veterinary and environmental experts working together in order to effectively address animal, human and environmental challenges for instance emerging and re-emerging diseases. Worldwide, studies have shown that 60 percent of emerging and re-emerging infectious diseases are zoonotic and 71 percent of these originate from wildlife. In particular, Uganda is one of the “hot spots” for these emerging and re-emerging infectious diseases based on the Uganda OH frame work, 2016. To address these challenges, Uganda made great strides between the 1980s and 1990s to mainstream the One Health approach in the management of zoonotic diseases. One of the early initiatives was the establishment of a Veterinary Public Health (VPH) division within the MOH with a mandate of strengthening the prevention and control of zoonotic diseases.

The second initiative was the establishment of Uganda Trypanosomiasis Control Council (UTCC), the Technical Committee and the Coordinating Office for Control of Trypanosomiasis in Uganda (COCTU) to coordinate all efforts of MAAIF, MOH, district local governments, research institutions and partners towards tsetse fly and trypanosomiasis research and control in Uganda.

Despite these initiatives, Uganda has experienced a series of zoonotic disease outbreaks since 2000. They include Ebola virus disease, Marburg hemorrhagic fever, yellow fever, Crimean Congo hemorrhagic fever (CCHF), anthrax, swine influenza and rift valley fever (RVF).

These diseases are responsible for significant morbidity and mortality in humans, domestic animals and wildlife in addition to causing direct and indirect economic losses to the country. Adverse climatic changes including erratic weather patterns and human action related environmental disturbances have favored faster multiplication of infectious organisms leading to the emergence and re-emergence of diseases, compounded by the irrational use of antimicrobial agents leading to antimicrobial resistance.

The different sectors could not effectively control the zoonotic disease outbreaks in isolation nor put an end to public health threats. With introduction of One Health Approach, different sectors endorsed the creation of National One Health Platform (NOHP) in 2016 to enhance coordination, multi-sectoral preparedness and response. In 2017, the NOHP prioritized seven zoonotic diseases categories for coordinated control. They include anthrax, zoonotic influenza, hemorrhagic fevers (Ebola virus disease, RVF, Marburg and CCHF), Brucellosis, African trypanosomiasis, plague and rabies.

Crimean Congo hemorrhagic fever (CCHF), anthrax, swine influenza and rift valley fever (RVF). These diseases are responsible for significant morbidity and mortality in humans, domestic animals and wildlife in addition to causing direct and indirect economic losses to the country. Adverse climatic changes including erratic weather patterns and human action related environmental disturbances have favored faster multiplication of infectious organisms leading to the emergence and re-emergence of diseases, compounded by the irrational use of antimicrobial agents leading to antimicrobial resistance.

2.4.2 The National One Health Platform

The National One Health Platform (NOHP) spearheads OH operations of the key sectors involved in the implementation of One Health approach:

- Ministry of Health (MOH),
- Ministry of Agriculture, Animal Industry and Fisheries (MAAIF),
- Uganda Wildlife Authority (UWA),
- Ministry of Water and Environment (MWE).

In March 2016, MOH, MAAF, MWE, and UWA signed a Memorandum of Understanding (MOU, 2016), to work closely with other stakeholders including Makerere University College of Veterinary Medicine, Animal Resources and Biosecurity (MakCOVAB), School of Public Health (MakSPH) Security agencies (UPDF, UPF), other professional bodies like Uganda Veterinary Association (UVA), Uganda Medical Association (UMA,). Partners supporting One Health approach include, among others: Food and Agriculture Organisation of the United Nations (FAO), United States Agency for International Development (USAID), World Organization for Animal Health (WOAH), Intergovernmental Authority for Development (IGAD), World Health Organization (WHO), World Bank, Uganda Red Cross Society (URCS), Family Health International 360 (FHI360), preparedness and response (P&R), One Health Central and Eastern Africa (OHCEA) and Doctors Without Border (MSF).

Session iii: General Principles Of Surveillance

3.1 Time allocated

- 6 hours (lectures)

3.2 Learning outcomes

At the end of this session, trainees will know:

- What is surveillance
- Types of diseases or undesirable epidemiological conditions (contagion, communicable diseases, antimicrobial resistance, chemical poisoning, radiation)
- Epidemiological concepts (epidemiological triad, one health triad)
- National Surveillance System (central level, district level, community level)
- Types of surveillance and surveillance systems (risk based, targeted, active, passive)
- Surveillance approaches (interviews, questionnaires, participatory disease search/ participatory epidemiology, laboratory based, Syndromic surveillance)
- Surveillance study designs and sample size determination (cross-sectional, longitudinal, cohort, case control, sentinel)
- Standard operations procedures (sops) for investigating and responding to priority zoonoses in Uganda
- General biosecurity and biosafety measures
- Attributes of a good surveillance system
- National surveillance system
- Surveillance system evaluation
- Joint external evaluation

3.3 Materials for further reading

- MOH, 2012. IDSR Technical Guidelines
- MAAIF unpublished a, b, c & d. Surveillance and control plans for priority zoonoses (HPAI, brucellosis, rabies and anthrax) in Uganda)
- Cameron A.R., 2009. Risk-based surveillance Manual.
- AU-IBAR, 2012. Manual of Basic Animal Disease Surveillance.
- FAO. 2014. Risk-based disease surveillance Manual
- FAO. 2019. Evaluation for action
- JEE Report for Uganda, 2017

- Hannah and Jost, 2011
- Plamer et al., 2011

3.4 Session notes

3.4.1 Epidemiological triad

This is the interaction between the host, agent and the environment in determining disease causation as illustrated in Figure 1.

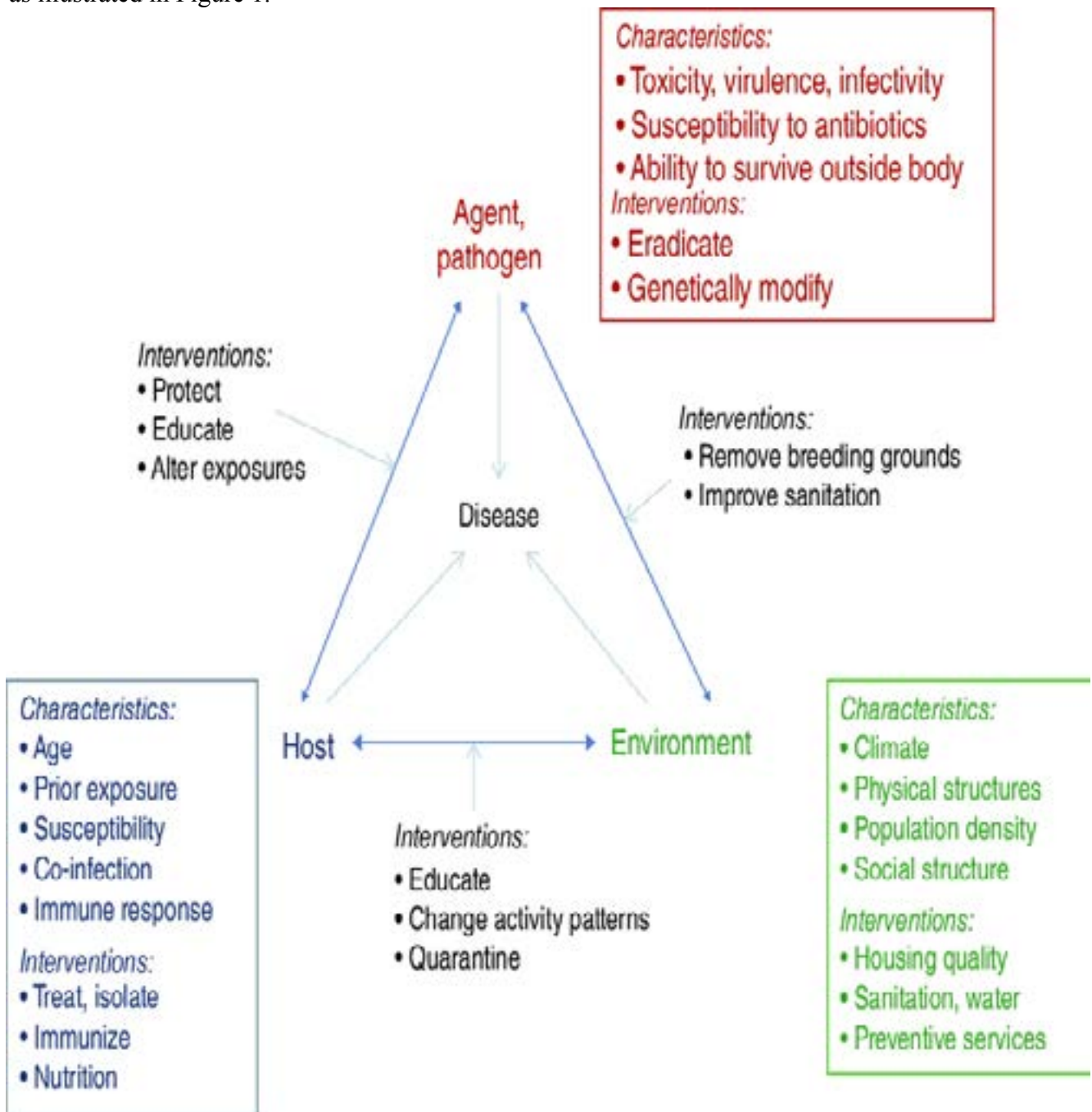


Figure 1. Epidemiological triad

Source: http://www.med.uottawa.ca/data/Infectious_Diseases_e.htm

3.4.2 One Health Triad



Figure 2 illustration on the One Health triad

Source: <http://www.phac-aspc.gc.ca/owoh-umus/index-eng.php>

3.4.3 Surveillance

Surveillance is the continuous, systematic collection, collation, analysis, and interpretation of health and environmental data for action. Surveillance approaches can be either passive or active.

3.4.4 Passive surveillance

Surveillance data is collected and submitted by farmers, veterinarians, environmentalists, agro-input dealers, inspectors, product outlets, researchers, educationists, animal husbandry officers, laboratory personnel and public health care workers to the district and to national level, e.g., using weekly epidemiological reports, health management information system (HMIS) monthly reports and monthly animal disease summaries.

3.4.5 Active surveillance

It involves purposeful and comprehensive searching for evidence of disease in populations or for verification that such populations are free of specific diseases. Active disease surveillance programs may be of a catchall nature to detect any significant disease occurrences, targeted against specific high-threat diseases or designed to monitor the progress of individual disease control or eradication campaigns.

The components of a successful active disease surveillance programs are:

- Close integration of field and laboratory activities
- Regular visits to communities to interview about diseases, provision of health advice and examination of livestock and people.

- Collection of diagnostic specimens (like serum, swabs and feces).
- Gathering auxiliary data during field surveys to support prioritization and decision-making on health programs, e.g., livestock production systems, socio-economic and demographic data.
- Periodic targeted surveys in animal and human populations. To detect the spread of infection or to prove freedom from infection. Surveys need careful design to yield statistically valid information on disease status.

Movement of infected animals or people frequently spreads epidemic diseases hence active disease surveillance must consider the associated movements and contacts. This includes livestock markets, abattoirs, livestock trading routes, border areas or ports of entry and situations such as nomadism, transhumance internally displaced persons (IDPs) camps and refugee movements from wars and civil strife.

3.4.6 Laboratory procedures

This includes a set of standard operating procedures (SOPs) for sample collection, transportation, reception, storage and testing for priority zoonotic diseases in case of an outbreak or during routine surveillance.

3.4.7 Biosecurity and biosafety

Biosecurity refers to measures designed and implemented to prevent unauthorized access to, misuse of or intentional release of biological materials, whereas biosafety refers to the working practices and structural characteristics that prevent unintentional release or exposure to pathogens.

Key biosecurity measures include:

- Creation of barriers to limit access to biological materials
- Disinfection baths at points of entry and exit
- Strengthening surveillance at the border points, e.g., for animals entering the country and immigrants
- Human and animal movement control
- Training of Veterinary, Environmental and Medical Health workers
- Community sensitization and awareness creation

Key biosafety measures include:

- Proper use of personal protection equipment (PPE) or other equipment
- Training of Veterinary, Environmental and Medical Health workers
- Strengthening inspection at entry points to the country in order to fight bio-terrorism
- Availability of biosecurity facilities – well-designed laboratories, waste bins and incinerators
- Availability of isolation and quarantine facilities
- Enforcing standard operating procedures

3.5 Participatory Disease Search/Participatory Epidemiology

Participatory Epidemiology (PE) involves application of participatory approaches and methods to improve our understanding of the patterns of diseases in populations. The PE approaches and methods derive from participatory appraisal. It involves communities in defining and prioritizing veterinary-related problems and in the development of solutions to service delivery, disease control or surveillance. Participatory approaches include an array of methods that enable people to present, share and analyze their knowledge of life and conditions, to plan and to act. It is participatory, flexible, lightly structured, adaptable, exploratory, empowering and inventive. Types of participatory appraisal include rapid rural appraisal, participatory rural appraisal (PRA), farming systems research and participatory impact assessment. Participatory Disease Search (PDS) involves application of PE and participatory approaches to disease surveillance. PDS is a method of disease surveillance that applies PA approaches and methods while combining local veterinary knowledge with conventional methods to establish the presence or absence of a specific disease in a particular area.

PE provides opportunities to understanding the disease based on community knowledge. Most pastoralists and farmers accumulated a wealth of skills and knowledge relating to animal diseases. It is possible to derive current, past or future epidemiological information to support decision-making, most especially where conventional approaches are limited. Generated data can augment clinical and laboratory data in disease control programs.

PDS is highly sensitive, allowing the detection of hard-to-find disease foci. This level of sensitivity has to be linked to a laboratory case definition, which increases the specificity of the overall case-finding methodology. It is integral to regular surveillance under the National Veterinary Surveillance System. A flexible and qualitative approach allows for discovery. It allows practitioners to solve problems. It complements structured qualitative methods. Approaches include interviews, visualization, scoring and raking. In most cases, the results are compared across methods (triangulation) to derive the desired conclusions. Interviews include active participation, listening and learning in a relaxed and reflective environment.

Participatory Disease search/Epidemiology Techniques

1. Interviews, based on checklist

- Community interviews
- Key informant interviews
- Focus group discussions
- Semi-structured interviews

3.6 National Surveillance System

National Surveillance System defines the steps and processes through which required health data is generated, transmitted, quality assured, analyzed and stored to facilitate decision-making. It involves grass root players in the field, intermediaries at the district and decision makers at Central Level. The National Surveillance System must meet the expected performance attributes (sensitivity, specificity, representativeness, rapidity, flexibility, reliability, stability, acceptability, simplicity and utility). An efficient surveillance system has to meet quality, reporting and operational standards based on periodic evaluations (FAO, 2019; MOH, 2012)

Assessment of sector specific national surveillance system includes, among other parameters:

- Institutional organization and legal framework at central, intermediary and field levels
- Timeliness and quality of laboratory analyses
- Surveillance activities and methodology
- Epidemiology workforce capacity and management, and epidemiological training
- Outbreak investigation mechanisms and resources
- Data management and analysis
- Communication and reporting of results to internal, local, multi-sectoral and international stakeholders
- Sensitivity, specificity, representativeness, rapidity, simplicity, flexibility, acceptability, data quality, stability, and utility of the surveillance system

3.7. Joint External Evaluation of International Health Regulation Core Capacities

For One Health Approach, assessment of the national surveillance system is based on JEE indicators as per IHR Regulations 2005 evaluation tool (JEE, 2016), examples:

D.2.1 – Indicators and event-based systems

D.2.2 – Interoperable, interconnected, electronic real-time reporting system

D.2.3 – Analysis of surveillance data

D.2.4 – Syndromic surveillance systems

D.4.1 – Availability of human resources to implement International Health Regulations (IHR) core capacity requirements

D.4.3 – Workforce strategy

P.4.1 – Surveillance systems in place for priority zoonotic diseases/pathogens

P.4.2 – Veterinary or animal health workforce

P.4.3 – Mechanisms for responding to infectious zoonoses

Joint External Evaluation for Uganda was conducted in Uganda in 2017 (JEE, 2017). This has been the basis for implementation of Global Health Security Agenda 2017 – 2020 to improve national competencies and scores along the 19 Technical areas/Action Packages (Annex II):

- National Legislation
- Policy and Financing
- IHR coordination
- Communication and Advocacy
- Antimicrobial Resistance
- Zoonotic Diseases
- Food Safety
- Biosafety and Biosecurity
- Immunization
- National Laboratory System
- Real-time Surveillance; Reporting
- Workforce Development
- Preparedness; Emergency Response
- Linking Public Health and Security Authorities
- Medical countermeasures and personnel deployment
- Risk Communication
- Points of Entry
- Chemical Events and
- Radiation Emergencies

4.0 Session IV Outbreak investigation and response

4.1 Time allocated

8 hours (4 hours lectures, 4 hours case studies/scenarios)



Learners conducting interviews during outbreak investigation in Ntoroko District (Photo credit: Ayebazibwe Chrisostom)

4.2 Learning outcomes

At the end of this session, trainees will know:

- Defining an outbreak (including antimicrobial resistance)
- List steps in outbreak investigation,
- How to develop and use case definition,
- Characterizing outbreaks (line listing, prevalence, incidence, epidemic curves, morbidity rate, mortality rate, attack rate, case fatality)
- Emergency Management Cycle (prepare, prevent, detect, respond, recover, plan)
- Post outbreak actions

4.3 Materials for further reading

- Anthrax outbreak investigation reports (following one health approach)
- <https://www.cdc.gov/globalhealth/healthprotection/fieldupdates/fall-2018/uganda-tackle-anthrax.html>
- CCHF investigation in districts of Nakaseke District. Balinandi et al, 2018.
- Prioritization of zoonoses. Sekamatte et al (2018).

4.4 Session notes

4.4.1 Phases of outbreak investigation and response

CDC, 2016, already published the phases of outbreak investigation (<https://www.cdc.gov/csels/dsepd/ss1978/lesson6/section2.html>). Detailed outbreak investigation steps:

1. Prepare for field work
2. Establish the existence of an outbreak
3. Verify the diagnosis
4. Construct a working case definition
5. Find cases systematically and record information
6. Perform descriptive epidemiology
7. Develop hypotheses
8. Evaluate hypotheses epidemiologically
9. As necessary, reconsider, refine, and re-evaluate hypotheses
10. Compare and reconcile with laboratory and/or environmental studies
11. Implement control and prevention measures
12. Initiate or maintain surveillance
13. Communicate findings

4.4.2 Introduction to Good Emergency Management Practices in Animal Health

The Good Emergency management practice (GEMP) manual is available for this session (FAO, 2011). It includes the following:

- Different phases of Emergency Disease Management
- Key elements of Preparedness Planning
- The management structure including roles and responsibilities of each command level
- Nature of a risk analysis and risk assessment approach
- Principles of infectious disease control

- Preparedness and contingency plans plus its components
- Requirements and challenges for verification of freedom of disease
- The role of veterinary services in recovery.

Cycle of good emergency management planning and disease control is one of the important core functions of national animal health services.

Prepare

Preparation is required for all the subsequent steps in the disease management cycle to be effective. It is necessary to:

- Establish a national disease emergency planning committee;
- Determine the command structure and responsibilities;
- Ensure that the required legal powers are in place;
- Ensure that sources of financing have been identified;
- Establish compensation policy; establish sourcing for any required vaccines and other critical supplies;
- Undertake risk analysis to identify and prioritize potential disease risks;
- Prepare, practice and refine contingency plans and operations manuals.

Prevent

- Prevent entry of the disease agent through additional, targeted restrictions on imports in accordance with accepted international standards
- Set import restrictions to allow low-risk trade to maximize effectiveness of the quarantine barrier
- Prevent entry of the disease through tightened and targeted inspections for legal and illegal imports.
- Implement increased biosecurity measures, including quarantine facilities for live animals (e.g., livestock, wildlife and mascots), particularly at locations identified as high risk (e.g., border areas, markets, livestock trading businesses).
- Consider establishing pre-embarkation and post-entry testing for diseases of concern.

Detect

- Raise disease awareness among staff, stakeholders and the general
- Public Intensify surveillance to ensure early detection of any incursion.
- Cooperate closely with neighboring administrations, exchanging information on any suspected or confirmed outbreaks, and fulfil international reporting obligations.

Respond

- Review contingency plans and make staff aware of their roles should the disease occur.
- Start to put initial structures in place for contingency plans.

Recover

Once a disease has been controlled or eliminated, the recovery process should begin.

This includes:

- Undertaking planned surveillance activities to demonstrate freedom;
- Sentinel restocking;
- Full restocking;
- Fully implementing compensation policies, if appropriate;
- Standing down the resources mobilized during the control/elimination phase;
- Conducting post-outbreak analysis to assess the pre-outbreak practices and issues that led to the outbreak and any problems encountered in detecting and responding to it; and
- Reviewing and revising legislation and plans to correct deficiencies, make risky practices safer and introduce new practices as required.

4.4.3 Case study on preparation of Standard Operating Procedure for Animal, Human or Environmental outbreak investigation

Group work, 2 hours

Participants break up into about five groups of 5 – 8 persons and each group is assigned specific outbreak scenario (Annex VIII) to develop an SOP for outbreak investigation in 1 hour. Answer any other questions assigned. Be prepared to present to the plenary session, 10-15 minutes each group.

4.4.4 Post outbreak action review

Group after action review, 2 hours

After-action review follows at least 30 days after the outbreak is contained. In the same groups as in 4.4.3 above and using the same case studies, study what happened, search as much information as possible and then review the following aspects:

- What went well
- What went wrong
- Lessons learnt
- Challenges
- Recommendations
- Outbreak documentation

Be prepared to present to the plenary in 1 hour.

Session V. Disease Documentation And Reporting

5.1 Time allocated

- 6 hours (2 hours lectures & 4 hours field/group work)

5.2 Learning Outcomes

At the end of this session, trainees will know:8

- What to report in the event of an outbreak
- Types of reports (electronic, hard copy, monthly reporting, real time reporting, zero reporting)
- Outbreak investigation reporting format
- Reporting channels
- Collaboration and data sharing
- Reporting tools
- Archival and publication procedures

5.3 Materials for further reading

- National One Health Communication Strategy (NOHP, 2019)
- Integrated disease surveillance and response manual (IDSR) (MOH, 2012)

5.4 Session notes

5.4.1 What to report in event of an outbreak

Outbreak alerts come from the community and go to the frontline workers, rumors or media. It is important to verify rumors through preliminary follow up with the people at the grassroots like the extension workers, community animal health workers, parish chiefs or local area leaders. Preliminary information about the outbreak in a particular Sub County is sent to districts from where it is relayed to the competent authority at central level. This can be Commissioner for Disease control for human health within the MOH or Commissioner Animal Health (Chief Veterinary Officer) within MAAIF. Sector heads are responsible for sharing information with the National One Health Platform to trigger arrangements for coordinated outbreak investigation following a One Health approach. This system is still taking root but over time, it is evident that no resource allocation yet by different sectors to cater for coordinated outbreak investigation, disease reporting and control. The One Health coordination office (formerly zoonotic disease coordination office) is responsible for running operations of the NOHP but it is ran on a temporary basis (housed in the MOH) without resources to sustain operations. Policy on the functions and operations of the NOHP will determine full institutionalization of OH in Uganda. Different partners are currently working on strengthening OH at national level and decentralizing its actions through the District One Health Task Force or District OH Teams (Annex III). The District Surveillance Focal Person (DSFP), District Laboratory Focal Persons (DLFP) and animal/environmental/human health personnel are responsible for submitting data on animals, ecosystem and human health as specified in duty schedules

or assigned. The outbreak report must indicate the numbers affected (dead, sick, at risk), species, history, clinical signs, locations infected, actions so far taken and the required support. Mobile phones have transformed the reporting abilities by allowing immediate verbal reporting or sharing of preliminary information through social media if the situation warrants urgency. Official reporting follows agreed institutional modalities but it is good to be aware that written and signed reports are more acceptable.

5.4.2 Types of reports

5.4.2.1 Case reports from field and health facilities

These should clearly highlight whether they are suspected, probable or confirmed cases in animals and humans. The details and contacts of the farm/or patient should be well listed to enable tracing of contacts. Case reports also contain laboratory results for each sample collected. An integrated OH surveillance form captures surveillance data across different sectors. Examples of surveillance forms are in Annex IV & VI. The data forms should clearly indicate the numbers and species affected in a given time period and the location/address. They document particulars of the affected species like sex, age and other relevant demographic information. It is important to document location to the lowest administrative unit and geo-reference coordinates for verification purposes. Preventive and control measures taken (quarantine, isolation or vaccination), the methods of control, or containment should be documented e.g. culling, rapid carcass disposal, vaccination or immunization and case management. Electronic disease reporting can link different surveillance tools if it allows interoperability:

- HMIS 033B Weekly surveillance reporting tool (HMIS 108 A, HMIS 105 A), Ministry of Health
- Event Mobile Application (EMA-I), Ministry of Agriculture Animal Industry and Fisheries
- mTRAC and IDSR tools, Ministry of Health
- SMART tool, Uganda Wildlife Authority

5.4.2.2 Situational report (SitRep)

It should be short and precise, highlighting key points and concerns that need urgent attention. It should contain:

- Epidemiological description of person/animal, place and time
- Numbers and species affected in a given time period and the location/address (geo-coordinates).
- Preventive and control measures taken like quarantine, isolation, vaccination; number slaughtered (illegal/legal) /number culled/number died and case management.
- Descriptive indices: number affected, dead and at risk.
- Resources required (human capital, and logistics) to manage the ground situation.

5.4.2.3 Laboratory report

The laboratory report indicates samples collected and results received. It provides details on the patient biodata, name of personnel who collected sample, the date of collection, area where collected, GPS coordinates, the type of the sample, the method of collection, the packaging requirements, storage conditions, and method transportation and the destination.

5.4.2.4 Outbreak investigation report

An official outbreak file is initiated once the outbreak starts, and must be signed off at outbreak closure after the full investigation report. A clear outbreak report circumvents any legal and ethical disputes that may arise. Reports vary with organizations and circumstances but there is a generic report outline (Annex IX). A report is a record of performance or can act as a reference document if the department encounters a similar situation in the future or literature source if published in the main domain, to contribute to the knowledge base of epidemiology and public health. It is necessary to brief the local authorities on the case on the preliminary findings and preliminary measures as the final report awaits. If the field investigator is not responsible for disease control, the local health authorities and persons responsible for control and prevention measures should attend the oral outbreak investigation briefing.

5.4.3 Reporting hierarchy

It is important to follow the reporting hierarchy and protocols of each institution of government. The One Health Framework and the National One Health Information Exchange Protocol were developed to aid data sharing mechanisms for the NOHP

5.4.4 When to report

- Emergency or immediate notification (event-based surveillance)
- Weekly – routine surveillance (Appendix XI).
- Monthly - surveillance report
- Quarterly- surveillance bulletin

5.4.4 How to report

- Electronic and paper-based backup
- Text messages/ alert message
- E-mail
- Paper format
- Detailed report for the commissioner animal health and DGHS

5.4.5 Reporting tools

Various reporting tools exist within the One Health stakeholders. They include:

- Outbreak investigation report (see generic outline in Annex IX)
- Case report forms (Annex V)
- Animal Health specific mobile phone-based tools; Open Data Kit (ODK), EMA-i
- Surveillance form/ Disease reporting form (Annexes IV, VII)
- ARIS-2
- SMART (Spatial Monitoring and Reporting Tool for UWA)
- Environmental reporting tools
- Health specific mobile phone-based tools (like eIDSR, mTRAC)

5.4.6 Archival and publication

Documents are key for institutional growth and memory hence the need to maintain a culture of publication and archival. Data of the NOHP includes different sectors coordinated under the OHCO. Data centers include:

- MAAIF, NADDEC, DVO, UWA, MWE, COVAB, UVRI
- MOH-Resource Centre
- MakSPH
- Uganda National Health Laboratory Services (UNHLS)
- Regional Veterinary and Health Laboratories
- National and Regional Water Laboratories
- Government Chemist
- Uganda National Meteorology Agency (UNMS)
- Districts laboratories

Improved animal disease control requires analysis of field and laboratory data and eventual presentation of key results in institutional, national, regional and international meetings, symposia, seminars and conferences. Publication is one way to disseminate outbreak investigation results to a wider community. Policy and research briefs should be prepared and transmitted to line ministries (MAAIF/MOH/MWE), research and training institutions for their action.

5.4.7 Fieldwork on outbreak investigation

(2 hours Fieldwork, 1-hour preparation and 1 hour presentation)

Field exercise

In coordination with area field technical officer (Veterinary, Wildlife, Human or Environment) and local authorities, arrange separate field visits to 4 – 5 sites in groups of 5-8 persons each. This should be close to the training facility (not more than 10 Kms). If necessary, arrange shared transport to drop and pick the participants bearing in mind the training objectives, course expenses, safety of participants and timelines required to return to the base to complete the presentations. Apply PDS/PE Methodology to investigate common diseases affecting the area. Select one most recent or current priority zoonotic disease and investigate it in detail. Assume the real situation (including preliminary sample and data collection if necessary/possible) but emphasis should be on PDS/PE methodologies. Apply the necessary biosafety and biosecurity measures. Due to time limitation, it is advisable to leave follow-up activities (to complete or confirm the outbreak) to the officer in charge. Rehearse field arrangements beforehand to avoid mistakes, omissions and accidents. Make and submit a detailed disease investigation report following OH approach (hard or soft copy). Discuss your group findings in the plenary (PowerPoint presentation) highlighting challenges and opportunities for One Health Approach in that District.

Session vi: Effective communication

6.1 Time allocated

- 8 hours (5 hours lectures, & 3 hours Case studies)

6.2 Learning outcomes

At the end of this session, trainees will know:

- The organizational communications of the National One Health Platform
- Challenges and opportunities for One Health in Uganda
- One health information flow and data sharing mechanisms
- Risk Communication
- Types of communication
- The communication processes
- Channels of communication
- How to identify a communication problem
- Elements of effective communication
- Community engagement approaches
- Lobbying and advocacy approaches

6.3. Materials for further reading

- Uganda One Health Strategic Plan 2018 – 2022 (NOHP, 2018)
- The National One Health Risk Communication Strategy 2019
- Memorandum of understanding for the operationalization of One Health Framework in Uganda
- One Health Information Exchange Protocol (unpublished)
- WHO Guidelines on Emergency Risk Communication,
- One Health Training Manual (Killewa and Mdegela, 2018)
- One Health Communication Strategy, 2018
- Designing risk communication strategy (O’Sullivan, 2003)

6.4 Session notes

6.4.1 One Health Organizational Arrangements in Uganda

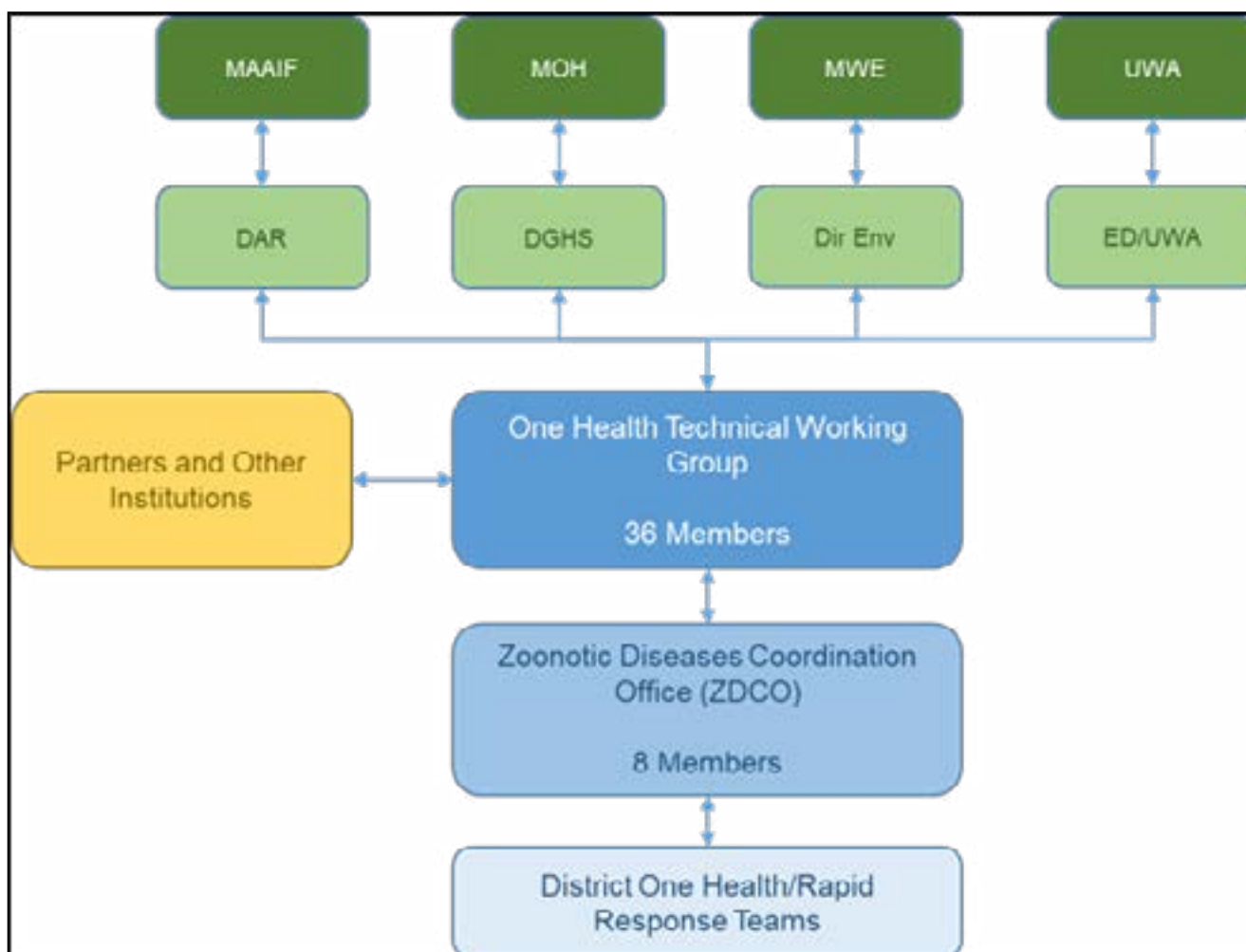


Figure 3. One Health Organizational Structure in Uganda

Source: One Health Framework, 2016

One Health Approach was formalized in Uganda following the endorsement of One Health Framework in March 2016. It includes four sectors involved in the implementation of OH including MAAIF, MOH, UWA and MWE (Figure 3). Activities of the National One Health Platform technically managed by the National One Health Technical Working Group (36 members from key government sectors and other partners like FAO, WHO, CDC, USAID and training institutions). One Health Coordination Office, previously called the Zoonotic Disease Coordination Office (ZDCO), routinely manages activities of the NOHP. The thrust of activities is at the district level, coordinated by the District One Health Teams or District Rapid Response Teams (Annex III). As of 2020, Uganda is composed of 135 Districts. The partners support most activities of the NOHP but the government has developed key instruments to operationalize One Health Approach, including:

- The list of priority zoonotic diseases
- Uganda One Health Strategic Plan 2018 - 2022
- The National One Health Risk Communication Strategy 2019
- Memorandum of understanding for the operationalization of One Health Framework in Uganda
- One Health Information Exchange Protocol (unpublished)
- One Health Training Manual (unpublished)

Figure 4. One Health collaboration and data sharing in Uganda

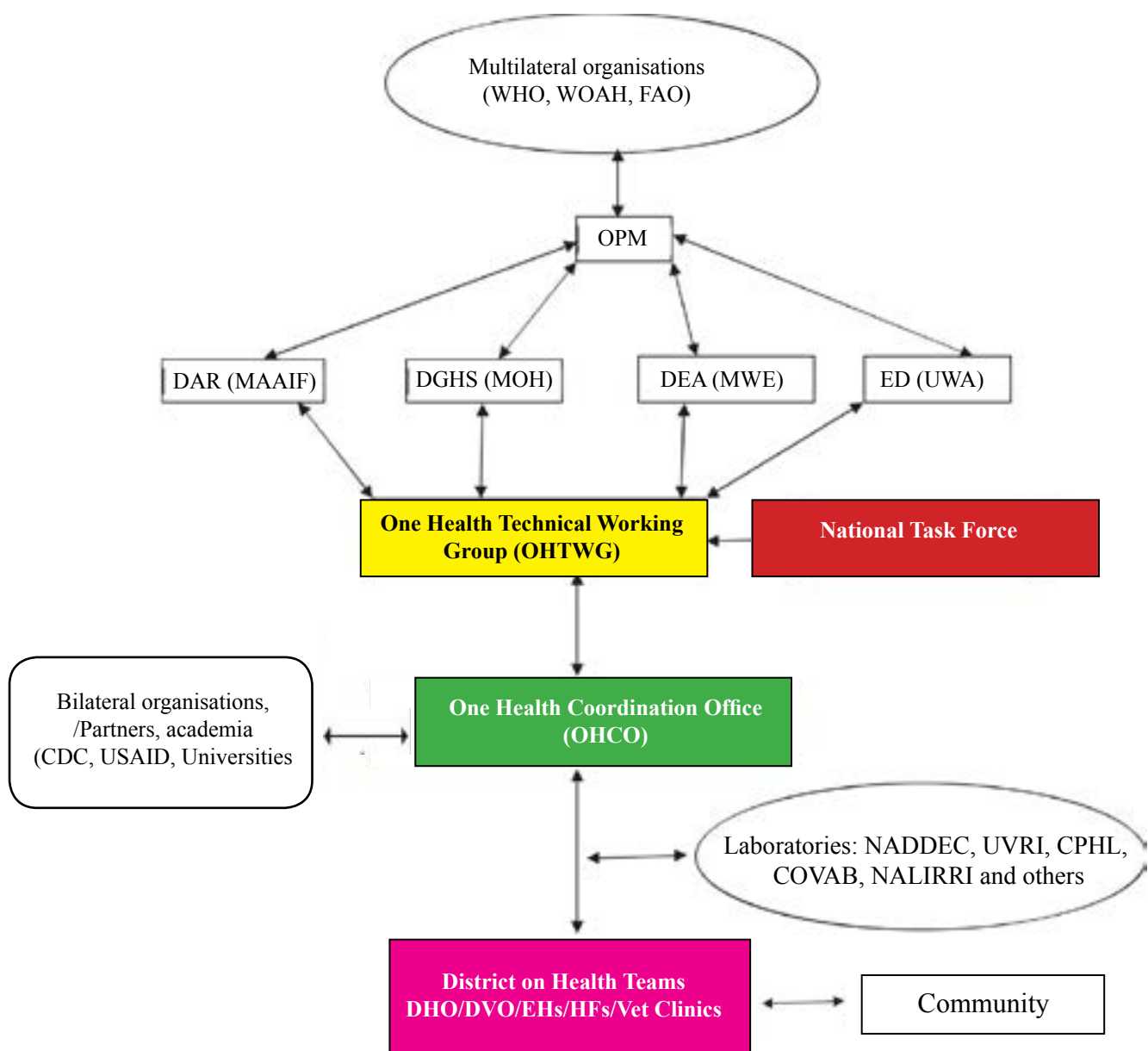


Fig 4: Data sharing frame work

6.4.2 Collaboration and data sharing

The biggest challenge for one health institutionalization in Uganda has been lack of overarching policy framework to support full institutionalization. Most stakeholders, including technical personnel who have not yet fully internalized the One Health Approach hence the need for continuous sensitization, education and engagement. Proper communication is key for the successful implementation of One Health in Uganda and this requires proper understanding of the hierarchy. The National Task Force (NTF), One Health Coordination Office (OHCO) and the Public Health Emergency Operations Centre (PHEOC) are important in coordinating response to public health threats. The NTF coordinates emergency public health response and is chaired by the Director General of Health Services (DGHS) and co-chaired by Director Animal Resources in the Ministry of Agriculture, Animal Industry and Fisheries. It is responsible for coordination of government, development partners and other relevant stakeholders who may wish to get involved in the response activities. The NTF works through technical sub-committees to carry out the day-to-day duties of emergency preparedness and response based on their terms of reference. The Public Health Emergency Operations Centre (PHEOC) under MoH is responsible for coordinating information and resources (human and physical), organizing, conducting and managing all aspects of public health emergency response efforts of the country. Whenever the need arises, the PHEOC activation is by the Director General Health Services and the level of activation depends on the gravity and magnitude of the public health event.

6.4.3 Risk Communication

Risk communication is the real-time exchange of information, advice and opinions between experts, community leaders, or officials and the people who are at risk. The International Health Regulations (2005) are an international law that entered into force on 15 June 2007, binding 194 countries, but later revised in response to emerging highly pathogenic diseases. The increased mobility of populations and their interconnectedness ensure that previously localized public health events now have the potential to turn into global epidemics. This makes the IHR (2005) central to ensuring global public health security.

Under the IHR (2005), risk communication is one of the core capacities essential in the early detection and rapid response to emerging infectious disease outbreaks. It is possible to mitigate adverse impacts due to health emergencies through effective risk communications. The public and healthcare workers need prompt communication on risks in any effort to manage threats to global health security. Risk communications is integrated with every aspect of public health systems. It is an interactive process of exchange of information and opinion on risk among risk assessors, risk managers, and other interested parties. Uganda has a National One Health Risk Communication Strategy (NOHRCS) to support behavior change and awareness efforts at the community level as part of disease preparedness, response, and control. The NOHRCS is complementary to the National One Health Strategic Plan (2018-2022) in addressing zoonotic diseases, antimicrobial resistance and bio-security threats.

During public health emergencies, people need to know what health risks they face, and what actions they can take to protect their health and lives (WHO, 2017). Accurate information provided early, often, and in languages and channels that people understand, trust and use, enables individuals to make choices and take actions to protect themselves, their families and communities from threatening health hazards. During epidemics and pandemics, and humanitarian crises and

natural disasters, effective risk communication allows people most at risk to understand and adopt protective behaviors. It allows authorities and experts to listen to and address people's concerns and needs so that the advice they provide is relevant, trusted and acceptable. World Health Organization recommended the following Emergency Risk Communication Guidelines (WHO, 2017)

- Building trust - transparent, timely, easy to understand, acknowledge uncertainty, address affected populations, link to self-efficacy and dissemination using multiple platforms, methods and channels.
- Communicating uncertainty
- Emergency risk communication as a strategic role at national or global level
- Coordination and information systems – tailored to needs of users and guaranteeing flow across sectors
- Engaging communities – build relations with whom the community trusts and work with them to own the process
- Building capacities – regularly training staff in ERC
- Sustained funding mechanisms for ERC
- Consistent and specific action messaging to protect health
- Best practices in planning and instituting effective communications across networks
- Use of both traditional and social media to transmit verified and accurate information
- Strategic emergency risk communication sensitive to stakeholders needs, participatory, responsive to the context and incorporating feedback from affected groups
- Monitoring, evaluating and adjusting current or future interventions

6.4.4. Principles of effective communications

Communication is the two-way exchange of opinions, news, needs, desires, perceptions, knowledge, and information by writing, speech or gestures including body language and facial reactions between a sender and receiver. The goal of communication is to convey information and the understanding of that information from one person or group to another person or group. The survival and sustainability of one health approach is dependent on the ability to communicate effectively hence the need for the practitioners to acquire the necessary skills and experience.

Elements of effective communication include:

- Tailor the message to the purpose and audience
- Avoid jargons and technical terms
- Be clear and concise
- Ensure the correct writing and grammar
- Be accurate, balanced and impartial
- Spice the message using graphics, quotes, photos and real stories

6.4.5 Types of communication

There are four main types of communication: written, verbal, non-verbal and visual. Written communication includes e-mail, signs, letters, posters, magazines, books and anything else transcribed into typed or handwritten words. Verbal communication is auditory, while nonverbal communication is body language, gestures and pictures. Communication types complement each other.

6.4.6 Channels of communication

Communication channels include:

- Verbal channels, e.g radio, television, phones and personal.
- Written channels, e.g e-mails, letters, text messages, social media, flyers and banners.

The choice of an appropriate communication channel depends on the target audience, type of message, timing, content and outcome of the message.

6.4.7 Communication process

A model for communication process is as follows:

- A sender encodes information
- The sender selects a channel of communication by which to send the message
- The receiver receives the message
- The receiver decodes the message
- The receiver provides feedback to the sender which should be documented

6.4.8 Identification of a communication problem

When there is a gap in knowledge, attitude or practice between the current situation and the desired behavior, then there is a communication problem. The procedure for identifying a communication problem is as follows:

- Conduct a needs assessment (e.g review strategic plans, conduct surveys)
- Analyze data.
- Describe critical behaviors needed to affect problems/issues.
- Determine and clarify why critical behaviors do not currently exist.
- Include organizational drivers needed to reinforce the critical behaviors that will affect problems/issues.

6.5.0 Feedback mechanisms

A feedback mechanism is a process that uses the conditions of one component to regulate the function of the other. Negative feedback process seeks to counter the change and maintain equilibrium.

6.6.0 Community engagement and advocacy

Community engagement is a process of working in collaboration with communities to address issues that influence their well-being. It involves:

- Identifying social problems/rapid assessment for knowledge, attitudes and practices (KAP) or advocacy issue
- Identifying stakeholders/influencers/gatekeepers through stakeholder mapping and analysis.
- Forming partnerships
- Holding community dialogues

- Mobilizing resources
- Making resolutions:
- Define the communication problem – what do you want to address.
- Segment audience into: to know the target audience and secondary audience.
- Address knowledge levels, attitudes and practices of your key audience

Choose appropriate channel like:

- Interpersonal
 - Mass media
 - Modern technologies, e.g social media
- The approaches for community engagement include:
- Community dialogues – stakeholders and leaders x small groups meetings to pass on information
 - Community radios
 - Utilizing community activities like funerals, prayer meetings etc.
 - Film, mobile vans and Barraza's

6.7.0 Media engagement

Prepare and update information for the person that interface with the journalists for updates to journalists, press conferences, and official press briefs/updates. Communication continues at various stages of the outbreak. Consider local council engagement during detection and response. Map the areas very well and keep on the lookout for new signs and symptoms. Communities must know where to get more help in case of suspicion. Tailor the talking points for different priority diseases to fit the emergencies.

6.8.0 Group Exercise on One Health communications (2 hours group work and 1-hour presentation)

Rift Valley Fever Scenario: District Veterinary Officer Report on one confirmed fatal RVF case in a human being (see below)

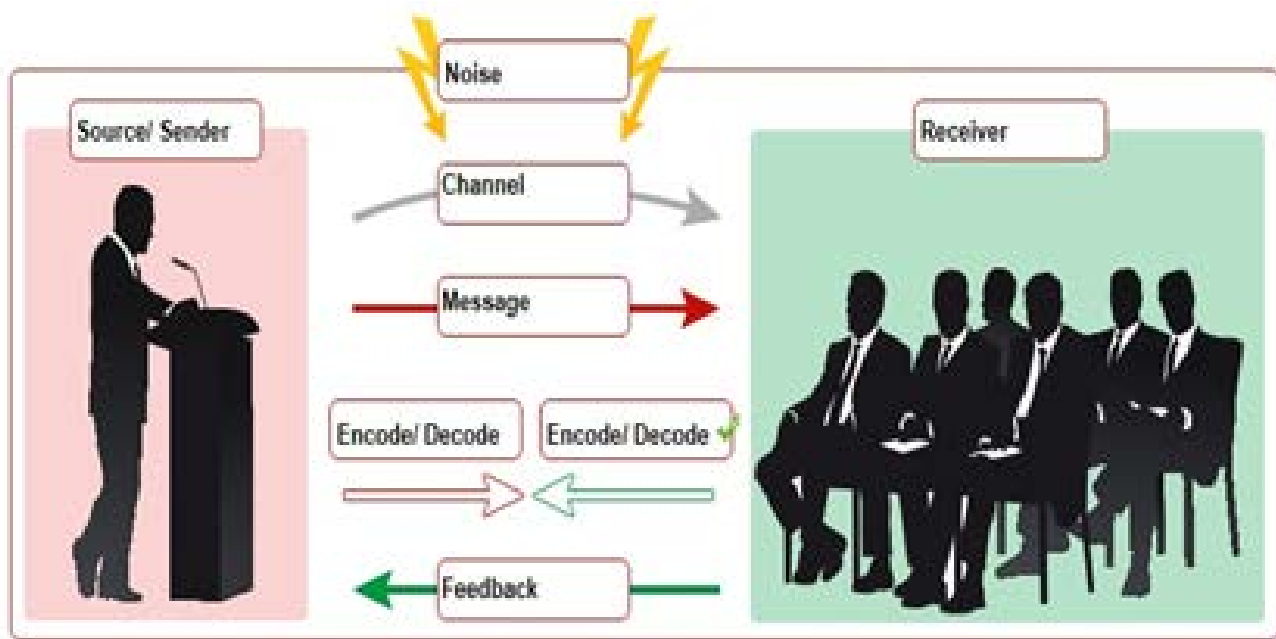


Figure 5. An illustration of an effective communication process

(Adapted from: Shannon & Weaver's model of communication)

An effective communication process includes the sender, channel and receiver (Figure 5)

You are the Commissioner Animal Health, MAAIF. On 9 December 2019, a report from the District Veterinary Officer, Ntoroko District, reaches your mailbox indicating that one person died and laboratory results from Uganda Virus Research Institute confirmed Rift Valley Fever. Samples were picked same day on 5 December 2019 after patient hospitalization but no information reached you. The DVO is aware that mosquitoes transmit RVF virus from animals to humans. It is also evident that RVF characteristic rains, floods and insect swarms dominated the last 2 months. Ntoroko District lies on the border with Democratic Republic of Congo where an outbreak of Ebola Viral Disease has been killing people within the vicinity (about 100 Km) for over 1 year but Uganda maintained freedom due to extensive vigilance. There is panic in the district and the country due to social media reports that this could be EVD. Within two hours and before any further information, you receive a phone call from the Food and Agriculture Organization of the United Nations (FAO) inquiring if you know about suspected EVD outbreak in Ntoroko District and if any, what the country has so far done, including animal health measures.

Read the report, in groups discuss, and make presentations

- (i) Critique the report indicating the strong and weak aspects of good communication
- (ii) Assess the effectiveness of One Health Communications and Collaboration at National Level
- (iii) Advise how to handle the request from the DVO bearing in mind that funds take over 1 week to be processed at MAAIF
- (iv) How would you handle risk communications at global, national, subnational and community levels, following social media reports, MAAIF being the current Chair of the NOHP
- (v) Advise on the short, medium term and long-term measures to undertake to avoid communication shortcomings
- (vi) Be prepared to present to the NOHP and make high level recommendations to members
- (vii) Highlight the institutional reporting mechanisms, key reference materials and personnel to contact.

NTOROKO DISTRICT LOCAL GOVERNMENT

9th December, 2019



The Commissioner,
Animal Health
Directorate of Animal Resources
P.O.BOX 513,
Entebbe

Office of the District Production Officer
Ntoroko District Local Government,
P.O.Box 568, Fort Portal - Uganda.
E-mail: Bagonza.patrick@gmail.com

RE: CONFIRMED RIFT VALLEY VIRUS (RVFV) FROM HUMAN BEING

I bring to your attention the scare in the district from outbreak of Rift Valley Fever that was confirmed by UVRI, Entebbe from samples of a patient that was admitted at Rwebisengo Health Centre on 5th December, 2019.

History of the patient:

The patient, **Mr. HR** 24years was picked by ambulance of the Ebola treatment unit (ETU) from Kimara 11 LC, Kasungu Parish, Butungama Sub County, **HR** was a casual Labourer, small extent hunter and drinking habit.

At the Ebola treatment unit, he was put in isolation because of the symptoms observed including acute onset of headache, vomiting/haematemesis, abdominal pain, bloody stool within two days. Also red veyes, high grade fever, bleeding from nose anal orifices, and confusion, .On 6th he passed on/died. These has been a trend of similar deaths in human beings but Isolated.

From the Veterinary department, we constituted a field team to start investigations in livestock related incidents.. Our findings were limited when we discovered that the deceased victim was roaming and indulged much in casual work NOT cattle herdsman. We also discovered that he led reckless life of drinking and could eat dead animals from wildlife close to the Centre where he lived. Some two sheep had died from a home where he started complaining of headache, pain, weakness and fever. some farmers reported abortions in cattle and death of goats.

Request

I therefore, request your support to a disease investigation team from NADDEC to join us in the field and deepen the diseases search in livestock that will inform decision for control measures to take.

Session vii: one health leadership, multisectoral coordination and sustainability

7.1 Time allocated

- 4 hours (lectures)

7.2 Learning outcomes

At the end of this session, trainees will know:

- Ways of mobilizing resources
- Partners and networks for One Health (nationally, regionally and internationally)

7.3 Materials for further reading

- Mugenda O.M and Mugenda A.B (2003)
- FAO/WOAH/WHO, 2019
- OH-APP, 2018
- NAPHS, 2019
- Killewo and Mdegela, 2018
- Mormina and Pinder, 2018

7.4 Session notes

7.4.1 One Health Leadership at country level

Leadership is part of everyday life and determines the chances of success or failure in pursuit of organizational purpose. It can simplify apparently complex issues; build trust and ownership of development programs. One Health Approach is relatively new and requires a lot of effort to ensure that there is sufficient buy in from individuals, governments and development partners.

One Health Leadership is not static but key aspects are addressed in the Tripartite Guide to addressing zoonotic diseases in the countries (FAO/OIE/WHO, 2019). Multi-sectoral coordination mechanisms (MCMs) facilitate governance for zoonotic diseases within the context of a country's national health governance at two levels:

- Inter-ministerial leadership and coordination: supports coordination, collaboration, and communication among sectors at the leadership level, and advocates for a multi-sectoral, One Health approach to policymaking, strategic planning, and resource and mobilization allocation.
- Technical coordination: supports coordination of technical activities to ensure that a multi-sectoral, One Health approach is taken and that there is alignment across existing governmental structures and across the technical activities addressing zoonotic diseases.

The best practice for sustained One Health Leadership at country level include:

i Establishing the MCM

- Agree on the need for an MCM for zoonotic diseases.
- Map existing coordination mechanisms.
- Convene and endorse an MCM for zoonotic diseases.
- Define membership.

- Determine leadership, governance and working arrangements
- Formally establish the MCM.
- Identify and task subgroups as needed.
- Identify subnational MCMs. Guidelines for formation of District OH teams (Annex III)
- Capture and endorse decisions.

ii Ensuring Sustainable Coordination

- Map infrastructure and activities.
- Identify stakeholders.
- Mobilize and allocate funding and resources.
- Monitor and evaluate function and impact.
- Develop a zoonotic disease framework, strategy, and plan, and facilitate alignment and coordination, or consolidation among various frameworks, strategies and plans related to zoonotic diseases
- Monitor and align national One Health activities.

iii Communication, Advocacy and Outreach

- Ensure engagement of all stakeholders in multi-sectoral, One Health activities to address zoonotic diseases, including awareness and support of the MCM's role and benefit
- Identify and prioritize technical activities, and assign roles and responsibilities
- Ensure priority activities are on track, including the six areas of technical activity described in this guide, and ensure coordination among them
- Coordinate the process of identifying priority zoonotic diseases and reviewing them regularly.
- Organize regular simulation exercises and review of zoonotic disease management and response coordination systems, including for the MCM itself

7.4.2 Assessment of multi-sectoral coordination mechanisms for one health

Sustainability of the National One Health Platform varies from country to country but it is very challenging due to the high level of coordination, collaboration and communication across sectors. All these depend on the ability of each country to uphold leadership, governance and resource mobilization to sustain one-health operations. Self-assessment of multi-sectoral coordination mechanisms is key in determining progression of each country in one health institutionalization. The One Health Assessment for Planning and Performance (OH-APP) is a monitoring framework for multi -sectoral coordination mechanisms (MCM) to annually self-assess their organizational capacity and performance to inform planning and development assistance (USAID. <https://www.onehealthapp.org/about>). It complements IHR JEE assessment and supports progressive assessments of country capacities to prepare and respond to zoonotic disease threats. Each country assesses itself in 29 areas covering.

I. Stage of One Health Coordination Mechanism (maturity model): beginning – developing - expanding – mature

- Beginning - capacity not yet been developed or performance has not yet been demonstrated in this area.
- Developing - the MCM has begun to take action, but has not yet demonstrated capacity or ability to perform in this area.
- Expanding - the MCM has taken action and has demonstrated capacity and performance in this area.
- Mature - capacity demonstrated and performance is consistent and suitable.

II. Capacity indicators for multi-sectoral coordination mechanisms

- Organizational Structure - including terms of reference and memoranda of understanding
- Leadership
- Multi-sectoral Integration
- Communications and information exchange
- Monitoring & Evaluation
- Government Funding Sources
- Coordinating and collaborating
- Policy advocacy to overcome policy constraints
- Joint planning among One Health stakeholders
- Facilitating data analysis and use in decision-making

III. Organizational performance indicators for multi-sectoral mechanisms

- Engaging stakeholders
- Coordinating and collaborating
- Policy advocacy to overcome policy constraints
- Joint planning among One Health stakeholders
- Facilitating data analysis and use in decision-making
- Mobilizing & Optimizing Resources

A number of One Health capacity assessment tools exist and complement each other. Since 2018, Uganda developed the National Action Plan for Health Security 2019 - 2023 (NAPHS) to complement government efforts to determine own health security priorities while encouraging donors and partners to fill in gaps identified by a country's JEE.

7.4.3 Resource advocacy for One Health

Sustainability of One Health is dependent on resource mobilization and efficient utilization. Resource mobilization refers to identification and obtaining resources to help achieve organizational goals. This can be financial, human, time and natural resources, advocacy and lobbying, influence, information. A clear resource mobilization plan and strategy is a pre-requisite. Much as donors have been providing grants and project support for One Health establishment in most countries, sustainability can only be achieved though

ownership by government and communities. Resource advocacy can be through a variety of means including:

- Partnerships and collaboration
- Proposal grant writing
- Grants and donations
- Internally generated funds.

Efficient budgeting and accountability procedures are central in justifying government and donor support. This means having clear books of accounts, regular audits, clearly documented with competent staffing to ensure value for money. Partnerships and networks promote understanding of each other's roles and abilities hence creating synergy and opportunities for resource raising. The National One Health Strategic Plan is one key document that highlights the key requirements for multi-sectoral collaboration and it can greatly support resource mobilization and advocacy.

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Annex i: Generic Training Time Table for One Health Training Course

Day	Time	Activity/Topic	Responsibility
Day 0	All day	Arrival of trainers and trainees to venue	Organizers
Day 1	8.00 - 9.00 am	Opening ceremony, introductions, expectations and fears, objectives of the training, mode of delivery, house rules, pre-training quiz	Organizers & Trainees
	9.00 -10.00 am	Introduction to One Health Approach in Uganda	Facilitators (including NOHP)
		Evolution of One Health approach	
		Key actors and drivers of OH	
		Policy frameworks of OH in Uganda	
		One Health Competencies	
	10.00 – 10.30 am	Health Break & Group Photo	
	10.30 – 1.00 pm	Epidemiology (definition, epi-triad, OH triad) Principles of surveillance (definition, justification, types, methods, tools and application)	Facilitators
		Surveillance in practice: - key laboratory procedures - linking laboratory and epi unit - biosafety and biosecurity	
1.00 – 2.00 pm	Lunch Break		
2.00 – 5.30 pm	National Surveillance System Standards, Operations & Evaluations (National Surveillance Plan, SET report 2018, JEE report 2017)	Facilitators	
	Health Break		

		Introduction to Participatory Disease Search (PDS)/Participatory Epidemiology (PE)	Facilitators
Day 2	8.00 - 10.00 am	Outbreak definitions, types & characteristics (line listing, prevalence, incidence, epidemic curves, morbidity rate, mortality rate, attack rate, case fatality)	Facilitators
		Outbreak investigation and response: stages, SOPs & response procedures	Facilitators
	10.00 - 10.30 am		
	10.30 - 1.00 pm	Introduction to Good Emergency Management Practices (GEMP) & the Emergency Management Cycle (prepare-prevent-detect-respond-recover)	Facilitators
	1.30 - 2.30 pm	Lunch Break	
	2.00 - 6.00 pm	Group work on outbreak investigations - preparation of SOP - After action review	Trainees
Day 3	8.00 - 10.00 am	Disease documentation and reporting (types of outbreak reports, format of investigation report, reporting hierarchy, data collection/processing/sharing, reporting tools, frequency of reporting, publications)	Facilitators
	10.00 - 10.30 am	Health Break & departure to the field	
	11.00 - 12.30 pm	Field work on outbreak investigation (PDS/PE) with farmers	Trainees & Farmers
	1.00 - 2.00 pm	Lunch Break	
	2.00 - 3.00 pm	Group work preparations	Trainees

Day 4	8.00 – 10.00 am	National One Health Communications (NOHP, OH collaboration & data sharing, National OH Risk Communications)	Facilitators
	10.00- 10.30 am	Health Break	
	10.30 – 1.00 pm	Effective communications for OH (types, processes, channels, problems, feedback, media)	Facilitators
		Community engagement & advocacy	
	1.00 – 2.00 pm	Lunch Break	
	2.00 – 5.30 pm	Group work, case studies on OH communications and community engagement	Trainees
Day 5	8.00 – 10.00 am	National One Health Leadership (Multi-sectoral coordination mechanisms, assessment of MCMs and resource mobilization for OH)	Facilitators
	10.00 - 10.30 am	Health Break	
	10.30 – 11.30 pm	Resource mobilization (Organization, partnerships, networks, accountability, fundraising, proposal writing for grants & donations, internally generated funds)	Facilitators
	11.30 - 12.00	Question and answer session	All
	12.00 - 1.00	Post-training quiz & course evaluation	Organizers
	1.00 - 2.00 pm	Lunch Break	
	2.00 – 3.00 pm	Course recap, training results & way forward	All
	3.00 - 3.30	Health Break	
	3.30 – 5.00 pm	Closing ceremony & Certificate Award	Organizers

Annex ii: Uganda's JEE Scores 2017

Technical Areas (Action Packages)	JEE Indicators	Score
National Legislation, Policy and Financing	P.1.1 Legislation, laws, regulations, administrative requirements, policies or other government instruments in place are sufficient for implementation of IHR (2005)	3
	P.1.2 The State can demonstrate that it has adjusted and aligned its domestic legislation, policies and administrative arrangements to enable compliance with IHR (2005)	3
	P.1.3 Financing is available for the implementation of IHR capacities	2
	P.1.4 A financing mechanism and funds are available for the timely response to public health emergencies	1
IHR coordination, communication and advocacy	P.2.1 A functional mechanism is established for the coordination and integration of relevant sectors in the implementation of IHR	2
Antimicrobial Resistance	P.3.1 Antimicrobial resistance detection	2
	P.3.2 Surveillance of infections caused by antimicrobial-resistant pathogens	2
	P.3.3 Health care-associated infection (HCAI) prevention and control programmes	3
	P.3.4 Antimicrobial stewardship activities	3
Zoonotic Diseases	P.4.1 Surveillance systems in place for priority zoonotic diseases/ pathogens 2	2
	P.4.2 Veterinary or animal health workforce 3	3
	P.4.3 Mechanisms for responding to infectious and potential zoonotic diseases are established and functional 2	2

Food Safety	P.5.1 Mechanisms for multisectoral collaboration are established to ensure rapid response to food safety emergencies and outbreaks of foodborne diseases	2
Biosafety and Biosecurity	P.6.1 Whole-of-government biosafety and biosecurity system is in place for human, animal and agriculture facilities	3
	P.6.2 Biosafety and biosecurity training and practices	3
Immunization	P.7.1 Vaccine coverage (measles) as part of national programme	3
	P.7.2 National vaccine access and delivery	4
National Laboratory System	D.1.1 Laboratory testing for detection of priority diseases	4
	D.1.2 Specimen referral and transport system	3
	D.1.3 Effective modern point-of-care and laboratory-based diagnostics	3
	D.1.4 Laboratory quality system	3
Real-time Surveillance	D.2.1 Indicator- and event-based surveillance systems	4
	D.2.2 Interoperable, interconnected, electronic real-time reporting system	3
	D.2.3 Integration and analysis of surveillance data	3
	D.2.4 Syndromic surveillance systems	3
Reporting	D.3.1 System for efficient reporting to FAO, OIE and WHO	3
	D.3.2 Reporting network and protocols in country	3
Workforce Development	D.4.1 Human resources available to implement IHR core capacity requirements	3
	D.4.2 FETP1 or other applied epidemiology training programme in place	4
	D.4.3 Workforce strategy	3
Preparedness	R.1.1 National multi-hazard public health emergency preparedness and response plan is developed and implemented	1
	R.1.2 Priority public health risks and resources are mapped and utilized	1

Emergency Response	R.2.1 Capacity to activate emergency operation	4
	R.2.2 EOC operating procedures and plans	4
	R.2.3 Emergency operations programme	4
	R.2.4 Case management procedures implemented for IHR relevant hazards	3
Linking Public Health and Security Authorities	R.3.1 Public health and security authorities (e.g. law enforcement, border control, customs) are linked during a suspect or confirmed biological event	2
Medical countermeasures and personnel deployment	R.4.1 System in place for sending and receiving medical countermeasures during a public health emergency 2	2
	R.4.2 System in place for sending and receiving health personnel during a public health emergency	2
Risk Communication	R.5.1 Risk communication systems (plans, mechanisms, etc.)	2
	R.5.2 Internal and partner communication and coordination	4
	R.5.3 Public communication	4
	R.5.4 Communication engagement with affected communities	4
	R.5.5 Dynamic listening and rumor management	3
Points of Entry	PoE.1 Routine capacities established at points of entry	1
	PoE.2 Effective public health response at points of entry	1
Chemical Events	CE.1 Mechanisms established and functioning for detecting and responding to chemical events or emergencies	2
	CE.2 Enabling environment in place for management of chemical events	2
Radiation Emergencies	RE.1 Mechanisms established and functioning for detecting and responding to radiological and nuclear emergencies	2
	RE.2 Enabling environment in place for management of radiation emergencies	2

Annex iii. Guidelines for formation of District One Health Teams (DOHT) Proposed membership of the DOHT/Composition

The District One Health Teams (DOHT) shall be constituted by the key sectors at the district and these include; Health Sector (Surveillance, EPI, lab & Health education), Production Sector (Veterinary, Fisheries & Crop), Natural Resources sector (Forestry, Environment), Uganda Wildlife Authority and the NGOs/CBOs related to health (RESOLVE Project, 2019). Some of these categories can be co-opted as and when need arises. Note: Membership shall range from 11-13 members.

Terms of Reference for the DOHT

1. The DOHC shall be composed of members from each of the sectors.
2. The CAO shall assign members to the DOHT.
3. The Chair to the DOHC shall be on annual rotational basis.
4. The District Council shall commit at least 3% of her Annual budget to funding planned OH activities in the district.
5. The DOHC shall provide timely accountability of all funds utilized.

Functions of the DOHT

- 1). To provide technical guidance and oversight to the District & Sub-County One Health Committees on the overall implementation of One Health activities.
- 2). To provide technical guidance to District Councils on the formulation & implementation of ordinances/ byelaws relating to One Health.
- 3). To give technical advice to Implementing Partners & Private sector on issues related to One Health.
- 4). To Advocate and mobilize resources for implementation of One Health activities in the district.

Key outputs of DOHT

1. Number of OH meetings held.
2. Number of reports submitted to the NOHP.
3. Number of public health events investigated and reported.
4. Work plans and contingency plans developed.
5. Number of sensitization meetings held

NB: In some cases the DOHT can be the same time there as District Antimicrobial Resistance (AMR) Teams.

Annex iv. Example of One Health Surveillance Forms (M AAIF)

District.....

Household identifier.....

(3) Goats	
Surveillance data recording form	
(5) Sheep	
No of animals sampled:	
(1) Cattle	
(2) Dogs	
(3) Goats	
(4) Pigs	
(5) Sheep	
Sample types: (1) Blood	
(2) Sera	
(3) Swabs	
Age/sex category sampled – Age	
Sex	
Any clinical signs observed:	
Any deaths reported:	
Tentative diagnosis: (Clinical/PM):	
Action taken (treatment/reporting/field tests):	
General comments:	
Reporting officer (name & signature):	
Date:	

Attach details of samples collected, including the ID's. This form can be adjusted to suit different purposes.

Annex v. Viral Hemorrhagic Fever Case Report Form

IDSR Viral Hemorrhagic Fever Case Report Form	
Variables / Questions	Answers
1	Detection day (ddmm/yyyy)
2	Detection place (Health facility or Community)
3	Patient identification number (yyyy-week-CCC-PPP-DDD-Reporting site-nnn)
4	Patient surname or last name
5	Patient first name (s)
6	Age (years)
7	Sex (F/M)
8	Number of people in same household
9	Number of other contacts
10	Patient's residential address
11	Village/Town
12	Neighborhood
13	District
14	Province
15	Country
16	Date of first symptoms and Clinical signs
17	Observed Symptoms and Clinical signs
18	Was patient exposed to any known risk factor for the disease? (Yes/No)
19	If yes, specify risk factor (s)
20	Lab results
21	Final Classification (Not a case, Suspect, Probable, Confirmed by Lab, Confirmed by epidemiological link, Pending)
22	Outcome (Died, Survived, Unknown)
23	End of the latest contract followed -up (dd/mm/yy)
24	Other Notes and Observation
25	Date latest update of this record (dd/mm/yyyy)

HMIS 033B: HEALTH UNIT WEEKLY SURVEILLANCE FORM

Date _____ For Period (Date) _____ Week Number (#) _____

Health Unit _____ Health Unit Code _____ Sub-County _____

HSD _____ District _____ Parish _____

1 & 2. DISEASES

		CASES.	Code	Cases this Week			DEATH.	Code	Deaths this Week
1.	Malaria		MA.				MA.		
2.	Dysentery		DY.				DY.		
3.	Severe Acute Respiratory Infection (SARI)		SA.				SA.		
4.	Acute Flacid Paralysis		AF.				AF.		
5.	Adverse Events Following Immunization		AE.				AE.		
6.	Animal Bites		AB.				AB.		
7.	Bacterial Meningitis		MG.				MG.		
8.	Cholera		CH.				CH.		
9.	Guinea Worm		GW.				GW.		
10.	Measles		ME.				ME.		
11.	Neonatal Tetanus		NT.				NT.		
12.	Other Emerging Infectious Diseases (eg. Small Pox, ILI, SARS)		ID.				ID.		
13.	Other Viral Hemorrhagic Fevers		VF.				VF.		
14.	Plague		PL.				PL.		
15.	Rabies		RB.				RB.		
16.	Typhoid Fever.		TF.				TF.		
17.	Yellow Fever		YF.				YF.		

3. OPD SUMMARY

OPD.	OPD New Attendees		OPD Total Attendance		Maternal Deaths		Perinatal Deaths	

Pg 1



Annex vii. Example of weekly Animal Disease Report (MAAIF)

Parameter	Unit of interest 1	Unit of interest 2	Unit of interest 3	Unit of interest 4
Date				
Species				
Breed/type				
No. at risk				
No. sick				
No. dead				
Disease suspected (S)/confirmed (C)				
Active (A) or Passive (P)				
Date 1 st symptom				
Date of first death				
Date of laboratory Submission				
Village, District & Sub county				
GPS				
Notes: (Age groups breed and sex, etc.)				

Annex viii. Generic Outbreak investigations case scenario

Group	Species	Suspected Outbreak	Scenario presentation to the DVO
1	Bovine	Anthrax	Five heads of cattle have died, each in a different household in Nakutaino Village, Ngenge Subcounty, Kween District. This followed recent heavy rains at the start of April, 2019. Two carcasses have been slaughtered and meat taken to Kapchorwa Township. The disease was only reported from a medical colleague after two people with skin lesions reported to a nearby medical centre in Kapchorwa District. Death of cows is learnt through news at a local radio station.
2	Poultry	HPAI	Anglers report massive death of wild birds at Nakiwogo landing site in Entebbe, Wakiso District. At the same time, ducks, chickens and chickens are reported to be dying in large Numbers in Kalangala District.
3	Caprine	RVF	5 goats bought from Ibanda district to Kabale District in the municipality. Two weeks after, one goat gets sick and slaughtered at Municipal facilities. From the same household in Kabale District, a woman gets sick, presents with hemorrhagic signs and dies immediately.
4	Swine	CCHF	2 pigs transported from Nakaseke District to Luwero District on boda boda following sudden onset of fever and cyanosis. Some blood spilled on the road for over 25 Kms. The pig handler is hospitalized at Nakasseke hospital with hemorrhagic signs. There is panic and nobody has officially reported to you. You have never had such a disease.
5	Canine	Rabies	A wild animal is rumored to have bitten a dog last week in Ipyer Ward, Amolatar Town Council, Amolatar District. The dog runs berserk and bites other dogs after a week. The dog is mad and backing at the owner but still tied at home. There is panic in the village, news reported on local radio and there is no vaccine or laboratory at your station.

(Adapted from OH Training Course, Buyende District, 25/4/2019)

In your groups;

- (1) What actions do you have to take as a DVO of the affected district?
- (2) Describe outbreak investigation procedures to apply (1 – 4 weeks following the rumor).
- (3) How would you manage the outbreak at district level?
- (4) What immediate disease control procedures and measures will you apply bearing in mind that this could be a disease of public health importance, human causalities expected.
- (5) What preparedness measures will you put in place to circumvent similar outbreaks in future?
- (6) Write a standard outbreak investigation report

Annex ix. Generic outbreak investigation reporting guidelines

1. Cover page should include the following:

- Date Written, Release Date, Addressee, Sender (Responsible Person), Report Co-authors, Peer Reviewers, Date Reported, Reported By, Person Contacted

2. Introduction

- Date and time notification was received by your agency
- Describe the context of the outbreak: • Who/population affected • Where/location/place/setting • When/Time of onset • What/describe clinical findings • Why/suspected or known etiology or risk factors
- Date and time investigation was initiated by the agency
- Describe the primary objective(s) of the investigation x Background
- Brief scientific background on the disease and/or suspected etiologic agent

3. Investigation Methods

- Epidemiologic: • Initial investigation methods including interviews, site visits, conference calls, etc. • Case definition • Data collection (case-finding and line listing, medical record reviews)
- Data analysis methods (e.g., descriptive epi, hypothesis generating interviews, cohort or case-control studies, other epidemiological data collection and analysis)
- Microbiological/toxicological • Laboratories involved. • Type of clinical specimens and sources • Laboratory methods
- Environmental • Review reports developed by environmental responders • Describe any trace back investigations that were done (e.g. food products, etc.) • Describe any environmental specimens collected.

4. Results

Epidemiological- descriptive epidemiology results including:

- Cases
- Demographic data
- Clinical data (symptoms, signs, duration of illness, incubation period.
- Outcome of illness (hospitalization, death, chronic effects)
- Location of cases (facility, county, city, etc.)
- Epidemic curve and other graphs
- Compare characteristics of cases and controls, if applicable
- Describe any trace back investigations that were done (e.g. food products, etc.)
- Describe any environmental specimens collected
- Describe exposed population, if applicable
- Describe the results of analytical studies
- Microbiological/toxicological • Number and nature of specimens submitted for testing and results of laboratory testing
- Environmental • Describe observations and pertinent findings from environmental investigation(s) • Describe the results of trace-back investigations • Results of environmental testing (if any)

5. Limitations of the study

- Discuss any factors that limited the investigation such as (small number of cases, poor information, late reporting, limited resources to conduct investigations, etc)
- Explain what was done to control the outbreak.

6. Conclusion

- Describe the conclusions and actions taken x Lessons learnt

7. Lessons learnt

8.Recommendations for controlling disease and/or preventing/mitigating exposure:

- Recommendations to improve investigation and management of such outbreaks in the future•Measures to prevent similar outbreaks in the future
- Educational message to the public, public health professionals and policy makers.

9. **References** - supportive literature citations

10.**Appendices/Annex** – additional materials

(Adapted from: West Virginia Department of Health and Human Resources for Bureau for Public Health, <https://oepls.wv.gov/toolkits/documents/reports/ob-report-writing-guidelines.pdf>).

Annex X. Daily attendance sheet

Attendance Sheet for One Health Training Course Date: Venue:

Full Name/Gender	Organization	Title	Email	Telephone	Sign

(Insert Institutional logo and expand up to the expected number of participants)

Annex XI. Example of OH pre-/post-training quiz

Define One Health (OH)	
Name 2 documents governing OH in Uganda	
Name at least 5 government bodies implementing OH in Uganda	
Write the following institutions in full & state their functions in institutionalizing OH in Uganda	
NTF	
DTF	
NOHP	
PHEOC	
Name at least 5 partners for OH in Uganda	
Name the composition of OH District Task Force in Uganda	
Name the competent authority for animal disease reporting in Uganda	
Name the competent authority for animal disease reporting in each district	
Name the roles of the following in OH implementation in Uganda	
(a) Uganda Veterinary Association (UVA)	
(b) Uganda Wildlife Authority (UWA)	
(c) Ministry of Health (MOH)	
(d) National Animal Disease Diagnostics and Epidemiology Centre (NADDEC)	

(e) Ministry of Water Environment and Natural Resources (MWE)	
Define the following	
Syndromic Disease Surveillance	
Participatory Epidemiology	
Participatory Disease Search (PDS)	
Name 5 techniques used in PDS	
What is unique about PE	

SECTION B

1. How many zoonotic diseases has the Government of Uganda prioritized for prevention and control?
 - A. 7
 - B. 3
 - C. 5
 - D. 25

2. Which of following is NOT a priority zoonotic disease (PZD) in Uganda
 - A. Ebola Virus Disease
 - B. Zoonotic Tuberculosis
 - C. Rabies
 - D. Anthrax

3. Which of the following government ministries are key in the operationalization of One Health approach in Uganda.
 - A. Ministry of Health
 - B. Ministry of Agriculture, Animal Industry and Fisheries
 - C. Ministry of Water and Environment
 - D. All of above

4. Which ministry currently houses The National One Health Platform (NOHP)?
- A. Ministry of Defense and Veterans Affairs
 - B. Ministry of Agriculture, Animal Industry and Fisheries
 - C. Ministry of Health
 - D. Ministry Education and Sports
5. Which of the following embrace the One Health Approach
- A. Collaboration
 - B. Multi-sectoral
 - C. Trans-disciplinarity
 - D. All of above
6. We can tell the level of affection between two people who are conversing, by the distance between them.
- A. (True) B. (False)
7. Communication and Advocacy are the same thing.
- A. (True) B. (False)
8. Soliciting feedback on a communication is important.
- A. (True) B. (False)
9. In communicating, body language plays a big role in generating feedback.
- A. (True) B. (False)
10. When carrying out advocacy, it is important to speak to everybody who cares to listen to us.
- A. (True) B. (False)

Annex xii. One Health training course evaluation

Date: _____ Venue: _____ District: _____

Name & Title: _____ Email: _____

Level of training: _____

Please take a few moments to evaluate the course. Answer the following questions related to the course that you attended. Your response will be valuable feedback to the organizers.

Course Content

Question	Below Expectation 1	2	Average Expectation 3	4	Exceeded Expectation 5
Course met your needs					
Matched what is in the course program					
Study materials/handouts					
Class location and equipment					
Venue Suitability					

For specific comments, please elaborate

below _____

Additional Questions

- What did you find was the most valuable part of this course?

- Do you have any suggestions on how we could improve this program?

- Other comments?

- May we use your quotes/comments/photos from this training? YES / NO. If yes,

Signature: _____

Annex XIII. Generic Certificate of Attendance



CERTIFICATE
OF COMPLETION

This is to certify that

.....

Successfully Completed One Health Training Course
Conducted by the
In Collaboration With the National One Health Platform Held
.....District, Uganda On
.....

Chairperson (Name)
National One Health Platform

Annex iv: List of Contribution

<p>Drafting workshop for OHTM, NADDEC, Entebbe, 2-4 May 2018</p>	<p>UVRI/PHEOC: Robert Downing, Joshua Kayiwa, CDC/PHFP; Angella Musewa; ZDCO/MOH Musa Sekamatte, Jonan Gasanani, Herman Mwanja; OHCEA Peninah Nsamba, COVAB Joseph Kungu; CHC 360° Loy Edith Kimuli; UVA Buyinza Lameka Seguya; MAAIF/NADDEC Robert Mwebe, Paul Lumu, Richard Sam Erechu, Eugene Kidega; MOH Jude Okiria; MWE Betty Mbolanyi; URCS Suudhi Bamutya; FAO Chrisostom Ayebazibwe, Francis Ejobi; UWA Robert Aruho</p>
<p>OH Focal Persons Meeting, Luwero, 7-11 May 2018</p>	<p>MOH/ZDCO/MOH Musa Sekamatte, Doreen Gonahasa, Shamim Nabanoba, Ntungire Dickson, Atuheire Allison; UWA Robert Aruho; MWE Betty Mbolanyi, MAAIF Deo Ndumu, Paul Lumu, Moses Mwanja, Martin Esau, Alfred Wejuli, Robert Mwebe, Sserugga Joseph, Nakanjako Maria Flavia, UPF Peter Ouma, UPDF Godwin Bagashe Bagyenzi; UVA/OHTWG Sylvia Baluka; UMA/OHTWG Mukuzi Muhereza; FAO/COVAB Francis Ejobi; FAO Chrisostom Ayebazibwe, Gerald Nizeyimana; Luwero DLG Kasule Timothy; Makerere University/IDI Reuben Kiggundu; UWA Akurut Gloria Grace & Howard Onyuth</p>
<p>OH Document Review Meeting, Jinja, 10-12 Dec 2018</p>	<p>NADDEC/MAAIF Anna Rose Ademun, Deo Ndumu, Merab Acham, Joseph Sserugga, Moses Mwanja, Robert Mwebe, Nannozi K. Beatrice, Fred Monje, Omodo Micheal, Paul Lumu; NARO Halid Kirunda; UVA Sylvia Baluka; UWA Margret Dricuru; FAO Ayebazibwe Chrisostom, Mbabazi John Bosco, Susan Ndyanabo, Agatha Ayebazibwe, Racheal Nakamya; COVAB Joseph Erume, Sam Majalija, Francis Ejobi; OHCEA Peninah Nsamba; MOH/NOHP Jude Okiria, Florence Ssebutinde, Daniel Jacob Emong, Gasanani Jonan; MWE Tumuhaise Deogratius</p>

**THE NATIONAL ONE HEALTH PLATFORM (NOHP) UNDER THE
CHAIRMANSHIP OF UGANDA WILDLIFE AUTHORITY
PLOT 7 KIRA ROAD, KAMWOKYA, P.O. Box 3530, Kampala, Uganda**