JOINT EXTERNAL EVALUATION OF IHR CORE CAPACITIES

of the

REPUBLIC OF UGANDA

Mission report:
June 26-30, 2017

World Health Organization

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ACKNOWLEDGEMENTS

Contents

Abbreviations

AAR	After Action Review
AEC	Atomic Energy Council
AFENET	African Field Epidemiology Network
AFI	Acute Febrile Illness
AMR	Antimicrobial Resistance
ASEOWA	African Union Support to Ebola Outbreak in West Africa
BCC	Behavioural Change Committee
BTWC	Biological and Toxins Weapons Convention
CAA	Civil Aviation Authority
CAPSCA	Collaborative Arrangement for the Prevention and Management of Public Health Events in Civil Aviation
CBRNE	National Chemical, Biological, Radiological, Nuclear, and Explosives
CDC	Centers for Disease Control and Prevention
CHAI	Clinton Health Access Initiative
CHEW	Community Health Extension Workers
CONOP	Concept of Operation
CPHL	Central Public Health Laboratories
CSO	Civil Society Organizations
CWC	Chemical Weapons Convention
DGAL	Directorate of Government Analytical Laboratory
DHS	District Health System
DLETP	District Level Epidemiology Training Program
DQA	Data Quality Assessments
DPT	Diphtheria-Tetanus-Pertussis vaccine
DRR	District Rapid Response
DRRT	District Rapid Response Teams
DTF	District Task Force
DVS	District Vaccine Stores
EBS	Event Based Surveillance
EIA	Entebbe International Airport
ESD	Education for Sustainable Development
EQA	External Quality Assurance
GHSA	Global Health Security Agenda
GLASS	Global Antimicrobial Resistance Surveillance System
GOARN	Global Outbreak and Response Network
GoU	Government of Uganda
HCAI	Health Care Acquired Infections
HSD	Health Sub-District
HSSP	Health Sector Strategic Plan
IBS	Indicator Based Surveillance

IDI	Infectious Disease Institute
IDSR	Integrated Diseases Surveillance and Response
IFRC	International Federation of the Red Cross
IHR	International Health Regulations
INFOSAN	International Network of Food Safety Authorities
IPC	Infection Prevention and Control
JEE	Joint External Evaluation
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MCM	Medical Countermeasures
MCV	Measles Containing Vaccine
MEMD	Ministry of Energy and Mineral Development
MIA	Ministry of Internal Affairs
MoDVA	Ministry of Defense and Veteran Affairs
MoH	Ministry of Health
MoU	Memorandum of Understanding
MPH	Masters in Public Health
MW	Ministry of Water and Environment
NADDEC	National Animal Disease Diagnostic and Epidemiological Center
NDC	National Disease Control
NECOC	National Emergency Coordination and Operations Center
NEMA	National Emergency Management Authority
NEU	Nuclear Energy Unit
NFP	National Focal Point
NHSP	National Health Sector Plan
NMHPRP	National Multi-Hazard Preparedness and Response Plan
NMS	National Medical Stores
NOHP	National One Health Platform
NRRT	National Rapid Response Team
NSTRN	National Specimen Transport and Referral Network
NTF	National Task Force
NTRL	National Tuberculosis Reference Laboratory
OIE	Organisation for Animal Health
OHCEA	East African Consortium
OPCW	Organisation for the Prohibition of Chemical Weapons
OPM	Office of the Prime Minister
PHE	Public Health Emergencies
PHEOC	Public Health Emergency Operations Center
PoEs	Points of Entry
PPE	Personal Protective Equipment
RERC	Radiological Emergency Response Committee
SME	Subject Matter Experts
SOP	Standard Operating Procedures

SPARS	Supervision Performance Assessment and Recognition Strategy
STAR	Socio technical allocation of resources
TIC	Toxic Industrial Chemicals
TTX	Table Top Exercise
UBOS	Uganda Bureau of Statistics
UDHS	Uganda Demographic Health Survey
UMC	Uganda Media Centre
UNBS	Uganda National Bureau of Standards
UNCST	Uganda National Council of Science and Technology
UNEPI	Uganda National Expanded Program for Immunization
UNHLS	Uganda National Health Laboratory Services
UNIPH	Uganda National Institute of Public Health
UPDF	Uganda People's Defense Force
UPF	Uganda Police Force
UPS	Uganda Prisons Service
URCS	Uganda Red Cross Society
UVRI	Uganda Virus Research Institute
VHT	Village Health Teams
VMC	Vaccines Management Committee
VPD	Vaccine Preventable Diseases
WHO	World Health Organization
ZDCO	Zoonotic Disease Coordination Office

Executive summary

This evaluation was a joint assessment of the International Health Regulations (IHR) core capacities of Uganda using the World Health Organization (WHO) IHR Joint External Evaluation (JEE) tool. A multi sectoral international External Evaluation Team of 15 members selected on the basis of their recognized technical expertise from a number of countries, and advisors representing international organizations conducted the assessment. The mission took place from June 26 to 30, 2017, and was comprised of discussions and site visits at both the national and sub-national levels. This report presents jointly developed recommendations and priority actions which resulted from discussions between the external experts and their Ugandan counterparts representing all the sectors relevant to the 19 technical areas.

Uganda requested to be assessed through a JEE process in December 2016. The process was spearheaded by the Office of the Prime Minister (OPM) with the Ministry of Health Public Health Emergency Operations Centre (PHEOC) as the secretariat. The internal self-evaluation process kicked off with a National Stakeholders Meeting in the Office of the President Conference Centre on the 24th of March 2017. Different stakeholders and Subject Matter Experts (SMEs) in the 19 JEE technical areas were invited from all relevant government, private and academic sectors around the country to participate in the process. They were introduced to the IHR and the JEE tool, and briefed on the Global Health Security Agenda (GHSA) external assessment exercise that had been conducted in February 2015. The facilitators were trained in April 2017, allowing them to take the lead in engaging the SMEs in evaluating Uganda's capacities in each of the technical areas using the JEE tool. The output of these meetings formed the first draft of the National Self-Assessment Report which included answers to both technical and contextual questions in the JEE tool. This assessment also included country capabilities and existing gaps, recommendations from the technical areas, as well as a list of supporting documents to be used as evidence of existing capacities. The second National Stakeholders meeting comprised of different presentations from the first self-assessment report per technical area, which were comprehensively reviewed by different SMEs from all government, private, and academic sectors. The output of this report constituted the second draft of the National Self-Assessment report which was then compiled by the PHEOC and submitted to the OPM and MOH, for input and approval before sending to WHO.

Uganda is commended for demonstrating very strong commitment to meeting the core capacities required by the IHR. Uganda was the first country to pilot the assessment of financial indicators within the JEE. The JEE assessment was based on fully collaborative, multi-sectoral discussions with country experts at all levels. The participants included representatives from health, wildlife, agriculture, animal industry, defence, finance, foreign affairs, internal affairs, security, justice and constitutional affairs, trade and industry, labour, academia, and water and environment. The results of the self-assessment for all 19 technical areas were presented and discussed in detail with the External Evaluation Team throughout the JEE process. The evaluation team and host country experts also participated in a series of facilitated discussions to jointly assess Uganda's current strengths and best practices, areas that need strengthening and challenges, scores, and 3-5 priority actions for each of the 19 technical areas. The follow-up meetings and site visits in Kampala, Entebbe, and Busia ensured representation of perspectives from different levels of the health system for the various technical areas.

Uganda is a signatory to the IHR and despite ongoing efforts, has not yet fully met the required core capacities under the IHR to prevent, detect, and respond to public health emergencies (PHEs). The findings of the evaluation will guide Uganda in producing its action plan to continue developing a robust, resilient, and inclusive multi-sectoral health system. Technical area scores, supporting information, and specific recommendations for priority actions are provided under each of the Technical Area sections of the full report. This summary highlights the important cross-cutting themes that have emerged as priorities for action.

Major Findings:

- There is a critical need for continued and expanded multi-sectoral communication and coordination. One of the resounding themes of the JEE discussions was the need for a greater integration between the health sector and animal sector. There is, likewise, a broader necessity to encompass all the relevant sectors involved in the implementation of a One Health approach. Significant differences exist between the capacities of the Ministries of Health and Agriculture Animal Industry and Fisheries when it comes to preparedness, real time surveillance and emergency response, creating vulnerabilities for both humans and animals as zoonotic diseases spread; these gaps need to be urgently addressed.

- Uganda has developed some impressive capacities in the areas of surveillance, laboratories, emergency responses operations, and risk communications. The major strengths of the country's response to health security threats stand out as a model of collaboration in these areas. Capabilities and accomplishments include an early warning system for both indicator and event-based surveillance, as well as National referral laboratories which are well equipped to quickly detect all IHR priority pathogens and provide technical support to other African countries. An efficient national specimen referral system is in place. Regarding emergency response capacity, Uganda has an active PHEOC with leadership, staff and technology to rapidly coordinate the response to PHEs, and the PHEOC has effective situational awareness systems linked to all districts, all One Health stakeholders (MOH, MAAIF, etc.), and is fully connected to the National Emergency Coordination and Operations Center (NECOC).

- There is a need to develop and enhance regulations, standards, and coordination mechanisms for Food Safety, Water and Environmental Health in order to properly ensure their implementation to efficiently manage chemical, radiation and microbiological contamination. The laws and regulations along with their implementation need strengthening.

- The finalization and validation of standard operating procedures, plans, guidance, tools in specific technical and cross-cutting areas should be carried out as a priority, as this will allow application of consistent standards and practices for improved health security.

- There is an urgent need to kick start the efforts to designate and strengthen core capacities for the points of entry into Uganda, required under the IHR (2005). While Entebbe International Airport has some capacities, at other major points of entry i.e. ground crossings and water ports, the capacity is very limited. This will offer the opportunity to develop a multi-sectoral health and surveillance plan at government level to incorporate human and animal health, food safety and environmental factors at the points of entry.

Priority cross cutting actions

- Immediately establish and strengthen mechanisms for programmatic coordination, communication and better integration across sectors, and particularly focus on animal health so as to reinforce their capacities in preventing and responding to zoonotic diseases, and combat anti-microbial resistance in line with the One Health approach.

- Ø The government of Uganda (GoU) is encouraged to strengthen sustainable funding across all technical areas, working with relevant sectors and decision makers including the Finance Ministry and the Parliament to implement a strategy for sustainable financing and include the establishment of an immediately accessible response fund within the Ministries of Health and Agriculture, Animal Industries and Fisheries, and enable initiation of rapid responses to PHEs in Uganda across all the relevant sectors.

- Elaborate and cost a national action plan using the JEE Report as the basis for priority actions to be built into the plan. This will need to take into account the priority recommendations included in this evaluation.

Uganda scores

Technical areas	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
	P.4.2 Veterinary or animal health workforce	3
	P.4.3 Mechanisms for responding to infectious and potential zoonotic diseases are established and functional	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 FETP[1] or other applied epidemiology training programme in place	4
	D.4.3 Workforce strategy	3

[1] FETP: Field epidemiology training programme

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 operations	R.2.1 Capacity to activate emergency operations	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
	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

Note on scoring of technical areas of the JEE tool

The JEE process is a peer-to-peer review and a collaborative effort between host country experts and JEE team members. In completing the self-evaluation, the first step in the JEE process, and as part of preparing for an external evaluation, host countries are asked to focus on providing information on their capabilities based on the indicators and technical questions included in the JEE tool.

The host country may score their self-evaluation or propose a score during the onsite visit with the JEE team. The entire external evaluation, including the discussions around the score, strengths/best practices, the areas which need strengthening, challenges and the priority actions, is done in a collaborative manner, with the JEE team members and host country experts seeking agreement.

Should there be significant and irreconcilable disagreement between the JEE team members and the host country experts, or among the JEE team, or among the host country experts, the JEE team lead will decide on the final score and this will be noted in the final report, along with the justification for each party's position.

PREVENT

National legislation, policy and financing

Introduction

The International Health Regulations (IHR) (2005) provide obligations and rights for States Parties. In some States Parties, implementation of the IHR (2005) may require new or modified legislation. Even if a new or revised legislation may not be specifically required, states may still choose to revise some regulations or other instruments in order to facilitate IHR implementation and maintenance in a more effective manner. Implementing legislation could serve to institutionalize and strengthen the role of IHR (2005) and operations within the State Party. It can also facilitate coordination among the different entities involved in their implementation. See detailed guidance on IHR (2005) implementation in national legislation at http://www.who.int/ihr/legal_issues/legislation/en/index.html. In addition, policies that identify national structures and responsibilities as well as the allocation of adequate financial resources are also important.

> **Target**
>
> *Adequate legal framework for States Parties to support and enable the implementation of all their obligations, and rights to comply with and implement the IHR (2005). New or modified legislation in some States Parties for implementation of the IHR (2005). Where new or revised legislation may not be specifically required under the State Party's legal system, States may revise some legislation, regulations or other instruments in order to facilitate their implementation and maintenance in a more efficient, effective or beneficial manner. States Parties ensure provision of adequate funding for IHR implementation through the national budget or other mechanism.*

Uganda level of capabilities

Uganda has conducted an assessment of the country's existing national legislation and policies governing public health surveillance and response, including the Public Health Act and the Animal Diseases control Act. Uganda also has in place cross-border agreements dealing with health. The Office of the Prime Minister together with the Public Health Emergency Operations Center (PHEOC) at Ministry of Health are coordinating the legal and regulatory frameworks between sectors.

IHR district activities are supported at the district level through a decentralized approach in the country.

According to the Public Finance Management Act of 2015, 3.5% of the national budget is reserved for emergencies which can be operationalized relatively quickly when needed.

Recommendations for priority actions

- Expedite the comprehensive review of existing laws (Public Health Act; Animal Diseases Control Act; Food Safety) to be in line with IHR 2005 and strengthen implementation of existing relevant laws

- Establish an emergency fund readily accessible to support all relevant sectors to carry out immediate investigation of outbreaks, including the Zoonotic Diseases Coordination Office (ZDCO) and the One Health (OH) platform, to effectively carry out their roles in multisectoral support for OH implementation

- Government may negotiate access to the World Bank pandemic financing facility and other regional funding mechanisms

- National IHR and OIE focal Points should be allocated a budget line within the Ministry of Health and Ministry of Agriculture, Animal Industries and Fisheries budget to run IHR functions - advocacy should be carried with Ministry of Finance on the need for emergency funding to all sectors

- Develop an IHR advocacy and funding strategy, and conduct high level advocacy with parliament, the Ministry of Finance, and decision makers, for increase government funding to support IHR implementation and emergency funding to all relevant sectors

Indicators and scores

P.1.1 Legislation, laws, regulations, administrative requirements, policies or other government instruments in place are sufficient for implementation of IHR (2005) – Score 3

Strengths/best practices

- Uganda has considerable legislation, regulations, administrative requirements, other governmental instruments governing public health surveillance and response in place, including the Public Health Act and the Animal Disease Act.

- There are health related cross-border agreements including the East African Community Protocol on Health and the Southern African Development Community Protocol on Health (1999).

Areas that need strengthening and challenges

- Many key legislative acts and guidance policies pre-date IHR and need to be updated

- To fully meet the capacity requirements for Demonstrated and Sustainable Capacity, Uganda needs to ensure policies are in place within the national health sector plan (NHSP) and the Agriculture Sector Strategic Plan to facilitate IHR NFP core and optional functions

- Senior officials in different government departments and the private sector are not well sensitized about IHR and Integrated Diseases Surveillance and Response (IDSR).

P.1.2 The State can demonstrate that it has adjusted and aligned its domestic legislation, policies and administrative arrangements to enable compliance with the IHR (2005) – Score 3

Strengths/best practices

- Uganda has completed a comprehensive assessment of 47 legislation, regulation and administrative policies to determine if they facilitate full implementation of the IHR.

- A number of policies have already been reviewed and revised.

Areas that need strengthening and challenges

- Review of existing laws need to be expedited (Public Health Act; Animal Diseases Control Act, Food Safety) to be in line with the IHR.

P.1.3 Financing[2][i] is available for the implementation of IHR capacities - Score 2

Strengths/best practices

- A budgetary allocation or substantial external financing[ii] is made for some of the relevant sectors[iii] and their respective Ministries[iv] to support the implementation of the IHR capacities for biological[v] hazards at the national level.

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2   Financing refers to funds and resources identified, allocated, distributed and executed on activities and interventions. It does not take into account costing or identifying how many resources or funds are necessary for the implementation of activities or interventions

i   Financing refers to funds and resources identified, allocated, distributed and executed on activities and interventions. It does not take into account costing or identifying how many resources or funds are necessary for the implementation of activities or interventions

ii   Financing from non-domestic sources towards the implementation of IHR capacities whose amounts make up a majority of national financing for emergency preparedness, detection, and response

iii   The agriculture, animal health, and human health sectors, as well as other sectors whose activities contribute to the implementation of IHR capacities

iv   A government body, mainly Ministries at the national level, but which could include other spending agencies, who have specific yearly public appropriations or budgets,

v   Comprises infectious disease events, including zoonotic and food safety events

- There is a budgetary allocation for supporting IHR capacities like surveillance, laboratory activities and some preparedness activities. The National IHR focal point is supported though the budget is small. MoH is supported by partners in preparedness activities.

Areas that need strengthening and challenges

- The IHR and OIE focal points do not have a budget to carry out their functions

- There is no sustained financial support for the multisectoral One Health approach in responding to PHEs of zoonotic origin

- The One Health coordination body ZDCO is not supported financially to carry out its roles and responsibilities

- Funding mechanisms need to be developed such as access to the World Bank Pandemic Financing facility and other regional funding options

- Not all relevant ministries have a budget line in place for activities related to response to public health and animal health emergencies

P. 1.4. A financing mechanism and funds are available for the timely response[vi] to public health emergencies[vii] – Score: 1

Strengths/best practices

- There exists an emergency medical countermeasures (MCM) and supplies fund, positioned at the National Medical Stores

- There exists good will from development partners to support investigation and response to public and animal health emergencies

- Rapid Response Teams (RRT) can be quickly deployed to the field to respond to an emergency and facilitation funds are rapidly available to support the personnel.

- There is a 3.5% budget allocation from the Ministry of Finance for the health sector for emergencies.

Areas that need strengthening and challenges

- Financing for responding to public and animal health emergencies is not readily available or sufficient and funds are allocated and distributed in an ad-hoc manner during PHEs

- There are no formal government financial mechanism in place to support multisectoral response to relevant PHEs - the support is ad hoc from the MoH during the response to an emergency, the deployment of RRTs is mainly from the MoH; there is limited support from the MAAIF.

- The limited existing funds for emergency response are from donors

- Even if the National Medical Stores (NMS) has a budget for MCM, this is typically not enough for response to large-scale emergencies.

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vi Funding, and a financing mechanism, for responding to a public health emergencies, focusing on providing resources to facilitate the surge capacity of the health system and the deployment of interventions that go beyond the routine structure of the health system. This could include legislation in place such as a public health act and state emergency act

vii through a set of triggers that declare a situation as a public health emergency, as defined by the country

IHR coordination, communication and advocacy

Introduction

The effective implementation of the IHR requires multisectoral/multidisciplinary approaches through national partnerships for efficient alert and response systems. Coordination of nationwide resources, including the designation of a national IHR focal point, which is a national centre for IHR communications, is a key requisite for IHR implementation.

Target

Multisectoral/multidisciplinary approaches through national partnerships that allow efficient, alert and responsive systems for effective implementation of the IHR (2005). Coordinate nationwide resources, including sustainable functioning of a national IHR focal point – a national centre for IHR (2005) communications which is a key requisite for IHR (2005) implementation – that is accessible at all times. States Parties provide WHO with contact details of national IHR focal points, continuously update and annually confirm them.

Uganda level of capabilities

The country has established the IHR National Focal Point (NFP), to which four new members have been appointed from the MoH and a National OIE Focal Point in MAAIF. They carry out coordination with relevant ministries on events that may constitute a public and animal health threat or risk of national or international concern.

The NFPs are designated in the MoH and MAAIF in the National Disease Control (NDC) and Animal Health Departments respectively. The offices are accessible 24/7 by telephone and e-mail, and notifies WHO and OIE in a timely manner of pertinent events.

The PHEOC informs the IHR NFP of every alert and receives all reports from the National and District Rapid Response Teams.

A functional mechanism for inter-sectorial collaboration exists and is operated through the incident command system, which includes animal and human health surveillance during response to an event.

Recommendations for priority actions

- The MoH, working with key stakeholders, should revive the IHR NFP with effective representation of other sectors

- The MoH and MAAIF should develop Terms of Reference (TORs) and Standard Operating Procedures (SOP) that will guide the National IHR and OIE focal points.

- Re-orient the relevant IHR focal point and hazard focal point from other sectors on their IHR Roles and Obligations.

Indicators and scores

P.2.1 A functional mechanism established for the coordination and integration of relevant sectors in the implementation of IHR – Score 2

Strengths/best practices

- There is a functional mechanism for inter-sectorial collaboration through the National One Health Platform.

- During public health events, the IHR and OIE NFPs works with the chair of the National Task Force (NTF) to produce and issue press releases to the public

- The country used the Yellow Fever After Action Review (AAR) to incorporate lessons learnt regarding multi-sectorial, multidisciplinary coordination communication mechanisms

- Coordination and communication mechanisms were tested in a drill in January 2017, after which an improvement plan was developed.

Areas that need strengthening and challenges

- The animal sector does not yet have a real-time reporting system

- The ZDCO needs formal funding mechanisms to strengthen the office to deliver on its mandate

- The new NFP is not yet trained in his functions

- Stakeholders need to be sensitized on their role to strengthen coordination mechanisms.

Antimicrobial resistance

Introduction

Bacteria and other microbes evolve in response to their environment and inevitably develop mechanisms to resist being killed by antimicrobial agents. For many decades, the problem was manageable as the growth of resistance was slow and the pharmaceutical industry continued to create new antibiotics.

Over the past decade, however, this problem has become a crisis. Antimicrobial resistance (AMR) is evolving at an alarming rate and is outpacing the development of new countermeasures capable of thwarting infections in humans. This situation threatens patient care, economic growth, public health, agriculture, economic security and national security.

Target

Support work coordinated by FAO, OIE and WHO to develop an integrated global package of activities to combat antimicrobial resistance, spanning human, animal, agricultural, food and environmental aspects (i.e. a One Health approach). Each country has: (i) its own national comprehensive plan to combat antimicrobial resistance; (ii) strengthened surveillance and laboratory capacity at the national and international levels following international standards developed as per the framework of the Global Action Plan; and (iii) improved conservation of existing treatments and collaboration to support the sustainable development of new antibiotics, alternative treatments, preventive measures and rapid point-of-care diagnostics, including systems to preserve new antibiotics.

Uganda level of capabilities

The Republic of Uganda has in place a National Strategy for Antimicrobial Resistance and an Antimicrobial Resistance Surveillance Plan (2017 – 2022) which incorporates a multisectoral approach toward combating AMR.

Uganda has 25 health facilities and institutions performing Antimicrobial Susceptibility Testing towards all IHR priority AMR Pathogens and national priority AMR pathogens such as Mycobacterium tuberculosis. The testing laboratories undergo external quality assurance under the Uganda National Health Laboratory Services (UNHLS). UNHLS is assessed through an external Quality Assurance programme with the National Health Laboratory Services in South Africa. There are two veterinary laboratories that conduct antimicrobial susceptibility testing for animal health. Reports from animal health are paper based and sent to the National Animal Disease Diagnostic and Epidemiology Center (NADDEC) on a monthly basis.

Surveillance data from the human health sector are entered into the National Health Information System and reports are uploaded onto the WHO Global Antimicrobial Resistance Surveillance System (GLASS). The human health sector has a well-established specimen referral system from lower level facilities to AMR testing facilities. Bacterial AMR surveillance is currently done at eight sentinel sites for Acute Febrile Illness (AFI) from hospitalized children. The system for surveillance, specimen collection and testing of antimicrobial residues in animal products from the farm to the National Animal Disease Diagnostic and Epidemiology Centre Laboratory is not yet established in the country.

Uganda has National Infection Prevention and Control (IPC) guidelines (2013) in place. IPC committees are established at tertiary health facilities. Isolation units are available in 16 referral hospitals. Vaccination of health care workers against Hepatitis B is practiced.

Antibiotic Stewardship is informed by several documents including the National Treatment Guidelines, the National Drug Policy and the National Clinical Guidelines. The National Drug Policy and Authority Act clearly classifies Antibiotics as Controlled drugs. A survey on proper use of antimicrobials has been implemented in six regional referral hospitals. Therapeutic Committees with the appropriate training in Antimicrobial Stewardship are situated in six Regional Referral Hospitals. The implementation of a Supervision Performance Assessment and Recognition Strategy (SPARS) in 112 districts monitors prescribing practices in the human health sector.

However, strengths in this technical area are higher in the human health sector than in the animal, food and environmental health sectors. Multi-sectorial coordination and collaborative mechanisms need to be enforced to achieve the integrated approach that is required to effectively control AMR. Surveillance in the animal health sector does not include AMR priority pathogens of public health interest. Policies and Acts in the human health Sector need reviewing and updating, a process that is on-going. However, there is a lack of supporting policies and guidelines from the animal, food and environmental health sectors.

Recommendations for priority actions

- Develop a clear implementation plan for the National AMR Action Plan with Monitoring and Evaluation (M&E) indicators and clear timelines for Human, Animal, Food, Plant and Environmental Health Sectors

- Update the AMR Surveillance Plan to include zoonotic pathogens and M&E indicators to assess quality of data reported

- Strengthen the capacity of MAAIF with human resource, equipment and direct budget allocation to develop a system of surveillance, sample collection and testing for AMR in animal products from the farm to the National Animal Disease Diagnostic and Epidemiology Centre Laboratory

Indicators and scores

P.3.1 Antimicrobial resistance detection – Score 2

Strengths/best practices

- The UNHLS utilizes additional capacities and capabilities in academic and research institutions to strengthen AMR Surveillance in the country.

- Laboratories are part of external quality assurance programs

- All IHR AMR priority pathogens are detected in country

- The National Strategy for AMR is in place

- The National Animal Health Sector does not capture AMR reports in the monthly reports from the District to the National Level.

Areas which need strengthening and challenges

- The strengths in this technical area are mostly for the human health sector

- Capacities within the animal, plant and environmental health sector need to be better assessed

- The National Animal health surveillance does not include AMR pathogens of public health interest

P.3.2 Surveillance of infections caused by antimicrobial-resistant pathogens – Score 2

Strengths/best practices

- The National AMR Surveillance Plan is in place

- Three regional referral hospital conduct AMR surveillance

- AMR Surveillance sentinel sites have been identified in the human health sector to increase geographical coverage

Areas which need strengthening and challenges

- There is no National Surveillance system for AMR in the animal sector
- There are no farms that have been identified for AMR surveillance
- The food and fisheries sectors do not conduct routine surveillance
- Sharing of data between sectors needs to be implemented

P.3.3 Health care-associated infection (HCAI) prevention and control programmes – Score 3

Strengths/best practices

- National IPC Guidelines are in place and IPC Committees are set up in tertiary hospitals
- Tertiary hospitals have isolation facilities
- Vaccination for Hepatitis B to healthcare workers is practiced

Areas which need strengthening and challenges

- The country does not have a national Health Care Acquired Infections (HCAI) Prevention and Control program in place

P.3.4 Antimicrobial stewardship activities – Score 3

Strengths/best practices

- Several documents cover aspects of Antimicrobial Stewardship to include the Uganda National Antimicrobial Resistance Strategy (2017-2022), National Drugs Policy and National Treatment Guidelines, Uganda Clinical Guidelines (2016), National Pharmaceutical Sector Strategic Plan III (2015 – 2020) and the Uganda National Communication Strategy For Promoting the Rational Use of Medicines (May 2009)
- Surveys on prescribing practices have been conducted in six regional referral hospitals and 112 district facilities.

Areas which need strengthening and challenges

- AMR policies, plans and guidelines in place are inadequately enforced. Enforce existing policies and regulations for antibiotic prescription and use in humans
- Strengthen surveillance of antibiotic use from farm to fork
- Oversee and regulate antibiotic use in animals
- Provide training on antimicrobial stewardship to the concerned sectors

Zoonotic diseases

Introduction

Zoonotic diseases are communicable diseases that can spread between animals and humans. These diseases are caused by viruses, bacteria, parasites and fungi carried by animals, insects or inanimate vectors that aid in pathogen transmission. Approximately 75% of recently emerging infectious diseases affecting humans are of animal origin; and approximately 60% of all human pathogens are zoonotic.

Target

Adopted measured behaviors, policies and/or practices that minimize the transmission of zoonotic diseases from animals into human populations.

Uganda's level of capabilities

Uganda has experienced a number of zoonotic disease events in the very recent past. The country also borders countries like the Democratic Republic of Congo and South Sudan that are considered hotspots for Emerging Infectious Diseases (EIDs) like Ebola and Avian Influenza.

Uganda has a One Health Coordination Office (ZDCO) that coordinates the control and prevention of zoonotic diseases and implementation of the One Health approach. ZDCO was established in November 2016 through a memorandum of understanding between the line ministries responsible for human, livestock, wildlife and environmental health. The One Health coordination office currently operates at national level in close proximity to the PHEOC but with minimal or no coordination or linkage with sub-national level.

The ZDCO is guided by a One Health strategic plan launched with three objectives;

1. Building One Health capacity

2. Preparedness for pandemic threats

3. Control and prevention of priority zoonoses

The ZDCO developed a priority zoonotic disease list in March 2017 in line with the third objective of the strategic plan. The list identifies anthrax, zoonotic influenza viruses, viral haemorrhagic fevers and brucellosis as the top four zoonotic diseases in Uganda.

Although the country's animal health system is devolved with at least 80% of all sub-national administrative units (districts) having one animal health worker, animal health surveillance was identified as the weakest link in zoonotic disease control and prevention. The majority of animal health surveillance system attributes such as data quality, timeliness and sensitivity are currently below set standards.

Recommendations for priority actions

• Develop a national One Health Policy to guide and support implementation of the One Health approach at National and Sub-national Levels. The policy will establish legal/regulatory structures and funding mechanisms for One Health activities at national and sub-national level

• Develop a formal integrated data sharing and joint outbreak response mechanism among various agencies that work on zoonotic events at both national and sub-national levels

- Develop a work plan for formal and systematic training of animal and human health workers on IHR, World Animal Health Organization's Performance of Veterinary Services (PVS) pathway, the One Health Approach and joint surveillance, detection and response.

- To strengthen surveillance for zoonotic diseases and events by evaluating the existing surveillance systems to guide the development of an effective and efficient surveillance system that is able to timely detect and respond to at least 80% of all zoonotic events

Indicators and scores

P.4.1 Surveillance systems in place for priority zoonotic diseases/pathogens – Score 2

*caveat: Whereas an animal health surveillance system exists, the country team reported the system's attributes perform very poorly. There are substantial challenges with reporting rates, data quality, timeliness and sensitivity.

Strengths/best practices

- Establishment of a One Health coordination office

- Existence of a One Health strategic plan

- Functional human health surveillance system

- A zoonotic disease priority list developed through a collaborative decision making process

Areas which need strengthening and challenges

- Weak surveillance and response system in the animal health sector

- Lack of a formal data sharing structures and protocols at national and sub-national levels.

- Lack of formal zoonotic disease control and prevention coordination structures at sub-national levels.

P.4.2 Veterinary or animal health workforce – Score 3

Strengths/best practices

- Uganda has a Field Epidemiology and Training Program that incorporates veterinarians

- There are in-country veterinary tertiary institutions to train animal health workers

Areas which need strengthening and challenges

- Formal sustained on-job training programs on IHR, PVS, surveillance and the One Health system should be developed. Currently, most of the training programs are ad-hoc and donor support dependent.

- Animal health workforce ratio and distribution are not as per set standards

P.4.3 Mechanisms for responding to infectious and potential zoonotic diseases established and functional – Score 2

Strengths/best practices

- Existence of a multi-sectorial One Health office that is linked to the Uganda MoH Public Health Emergency Operations Centre

- Existence of diagnostic laboratory capacity for all top four priority zoonotic diseases.

Areas which need strengthening and challenges

- Strengthen animal surveillance system for early detection of zoonotic diseases and events. This can be done based on an evaluation of the existing system

- Need for structured and systematic training of multisectoral RRTs at sub-national levels
- Coordination between human and animal health not fully optimised at sub-national levels
- There is a need to develop multisectoral contingency plans for the top four zoonotic diseases

Food safety

Introduction

Food and water-borne diarrhoeal diseases are leading causes of illness and death, particularly in less developed countries. The rapid globalization of food production and trade has increased the potential likelihood of international incidents involving contaminated food. The identification of the source of an outbreak and its containment is critical for control. Risk management capacity with regard to control throughout the food chain continuum must be developed. If epidemiological analysis identifies food as the source of an event, based on a risk assessment, suitable risk management options that ensure the prevention of human cases (or further cases) need to be put in place.

Target

Surveillance and response capacity among States Parties for food- and water-borne disease risks or events by strengthening effective communication and collaboration among the sectors responsible for food safety, and safe water and sanitation.

Uganda level of capabilities

Uganda has in place many of the elements needed to respond to outbreaks of foodborne diseases in place. The RRTs that will lead an investigation have been identified and trained. Specimen collection guidelines have been produced and designated testing laboratories have been nominated. There is good exchange of information between the public health, animal health and environmental sectors during outbreak investigations.

A number of different ministries and agencies have the responsibility for food safety in the country but the legislation covering the different elements of food safety is fragmented and needs updating. In addition, existing laws and regulations are not always enforced.

There is limited awareness around food safety issues among the population, from the small scale primary producers right through to the consumers. This makes promoting a culture of food safety in the country difficult.

Many elements of a safe food regime are in existence but work remains to be done in the areas of legislation and coordination among the agencies responsible for different aspects of food safety policy and regulation.

Recommendations for priority actions

- Finalize legislation and regulations covering the safe production, distribution and monitoring of food

- Prepare Memoranda of Understanding (MoU) between the different sectors of government contributing to food safety to ensure agreement on the roles and responsibilities of each sector and to create a platform where all food safety players come on board

- Engage the associations of small to medium size enterprises involved in food production, setting food standards, and monitor the compliance of their members, and encourage the development of a rapid alert and response and traceability mechanism

- Promote good agricultural practices on farms based on the best available knowledge so that food leaving the producer is of the highest possible quality.

- Join the International Network of Food Safety Authorities (INFOSAN)

Indicators and scores

P.5.1 Mechanisms for multisectoral collaboration established to ensure rapid response to food safety emergencies and outbreaks of foodborne diseases – Score 2

Strengths/best practices

- Legislation, policies and regulations covering a number of aspects of food production and safety exist

- RRTs that will respond to outbreaks of foodborne diseases have been identified and trained

- Surveillance and response staff know the focal points for food safety, animal health, key laboratories that test clinical and/or food samples

- Mechanisms exist for information exchange during suspected foodborne outbreaks investigations between all those involved in the response

- Institutions currently exist to conduct food safety surveillance such as the Uganda National Bureau of Standards (UNBS), the Water Analysis Department, and the Government Analytical Laboratory (GAL)

- A multisector approach is in place that brings together various agencies working in food safety

Areas which need strengthening and challenges

- Several food safety policies and acts in place are inadequately enforced. Most of the food safety act and regulations need to be reviewed and updated

- Insufficient governmental supervision and a weak national integrated surveillance system on food safety.

- Coordination and linkages within the several departments and sectors concerned with food safety are weak

- There is no national communication mechanism for food safety between all relevant food chain stakeholders (farmers, traders, transporters, processors, consumers)

- Inspection and testing of food products is still centralized and not spread countrywide to the grassroots. This in turn affects time taken to respond

- There are knowledge gaps on food safety across the food chain starting with the primary producers

- Current food safety standards are not sufficiently supported by scientific risk assessments

- There is no national plan to monitor environmental pesticide residue

- There is a lack of food safety awareness at the level of the consumer resulting in little consumer demand for safe food

- Currently there are no formal regulations for surveillance of allergens and food safety pathogens of interest especially from farm to fork along the   food value chains

- The majority of food safety laboratories are not accredited

Biosafety and biosecurity

Introduction

It is vital to work with pathogens in the laboratory to ensure that the global community possesses a robust set of tools – such as drugs, diagnostics, and vaccines – to counter the ever-evolving threat of infectious diseases.

Research with infectious agents is critical for the development and availability of public health and medical tools that are needed to detect, diagnose, recognize and respond to outbreaks of infectious diseases of both natural and deliberate origin. At the same time, the expansion of infrastructure and resources dedicated to work with infectious agents have raised concerns regarding the need to ensure proper biosafety and biosecurity to protect researchers and the community. Biosecurity is important in order to secure infectious agents against those who would deliberately misuse them to harm people, animals, plants or the environment.

Target

A whole-of-government national biosafety and biosecurity system with especially dangerous pathogens identified, held, secured and monitored in a minimal number of facilities according to best practices; biological risk management training and educational outreach conducted to promote a shared culture of responsibility, reduce dual-use risks, mitigate biological proliferation and deliberate use threats, and ensure safe transfer of biological agents; and country-specific biosafety and biosecurity legislation, laboratory licensing and pathogen control measures in place as appropriate.

Uganda's level of capabilities

Uganda has a well-developed base capacity for biosafety and biosecurity, with many elements of an overall biosafety and biosecurity system in place, and many others initiated. National referral laboratories provide supervision and mentoring for biosafety and biosecurity support to laboratories below them in the national laboratory hierarchy; the Allied Health Professional Council regulates laboratories in the private sector. The multi-sectoral National Biosafety Committee of the Uganda National Council for Science and Technology (UNCST) currently reviews applications for research dealing with dangerous pathogens and establishment of new facilities. Institutional Biosafety Committees/Review Boards provide oversight at the institutional level of dangerous pathogen handling practices, and are accredited by the UNCST.

The national referral labs have elaborate pathogen control mechanisms with SOPs and manuals which specify the biosafety and biosecurity practices to follow; however, at the sub-national level, these practices are not as well demonstrated. The National Specimen Transport and Referral Network (NSTRN) has supporting SOPs, and the national PHEOC tracks specimens at each level within this transport system. This capacity does not exist for the animal health sector and remains a gap between the two sectors. All laboratories have designated Biosafety/Biosecurity Officers.

Recommendations for priority actions

- Expedite enactment of the Biosecurity legislation to ensure designation of a national competent authority for biosafety and biosecurity and to develop an implementation plan.

- Develop harmonized national guidelines for licensing and regulation of laboratories across sectors.

- Develop and execute a comprehensive pathogen consolidation plan across sectors.

- Integrate biosafety and biosecurity training into pre-service curricula.

Indicators and scores

P.6.1 Whole-of-government biosafety and biosecurity system in place for human, animal and agriculture facilities – Score 3

Strengths/best practices

- A National Biotechnology and Biosafety Policy has been in place since 2008.

- An initial inventory of select agents in both the human health and animal health sectors has been conducted and is maintained by the UNCST.

- A Laboratory Biosafety/Biosecurity Manual exists that is used by all health facility labs. Biosafety and biosecurity audits, using standardized national audit checklists, are conducted to monitor compliance with this manual; corrective action plans are developed from these audits and used to implement improvement measures.

- Third party assessments are conducted for the national referral labs.

- Rapid Detection Tests are used where available in order to preclude the culturing of dangerous pathogens.

Areas which need strengthening and challenges

- Although legislative language has been finalized, since the legislation has not yet been enacted, it has not been implemented.

- Biosafety and biosecurity regulations to implement legislative mandates do not exist.

- While some consolidation of select agents has taken place, there is no comprehensive pathogen consolidation plan across the sectors.

- Although private sector laboratories require licensing, public sector labs do not. In addition, licensing conditions for safety and security requirements vary.

- Funding to sustain biosafety and biosecurity activities including audits is supported mainly by donor partners.

P.6.2 Biosafety and biosecurity training and practices – Score 3

Strengths/best practices

- A common training curriculum is available within the human health sector and has been harmonized for use by all sectors.

- Biosafety and biosecurity training is received annually by all health lab workers as a national requirement.

- A pool of nationally certified trainers exists.

- Servicing of biosafety cabinets can be done locally; the Ministry of Health has a team that is trained and equipped to perform this function.

Areas which need strengthening and challenges

- The existing annual training program is currently limited to the human health sector.

- Training is dependent on partner investments.

- Biosafety/biosecurity issues are not included in simulation exercises.

Immunization

Introduction

Immunizations are estimated to prevent more than two million deaths a year globally. Immunization is one of the most successful global health interventions and cost-effective ways to save lives and prevent disease.

Target

A national vaccine delivery system – with nationwide reach, effective distributions, access for marginalized populations, adequate cold chain and ongoing quality control – that is able to respond to new disease threats.

Uganda level of capabilities

Uganda passed an immunization law in 2016 and has a National Expanded Program on Immunization (UNEPI) that is aligned to the Global Vaccine Action Plan and the National Health Sector Strategic Plan (HSSP). The immunization program provides vaccines against Tuberculosis, Polio, Diphtheria, Pertussis, Tetanus, Hepatitis B, Haemophilus Influenza, Pneumococcal pneumonia, HPV and Measles. Uganda has an established cold chain system from national to health facility level as well as systems for commodity distribution, procurement and forecasting. Although Uganda's vaccination program includes zoonotic diseases of national concern such as rabies and yellow fever, animal immunization systems, implementation and management still need considerable strengthening.

Recommendations for priority actions

- Increase human and animal health worker capacities in vaccine management at the district level
- Strengthen the cold chain capacity, especially for the animal health sector and in refugee host districts
- Integrate implementation between sectors for immunizations for vaccine-preventable priority zoonotic diseases
- Within six months of this report, develop and initiate implementation of a Ugandan National Immunization plan with milestones that aligns with the global drive to eliminate rabies by 2030.

Indicators and scores

P.7.1 Vaccine coverage (measles) as part of national programme – Score 3

Strengths/best practices

- Vaccine coverage monitoring is done through Vaccine Preventable Diseases (VPD) surveillance, the Uganda Demographic Health Survey (UDHS), DHIS2, coverage surveys, and household surveys
- Measles Containing Vaccine (MCV) and Diphtheria-Tetanus-Pertussis vaccine (DPT) coverage is tracked monthly using DHIS2
- Many agencies are involved in monitoring e.g. Uganda National Expanded Program on Immunization (UNEPI-MoH), DHI-MoH, WHO, UNICEF, the Clinton Health Access Initiative (CHAI), the Uganda Bureau of Statistics (UBOS)
- Incentives are in place to support routine immunization, including:

- ❍ Provision of information about dangers of VPDs
- ❍ Provision of free immunization services
- ❍ Distribution of mosquito nets to mothers at some instances at DPT3
- ❍ Policy to require immunization cards at school entry

- Vaccine coverage is measured:
  - ❍ Monthly and annually- through analysis of DHIS2 data
  - ❍ Every 5 years- UDHS and vaccine coverage survey
  - ❍ Denominator data is obtained from UBOS
  - ❍ Specific support for data gathering- in surveys- through the United Nations International Children's Emergency Fund (UNICEF), WHO and the Global GAVI Alliance; for DHIS2- this is routine work.

Areas which need strengthening and challenges

- Implementation guidance needs to be finalized and utilized to accompany the immunization law that was passed in 2016

- District data on measles and cold chain coverage rates should be regularly reviewed and areas with low coverage should be pressed for improvement to reach coverage targets

- Uganda's Immunization Strategy should include the priority zoonotic diseases in animals including: anthrax, rabies and brucellosis.

- Plans, guidance and implementation are all needed for animal health vaccination for PVD. This will require a lot of sensitization and collaboration with human health.

P.7.2 National vaccine access and delivery – Score 4

Strengths/best practices

- The MoH has inbuilt government structures for commodity distribution and sustainable vaccines supply (NMS and DHS)

- A cold chain system is established from national to local health facility level and cold chain technicians/ assistants are available both at national and district levels

- Health development partners provide a considerable amount of support for immunization delivery

- Vaccine handling has been separated into two layers: National level, handled by NMS, and district level, handled by the district health system

- Vaccines are delivered to district by NMS to the District Vaccine Store (DVS) and from DVS to health facilities

- Supplies quantification are handled by MoH and partners through a Vaccines Management Committee (VMC) which conducts an annual forecasting process that informs the vaccines requirements

- NMS and UNICEF handles procurement.

Areas which need strengthening and challenges

- Lack of qualified cold chain technicians at district level to offer cold chain maintenance and repairs

- Lack of cold chain from lower level to national level in the animal sector

- Management of stock outs arising from the global stock levels needs strengthening

- Influx of refugees causes vaccines stock outs as well as stressing the cold chain capacity.

DETECT

National laboratory system

Introduction

Public health laboratories provide essential services including disease and outbreak detection, emergency response, environmental monitoring and disease surveillance. State and local public health laboratories can serve as a focal point for a national system, through their core functions for human, veterinary and food safety including disease prevention, control and surveillance; integrated data management; reference and specialized testing; laboratory oversight; emergency response; public health research; training and education; and partnerships and communication.

> ### Target
> *Real-time biosurveillance with a national laboratory system and effective modern point-of-care and laboratory-based diagnostics.*

Uganda level of capabilities

The MoH operates nearly 1,500 laboratories in the country. These range from laboratories attached to level III health care facilities at the sub county level up to national referral laboratories. In addition, there are laboratories attached to universities and research institutes that are supporting the public health and animal health sectors. There is also a Government Analytical Laboratory (GAL) that does forensic, DNA and toxicology studies. There is a private laboratory sector consisting of both for-profit and not-for-profit laboratories.

The national-level laboratories in the public health and animal health sectors have the capability to use a wide variety of test platforms to confirm most of the priority pathogens.

To facilitate the processing of specimens from peripheral sites, MoH has designated more than 100 laboratories in regional referral hospitals, general hospitals and higher level health centres as hub laboratories, and is building their capacity. This network facilitates the transport of specimens from health centres within a radius of 20 to 40 km. Currently only five of the hub laboratories are able to perform bacterial cultures.

MAAIF operates a national laboratory (NADDEC) which is supporting the development of seven regional laboratories. The district laboratories in animal sector are not well developed.

The national public health laboratories are accredited to international standards while the national animal health laboratory is planning to apply for accreditation in the future.

Recommendations for priority actions

- Integrate the transportation of animal samples into the human health NSRTN

- Finalize the legislation to create the UNHLS and integrate the NSRTN to ensure sustainability

- Actively share data and information with the various stakeholders preferably through a web-based platform building upon the current system for HIV early infant diagnosis and viral load testing

- Expand licensing and appropriate quality management systems including proficiency testing to all public health laboratories and private laboratories and the animal health sector

- Support MAAIF to strengthen capacity to detect neglected zoonotic diseases including rabies in lower level laboratory and central level.

Indicators and scores

D.1.1 Laboratory testing for detection of priority diseases – Score 4

Strengths/best practices

- There are four well established national referral laboratories Uganda Virus Research Institute (UVRI), the National Tuberculosis Reference Laboratory (NTRL), the Central Public Health Laboratories (CPHL), and the National Animal Disease Diagnostic and Epidemiological Center (NADDEC)

- The national reference laboratories are well equipped to quickly detect diseases of concern in both the human and livestock/wildlife sectors using a wide range of diagnostic platforms

Areas which need strengthening and challenges

- Much of the capacity for laboratory testing at the national level is dependent on external support from development partners and is yet to be fully supported by the national government.

D.1.2 Specimen referral and transport system – Score 3

Strengths/best practices

- Existence of a good national health laboratory specimen referral system through Health Centers III and IV, General Hospitals, Regional Referral Hospital laboratories, National Referral Hospital Laboratories and National Reference Laboratories. This well-developed national specimen referral system for human specimens is functional from any part of the country.

Areas which need strengthening and challenges

- Lack of a specimen referral system in the animal sector; animal specimens are collected by the veterinarian or the farmer and they have to pay for sending them for testing

- The national specimen referral system for human specimens is mainly supported by the US President's Emergency Plan for AIDS Relief (PEPFAR) and other partners.

D.1.3 Effective modern point-of-care and laboratory-based diagnostics – Score 3

Strengths/best practices

- Tiered testing regimes are in place for public health laboratories

- Rapid tests for HIV and malaria are available in most laboratories

- Microscopy for malaria and acid-fast bacilli are widely available.

Areas which need strengthening and challenges

- Bacterial culture is currently available only in five hub public health laboratories

- The district and regional animal health laboratory system is not fully functional.

D.1.4 Laboratory quality system – Score 3

Strengths/best practices

- A good system of laboratory equipment servicing and maintenance is available in the human sector

DETECT

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- There is an established External Quality Assessment (EQA) program for national referral laboratories in the human sector as well as GAL

- The national public health referral laboratories are accredited to international standards.

Areas which need strengthening and challenges

- Licensing requirements don't currently include implementing a quality management system

- Participation in proficiency testing schemes is voluntary for the private sector

- There is currently no national system for licensing animal health laboratories.

Real-time surveillance

Introduction

The purpose of real-time surveillance is to advance the safety, security and resilience of the nation by leading an integrated biosurveillance effort that facilitates early warning and situational awareness of biological events.

Target

Strengthened foundational indicator- and event-based surveillance systems that are able to detect events of significance for public health, animal health and health security; improved communication and collaboration across sectors and between sub-national, national and international levels of authority regarding surveillance of events of public health significance; improved country and intermediate level regional capacity to analyse and link data from and between strengthened, real-time surveillance systems, including interoperable, interconnected electronic reporting systems. This would include epidemiologic, clinical, laboratory, environmental testing, product safety and quality and bioinformatics data; and advancement in fulfilling the core capacity requirements for surveillance in accordance with the IHR and OIE standards.

Uganda level of capabilities

Uganda has developed considerable capacity in surveillance, particularly in the human health sector. Capabilities and accomplishments include an Early Warning System (EWS). Uganda has a list of notifiable diseases for both animal and human health at all levels used from community to national level and sources used for Indicator Based Surveillance (IBS) and Event Based Surveillance (EBS) for both human and animal are well established. Public health staff are trained in the national Integrated Diseases Surveillance and Response (IDSR) and reporting and feedback mechanisms exist for both human and animal health.

Recommendations for priority actions

- Strengthen human health surveillance systems at all levels to ensure they are electronic, interoperable and interconnected with laboratory and animal health surveillance data

- Strengthen animal health surveillance and develop an electronic surveillance system at the national and sub-national levels that includes routine review of animal health surveillance data to identify and address reporting, analysis and feedback gaps

- Promote use of surveillance data at all levels to enhance early detection and response and to improve reporting rates, timeliness, and data quality for animal and human health sectors

- Establish surveillance for environmental factors, chemical events, food safety, and radiation emergencies & at the POEs

Indicators and scores

D.2.1 Indicator- and event-based surveillance systems – Score 4

Strengths/best practices

- EWS for the MoH includes weekly EPI bulletins, alert system, toll-free lines and for MAAIF. It includes passive surveillance data from districts reported to national level on a monthly basis

- List of notifiable diseases both animal and human are used at all levels from community to national level

- Sources used for IBS and EBS for human are well established such as anonymous reports, Community Based Diseases Surveillance, mTrac, DHIS2, eHMIS while MAAIF relies on the Event mobile application system in 17 districts and anonymous reports

- Data validation rules set in the MoH eHMIS, and the MAAIF Event mobile application system in 17 districts enable quality of data.

- Quarterly Data Quality Assessments (DQA's) performed in all regions by the MoH. DVOs verify data for animal surveillance before sending it to the national level.

Areas which need strengthening and challenges

- Animal health surveillance is much weaker than human health surveillance. Although both indicator and event-based animal health surveillance systems exist, reporting is inconsistent with less than half (55%) of districts submitting animal health data.

- In addition, mobile phone app usage for the animal sector reporting is only at about 20%

D.2.2 Interoperable, interconnected, electronic real-time reporting system – Score 3

Strengths/best practices

- Uganda has in place interoperable and inter-connected electronic reporting for human health and can share data in real time for this sector.

- Uganda has integration amongst a number of surveillance systems

Areas which need strengthening and challenges

- Uganda does not have in place interoperable and inter-connected electronic reporting for animal health and cannot share data in real time

- MAAIF: Event-based mobile application for animal health surveillance has not yet been rolled out in 99 districts representing 85% of the country

- Laboratory data cannot be linked through an interoperable inter-connected electronic system.

- Data utilization and analysis remains a challenge especially in the animal sector

- Uganda needs to identify platforms for data integration that are accessible to stakeholders across the health system

- The surveillance system is not fully sustained by the Ugandan government.

D.2.3 Integration and analysis of surveillance data – Score 3

Strengths/best practices

- Annual and monthly reporting analysis occurs for the human health sector but not for the animal health sector.

- Regular analysis is done at district and national level for human health and not for the animal sector.

Areas which need strengthening and challenges

- The linkages (between local and national) do not exist for animal health but the system is stronger for human health.

- There is a need to build capacity for data collection, dissemination, analysis and usage of animal health data from the districts to the centre. MoH and MAAIF will do this in partnership to leverage relative strengths in the human health sector.

- Data validation rules are not well communicated from MoH to the district and health facilities.

- Also for, DQAs need to be conducted by MoH more regularly and more vigorously to ensure a clean data record.

- Data analysis needs to be conducted and communicated more regularly for the animal health sector as well.

D.2.4 Syndromic surveillance systems – Score 3

Strengths/best practices

- Public health staff are trained in the national IDSR and PVS and focal persons have been appointed for all regions

- In late 2016, cholera and measles outbreaks were picked up by these systems, providing evidence of their strength

- Uganda has an excellent Acute Febrile Illness (AFI) flagship pilot which is helping to develop new SOPs and guidance for syndromic surveillance.

- Areas which need strengthening and challenges

- The animal health sector is less well developed in this area:

    MAAIF – currently has incomplete and under reporting of animal health diseases through passive surveillance which has an approximate reporting rate of 27%.

DETECT

Reporting

Introduction

Health threats at the human–animal–ecosystem interface have increased over the past decades, as pathogens continue to evolve and adapt to new hosts and environments, imposing a burden on human and animal health systems. Collaborative multidisciplinary reporting on the health of humans, animals and ecosystems reduces the risk of diseases at the interfaces between them.

Target

Timely and accurate disease reporting according to WHO and OIE requirements and consistent coordination with FAO .

Uganda level of capabilities

The country has developed a comprehensive system for efficient reporting to WHO and OIE. SOPs/guidelines for reporting to OIE and WHO are available. What needs to be further developed is the ability to report in a timeline (within 24 hours) to the OIE, which is currently delayed by laboratory confirmation. There is also a need to provide the necessary facilitation to enable the IHR/OIE focal point/office to perform their duties.

The One Health Platform ensures that the IHR NFP and OIE contact points exchange information when needed.

Several reporting systems are in place; in human health the HMIS reporting forms available nationally (e.g 033b, 105, 108, Case based reporting forms). An electronic reporting module exists through eHMIS (DHIS2, mTrac, alert system, CBDS, among others). In animal sector a standard monthly reporting format exists and is used in all districts in addition to the event mobile application which is used in 17 districts and this enhances real time surveillance. NTF and District Task Force (DTF) platforms exist for making decisions on reporting to public health, animal health and security authorities during a PHE through the PHEOC and Commissioner Animal Health, a multilateral regional/inter-state reporting system exists through the East Africa Community (EAC) Electronic Management Information System (eHMIS).

Although reporting systems are in place, the country faces challenges to achieve reporting rates within both human and animal surveillance systems. (MoH: approx. 79%; MAAIF: approx. 27%)

Recommendations for priority actions

- Strengthen surveillance and reporting systems for both human and animal health with a special attention to the private sector to achieve ≥80% reporting rates in both the public and private sectors.

- Strengthen coordination between all relevant actors and ensure electronic reporting systems that are interoperable and interconnected for animal health, human health and food safety surveillance.

- Provide the necessary facilitation to enable the IHR/OIE focal points to perform their duties.

Indicators and scores

D.3.1 System for efficient reporting to FAO, OIE and WHO – Score 3

Strengths/best practices

- The ZDCO was established in order to bring together the One Health actors under one umbrella and ensure that MoH and MAIF exchange information and coordinate their actions in case of zoonotic diseases investigations and responses. . This is a good structure to enable coordinated messages in the reporting

- SOP/guidelines for reporting to OIE and WHO are available.

- Reports are received from the community level through the district level then passed on to the national then forwarded to WHO, AU-IBAR and OIE.

Areas which need strengthening and challenges

- The office of the IHR and OIE National Focal Points need training, funding, and equipment in order to enhance capacity.

D.3.2 Reporting network and protocols in country – Score 3

Strengths/best practices

- The country's system to identify and report on a potential Public Health Emergency of International Concern (PHEIC) was tested in January 2017 with an outbreak of avian flu. The event was identified through the National One Health platform and was reported to WHO and OIE respectively.

Areas which need strengthening and challenges

- The country struggles to achieve reporting rates within both human and animal surveillance systems. (MoH: approx. 79%; MAAIF: approx. 27%)

- Capacity building needs to be strengthened at sub national level to support reporting, especially in the animal sector where the reporting rate is still very low

DETECT

Workforce development

Introduction

Workforce development is important in order to develop a sustainable public health system over time by developing and maintaining a highly qualified public health workforce with appropriate technical training, scientific skills and subject-matter expertise.

Target

States Parties with skilled and competent health personnel for sustainable and functional public health surveillance and response at all levels of the animal and health system and the effective implementation of the IHR (2005) and PVS (2010).

Uganda level of capabilities

Uganda has a strong capability in training staff for public health including a robust FETP program and the private and public sectors providing Masters and clinical epidemiology modules which target both human and veterinary officers. Uganda's Public Health Fellowship Programme (PHFP) offers advanced epidemiology and targets human health officers, nurses, veterinary, environment, public health cadres. There is a One Health Central and East African Consortium (OHCEA) that focusses on multiple cadres and sectors, including Nurses as well as Animal Health, Environmental and Public Health staff.

Uganda has 116 districts which include a Public Health and Veterinary Officer in each districts. In addition the public sector has a Biostatistician, Health Centre IV Health Sub-District (HSD) Supervisor and Lab & Surveillance Focal Persons in each district.

Recommendations for priority actions

- Develop harmonized national epidemiology curriculum through FETP for in-service training
- Promote and expand FETP training to include more cadres and sectors (including para-veterinarians, veterinarians, nurses, laboratorians and others)
- Building on current personnel tracking systems, conduct comprehensive human resource mapping and maintain a database for human and animal health sectors that includes respective duty stations
- Establish a funding mechanism for the proposed Uganda National Institute of Public Health (NIPH) and career path opportunities for epidemiologists
- Evaluate effectiveness of training and its impact on improving Uganda's capacity to prevent, detect, and respond to public health threats.

Indicators and scores

D.4.1 Human resources available to implement IHR core capacity requirements – Score 3

Strengths/best practices
- There is a district task force which is multi-disciplinary and multi-sectoral.
- Standard reporting electronic and manual platforms for epidemiologists exist at national and local levels through:
  - DHIS2 (human health)

- ○ mTrac (human health)
- ○ Phone calls through toll free lines (human and animal health)
- ○ Monthly reports through emails (animal health)
- Uganda has over 175 trained epidemiologists which exceeds the JEE target
- Uganda also has multi-disciplinary teams organized through national and district task forces and response teams.

Areas which need strengthening and challenges

- The One Health approach to workforce is not yet operational or even well-understood in some districts; national level strengthening of One Health workforce approach is also needed
- Staff attrition is a concern across all sectors of the national public health system: aging employees, staff departures, and "brain drain"
- Nurses and para-veterinarians are not included in Frontline FETP Training programmes unless they are designated as the district surveillance Focal Person.

D.4.2 FETP or other applied epidemiology training programme in place – Score 4

Strengths/best practices

- Variety of education and training courses are available at all levels from diploma to post graduate
- Uganda has integrated veterinarians into FETP which provides not only training but an opportunity for cross sector bonding.
- A Field Epidemiology Training Program exists and covers the following three levels:

   Basic
   - ○ Integrated Disease Surveillance and Response (IDSR)
   - ○ District Level Epidemiology Training Program (DLETP)
   - ○ Frontline FETP
   - ○ National and Regional Rapid Response Training

   Intermediate
   - ○ Masters in Public Health (MPH)

   Advanced FETP – 2 year postgraduate field training

Areas which need strengthening and challenges

- No fully functional Epi Network for epidemiologists or a central registry exists: there is a need to strengthen linkages of trained personnel to population needs
- There is a diverse epidemiology training curriculum and inadequate funding which has resulted in variations of outcomes, effectiveness and impact.

D.4.3 Workforce strategy – Score 3

Strengths/best practices

- Uganda has a high number of trained epidemiologists in human health that exceeds the JEE numeric target.

Areas which need strengthening and challenges

- Uganda has not yet set up sufficient public health training for animal health sector
- Workforce development strategic planning is not done routinely

DETECT

- Much of the training is partner funded

- While the number of trained human health epidemiologists appears adequate it is not clear whether trained staff are well distributed across the country to ensure coverage at the sub-national level

- Uganda can strengthen current systems to conduct comprehensive human resource mapping and maintain a database for human and animal health sectors that includes respective duty stations.

DETECT

RESPOND

Preparedness

Introduction

Preparedness includes the development and maintenance of national, intermediate and community/primary response level public health emergency response plans for relevant biological, chemical, radiological and nuclear hazards. Other components of preparedness include mapping of potential hazards, the identification and maintenances of available resources, including national stockpiles and the capacity to support operations at the intermediate and community/primary response levels during a public health emergency.

> ### Target
> *Development and maintenance of national, intermediate (district) and local/primary level public health emergency response plans for relevant biological, chemical, radiological and nuclear hazards. This covers mapping of potential hazards, identification and maintenance of available resources, including national stockpiles and the capacity to support operations at the intermediate and local/primary levels during a public health emergency.*

Uganda level of capabilities

Uganda has a National Policy for Disaster Preparedness and Management (April, 2011). A national risk assessment was carried out in 2015 that helped to classify and prioritize diseases and other hazards. Risk assessment for hazards in the country was conducted and will be updated every two years. Risk assessments have also been done according to regions and districts. A five-year (2016-2020) National Multi-hazard Preparedness and Response Plan (NMHPR) has been developed with the assistance and under the guidance of WHO. However the JEE team deemed it lacked preparedness and response planning components and was rather a national strategic plan that details high level priority interventions to improve core capacities . The national emergency preparedness and response plan is therefore yet to be developed and will be guided by the WHO guidance document 'National Public Health Emergency Response Plan: A Toolkit for Public Health Authorities'.

Some hazard and contingency plans have also been developed for specific diseases such as Ebola Virus Disease, Red eye Disease, and avian influenza. However, the country is yet to carry out comprehensive resource mapping in line with the identified risks/hazards. A list of health facilities with their capacities is available within the DHIS2. A database of experts, RR Ts, district surveillance coordinators and partners is available within the PHEOC. Information regarding capacity of laboratories is available within UVRI.

RRTs have been constituted at the national and district levels and are given regular training in the public sector. A simulation exercise was done in January 2017 in Luweero District to assess the operational readiness of the National RRTs to respond to disease outbreaks. Uganda has a number of institutions and mechanisms for training field epidemiologists and other frontline staff to prevent, detect, and respond to PHEs.

An emergency budget has been allocated for medicines and other countermeasures at the Ministry of Finance. Framework contracts are defined and available at the National Medical Stores (NMS) and suppliers,

and countermeasures can be purchased within 48 hours on notification in writing from MoH. Capacity exists in the country for logistics (in the NMS) to be transported to all locations in the country within 48 hours. Personal Protective Equipment (PPE) is available at the PHEOC and some have been distributed to all regional hospitals. Chemical PPE and detection equipment is available at NECOC. Most of these activities are partner- or donor-supported.

Recommendations for priority actions

- Revise and update the current national multi-hazard emergency preparedness and response plan to meet IHR core capacity requirements and according to the risk assessment conducted

- Carry out comprehensive resource mapping for emergency response according to the hazard profiles already done.

- Strengthen the capacities in the animal sector to develop and maintain an emergency response system from the districts to the centre

- Expand the scope of the PHEOC handbook to incorporate Concepts of Operation (CONOPs) that will ensure proper management of the Emergency Operations Center including clearly defined structures to facilitate quick access to emergency funds from the Ministry of Finance

Indicators and scores

R.1.1 National multi-hazard public health emergency preparedness and response plan developed and implemented – Score 1

Strengths/best practices

- Risk assessment for hazards has been done at regional and district levels

- A high level multi-hazard strategic plan has been developed which lays foundation for development of national multi-hazard preparedness and response plan

- Presence of partners to support preparedness.

Areas which need strengthening and challenges

- Have in place a NMHPRP, to meet all IHR core capacity requirements and Points of Entry and which covers all phases of an emergency response (i.e. activation, grading, operations and de-escalation). The plan should incorporate preparedness and response plans for all identified hazards/risk and should address IHR core capacities and other hazards

- Clearly articulate and disseminate surge capacity plans and procedures to respond to national and international events of public health concern at all levels (national and sub-national levels).

- Engage relevant stakeholders and document mechanisms for resource mobilization from both traditional and non-traditional sources for response to emergencies. This should indicate processes for activation of, and access to, emergency response funds and supplies, including authorizing officials.

- Implement or institute systems to regularly test the response plan and procedures in actual emergencies or simulation exercises and modify/update as needed.

R.1.2 Priority public health risks and resources mapped and utilized – Score 1

Strengths/best practices

- Risk mapping for hazards has been done according to regions and districts

- Disease risks are classified and prioritized using the Socio Technical Allocation of Resources (STAR) prioritization tool

- The country is able to deploy logistics from the medical stores to all areas within 48 hours

- Some medical items and equipment (PPE) are available for use in emergencies and are stationed at NECOC and PHEOC.

- Some medical supplies and equipment (PPE) are available for use in emergencies.

Areas that need strengthening/challenges

- Carry out comprehensive national mapping of resources (e.g. logistics, human and infrastructure) that includes resources for animal health and agriculture/animal sectors in line with prioritized hazards/risks. This should also cover resources for responding to priority biological, chemical and radiological events. Of importance are the critical stock levels and their location; re-distribution plan; and how gaps will be addressed

- Expand the scope of the PHEOC handbook to incorporate CONOPs that will ensure proper management of the center including clearly defined structures to facilitate quick access to emergency funds from the Ministry of Finance. Develop and disseminate procedures on how the resources will be managed and accessed.

- Institute mechanisms to regularly update the country hazard/risk profile.

RESPOND

Emergency response operations

Introduction

A public health emergency operations centre is a central location for coordinating operational information and resources for strategic management of public health emergencies and emergency exercises. Emergency operations centres provide communication and information tools and services, and a management system during a response to an emergency or emergency exercise. They also provide other essential functions to support decision-making and implementation, coordination and collaboration.

Target

Country with public health emergency operations centre (EOC) functioning according to minimum common standards; maintaining trained, functioning, multisectoral rapid response teams and "real-time" biosurveillance laboratory networks and information systems; as well as trained EOC staff capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency.

Uganda level of capabilities

The MoH established the PHEOC in 2013 to enhance Uganda's capacity to respond to disease outbreaks, natural disasters, bioterrorism and other PHEs.

The PHEOC serves as MoH's focal point for organizing, coordinating, conducting and managing all aspects of public health emergency response efforts utilizing resources in a coordinated, collective, and collaborative manner. The PHEOC reports into the NEOCC within the Office of the Prime Minister (OPM) for incidents requiring national major incident coordination which are broader than health in scope.

The PHEOC is located in close proximity of the MoH in a commercial building within the proposed NP H I. The PHEOC has the capability to support NTF meetings with stakeholders, partners and SME's.

The PHEOC has suitable ICT equipment and access control and a Handbook is available detailing operating procedures.

Uganda needs to develop a CONOPS supported, for example, by an exercise and training strategy to further develop the capability and contribution of the PHEOC.

Recommendations for priority actions

- Define the CONOPS within the PHEOC handbook covering the all hazards approach to emergency response

- Develop a training and exercise strategy for the PHEOC including all relevant sectors

- Agree an investment plan with the Uganda Government for the PHEOC to include participation of MAAIF and other sectors.

- Establish a suitable 'rent free home' for the PHEOC within MoH.

- Review and implement case management guidelines and incorporate all other relevant IHR components.

RESPOND

Indicators and scores

R.2.1 Capacity to activate emergency operations – Score 4

Strengths/best practices

- The EOC has staff dedicated to its operation who have all received training accordingly. They are able to activate a response within two hours, 24/7 and have started to exercise this to test the EOC activation

- The PHEOC has been activated 11 times for level 3 responses, using the Incident Command System (ICS), for different PHEs since 2013

- The PHEOC has 5 permanent, fully trained staff in emergency management and also has capacity for surge staff in case of an emergency.

- The PHEOC has already conducted a functional exercise to test its handbook and the SOP's related to the coordination of an emergency response.

- The PHEOC also participated in the planning and execution of a field-based simulation exercise and a national RRT drill (Feb 2017) to assess the NRRT's capacity to detect, prevent and respond to PHEs.

Areas which need strengthening and challenges

- The funding of the PHEOC is supported by donor aid; there is a need for Government funding to sustain EOC capacity and operations

- Develop an exercise programme to maintain sustainable capacity.

R.2.2 EOC operating procedures and plans – Score 4

Strengths/best practices

- A handbook supported by 19 SOPs is in place and supports the effective functioning of the PHEOC. The EOC handbook describes incident management structures which are formed upon activation for a PHE

- A business continuity plan is in effect which allows continuation of operations in case the EOC is not accessible

- The EOC works with the MoH Epidemiology and Surveillance Division (ESD), FETP and other partners who form the NRRT to quickly support field investigations and response to PHEs.

- The NTF which is focused on responding to PHEs is co-located within the EOC. The task force sits bi-weekly or weekly during outbreaks

- The ZDCO which is focused on ensuring a multisectoral response to PHEs in accordance to the One Health approach is also co-located within the EOC

- The EOC has a database of key stakeholders with different SMEs who can be contacted immediately depending on the nature of the PHE.

- The PHEOC has an e-IDSR (Integrated Disease Surveillance and Response) alerts information system for dispatching information about local and international PHEs as soon as they are validated. This has been demonstrated as active with circa 30 alerts sent out weekly.

Areas which need strengthening and challenges

- The EOC does not have a permanent physical space for carrying out its activities and is located in a rented space.

- The operations of the EOC are funded by partners and not Government funds; plans are underway to include it in the development of the NIPH

- The Business Continuity Plan needs to be tested

- CONOPS needs to be developed to identify roles and responsibilities of all relevant organizations in coordinated large-scale responses to emergencies. This should also include sources of funding and other resources needed.

- SOPs need expanding to include multi-hazard principles e.g. animal health, chemical and radiation.

R.2.3 Emergency operations programme – Score 4

Strengths/best practices

- The PHEOC has conducted field based capacity building for District Rapid Response teams (DRRTs), and has activated a total of 21 districts for GHSA project in the first phase covering priority areas of biosafety/biosecurity, specimen transportation and DHIS2 SMS communication for alerts. Another 18 districts in South and Western Uganda were activated for the second phase using an enhanced Yellow Fever surveillance model. Total districts activated are 39.

- A Tweet deck has been setup for EBS with search columns for outbreaks and specific pathogens/event of public health concern.

- Active Yellow Fever surveillance carried out in 20 districts in 2016

- PHEOC tracks specimens through the NSTRN from different district-based hubs to the national testing hubs, as well as dispatching results through the same system.

Areas which need strengthening and challenges

- Hot debriefs are not carried out for all outbreak responses and this should be completed when the EOC has been deactivated from an emergency.

- Training opportunities for partners such as ZDCO are in place, however this potentially needs to be expanded to other partners.

R.2.4 Case management procedures implemented for IHR relevant hazards – Score 3

Strengths/best practices

- Case management guidelines for other IHR hazards are available at relevant health system levels and SOPs are in place for the management and transportation of Cholera, Marburg, Plague and Ebola suspect cases.

- PHEOC conducts weekly indicator-based surveillance for IHR priority diseases, and refers back to the districts for confirmation

Areas which need strengthening and challenges

- Case management guidelines focus on clinical interventions and need to incorporate all other relevant IHR components.

Linking public health and security authorities

Introduction

Public health emergencies pose special challenges for law enforcement, whether the threat is manmade (e.g. the anthrax terrorist attacks) or naturally occurring (e.g. flu pandemics). In a public health emergency, law enforcement will need to quickly coordinate its response with public health and medical officials.

Target

Country conducts a rapid, multisectoral response in case of a biological event of suspected or confirmed deliberate origin, including the capacity to link public health and law enforcement, and to provide and/or request effective and timely international assistance, such as to investigate alleged use events.

Uganda level of capabilities

Uganda has a draft MoU between the Ministries of Health, Agriculture Animal Industry & Fisheries (MAAIF), Internal Affairs (MIA), Defense and Veteran Affairs (MoDVA), and Security (MoS), which is being used as a working document by the actors. The document is however not finally approved and there are no standard operating procedures in place.

The country is capable of identifying potential biological events or other PHEs that may have deliberate motives, through Intelligence and Counterterrorism forces at the border. Public health experts are involved in emergency response linked to the Biological and Toxins Weapons Convention (BTWC). The MoDVA is the NFP for BTWC and coordinates with other relevant ministries.

Uganda has participated in a simulation exercise within the past year that involves leadership from both public health and security authorities. There have been no joint lower level trainings between the security and Public Health sectors

The Public Health Act allows the GoU to detain/quarantine an individual who presents a public health risk

Recommendations for priority actions

- Finalize and approve the draft multisectoral Linking Public Health and Security Authorities MoU
- Develop multisectoral SOPs and response protocols for various National Chemical, Biological, Radiological, Nuclear and Explosives (CBRNE) incidents
- Conduct joint security and Public Health trainings/simulation exercises at ALL levels.

Indicators and scores

R.3.1 Public health and security authorities (e.g. law enforcement, border control, customs) linked during a suspect or confirmed biological event – Score 2

Strengths/best practices
- Draft MoU between the Ministries of Health, Agriculture, Animal Industry & Fisheries, Internal Affairs, Defense and Veteran Affairs, and Security waiting for approval
- Uganda is capable of identifying potential biological events or other public health events that may have deliberate motives through Intelligence and Counterterrorism capacity at the border

RESPOND

- At the national level, there have been two joint trainings on Linking Public Health with Law Enforcement with support from the CDC.

Areas which need strengthening and challenges

- No joint lower level training between the security and public health sectors.

- No active SOPs or MoUs in place for the coordination of joint response to PHEs and investigations

- There are no regular reports between the public health and security authorities

- Uganda does not have a specific joint investigations curriculum in place to train public health and law enforcement entities on joint investigations.

Medical countermeasures and personnel deployment

Introduction

Medical countermeasures are vital to national security and protect nations from potentially catastrophic infectious disease threats. Investments in medical countermeasures create opportunities to improve overall public health. In addition, it is important to have trained personnel who can be deployed in case of a public health emergency for response.

Target
National framework for transferring (sending and receiving) medical countermeasures, and public health and medical personnel from international partners during PHEs.

Uganda's level of capabilities

Uganda has a well-established national medical store (NMS) and national and regional blood banks. There are a number of draft documents that address both medical countermeasures (MCM) and personnel deployments, but existing documents focus on human health only; animal health issues are absent. Deployments of existing MCM and personnel are under the authority of the Director General of Health Services (DGHS) and the NTF. Uganda has a history of participation in Global Outbreak and Response Network (GOARN) missions, and there is evidence of a number of deployments occurring during past PHEs, most notably during the African Union Support to Ebola Outbreak in West Africa (ASEOWA) mission. Exercises have been conducted, but these have been focused on domestic deployments, not international ones.

Recommendations for priority actions

- Finalize the existing draft national MCM and personnel deployment plans for human health, along with their associated SOPs.

- Assess risks to the animal health sector, develop a national stock of MCM and a roster of response personnel for threats relevant to the animal health sector, and incorporate such materiel and personnel into integrated national MCM stocks and rosters of response personnel.

- Incorporate MCM and personnel deployment into the national public health training and exercise program.

Indicators and scores

R.4.1 System in place for sending and receiving medical countermeasures during a public health emergency – Score 2

Strengths/best practices
- Guidelines are in place to address quality assurance issues associated with receipt of MCM from international sources.

- A dedicated budget exists for the NMS, and an additional national fund for disasters can be accessed as needed for MCM procurement during an emergency.

RESPOND

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- NMS has several operational manuals which guide medical supply procurement, to include provisions for pre-qualification of vendors, use of framework contracts, and emergency procurements.

- Uganda is party to the East African Treaty, which provides for MCM sharing with Kenya and Tanzania.

- Surge staff (NRRT) to handle MCM logistics are available through the national PHEOC.

Areas which need strengthening and challenges

- Although individual hazard-specific response plans address MCM deployment, the national MCM plan is still in draft and has neither been validated through a tabletop exercise (TTX) nor has its performance been tested in a functional exercise

- Although the draft MCM plan contains decision-making procedures, procedures for deployment of MCM in sectors other than health are ad hoc

- Current content of the NMS is not based on a national risk assessment of public health threats; consequently, investments may not be happening for MCM to address all priority threats

- Uganda has previously participated in international MCM procurement agreements, but these are largely facilitated by partners; others are implied in existing partnerships, but are not documented. MCM are often supplied by partners such as WHO, CDC, UNICEF, the African Field Epidemiology Network (AFENET), International Federation of the Red Cross (IFRC), Médecins sans Frontières (MSF), and the Infectious Disease Institute (IDI) at Makerere University during PHEs.

- Provisions for procurement of animal countermeasures are currently lacking.

R.4.2 System in place for sending and receiving health personnel during a public health emergency – Score 2

Strengths/best practices

- The DGHS and the NTF have the authority to appoint personnel and to approve decisions on personnel deployments during emergencies.

- The national PHEOC has a pre-identified a roster of NRRT from which potential deployments can be done. The DAR should pre-identify and develop a roster of animal health personnel for easy deployment during emergencies.

Areas which need strengthening and challenges

- A NRRT plan has been drafted and used to guide training, but the document is not final, has not been validated through a TTX, and applies only to domestic deployments.

- Although a number of hazard-specific plans address personnel deployment, no plan exists which contains criteria to trigger a request for personnel from other countries.

- Although a number of international personnel have entered Uganda for exercises in the past, they have all been observers or evaluators, not personnel deployed as participants in an exercise.

- An SOP for accepting internationally deployed personnel into Uganda does not exist; the existing Public Standing Order of 2010 only contains routine processes for hiring civil servants. No documents exist which address reciprocal licensing, insurance, and liability issues for such personnel to operate within Ugandan territory.

- An SOP for deploying personnel internationally does not exist; the existing Public Standing Order of 2010 provides only routine processes for releasing civil servants for service in international organizations such as the UN. No documents exist which address staff pre-deployment training, equipping, medical readiness, family readiness, and sustainment while operating internationally.

Risk communication

Introduction

Risk communications should be a multilevel and multifaceted process which aims at helping stakeholders define risks, identify hazards, assess vulnerabilities and promote community resilience, thereby promoting the capacity to cope with an unfolding public health emergency. An essential part of risk communication is the dissemination of information to the public about health risks and events, such as disease outbreaks. For any communication about risk caused by a specific event to be effective, the social, religious, cultural, political and economic aspects associated with the event should be taken into account, including the voice of the affected population.

Communications of this kind promote the establishment of appropriate prevention and control action through community-based interventions at individual, family and community levels. Disseminating the information through appropriate channels is essential. Communication partners and stakeholders in the country need to be identified, and functional coordination and communication mechanisms should be established. In addition, the timely release of information and transparency in decision-making are essential for building trust between authorities, populations and partners. Emergency communications plans should be tested and updated as needed.

Target

State Parties use multilevel and multifaceted risk communication capacity. Real-time exchange of information, advice and opinions between experts and officials or people who face a threat or hazard (health or economic or social wellbeing) to their survival, so that informed decisions can be made to mitigate the effects of the threat or hazard and protective and preventive action can be taken. This includes a mix of communication and engagement strategies, such as media and social media communications, mass awareness campaigns, health promotion, social mobilization, stakeholder engagement and community engagement.

Uganda level of capabilities

Risk communication is addressed in the national Multi-hazard Preparedness and Response Plan. At a national level each ministry has a Public Relations Officer (PRO), whilst the MoH has an entire division (Health Promotion and Education). At the sub-national level each district has a district health education officer.

Risk communication activities are coordinated internally through the NECC in the OPM, and the multi-sectoral and multi-disciplinary NTF within MoH and MAAIF. There are shared communication plans and agreements between the response agencies.

The Uganda Media Centre (UMC) is the designated media centre for risk communication during emergencies and outbreaks. Risk communication is coordinated among Civil Society Organisations (CSOs), the private sector and international stakeholders. A communication team dedicated to media and social media outreach is available at MoH and MAAIF, through which rumours and misinformation are addressed. Permanent and surge staff dedicated to risk communication during emergencies are in place.

RESPOND

Recommendations for priority actions

- Develop a national multi-sectoral risk communication strategy and train risk communication personnel to respond effectively during emergencies

- Formulate a national coordination platform that brings together all risk communication stakeholders including private sector and develop standard operating procedures and capacity amongst all partners

- Conduct evaluation campaigns to assess effectiveness of risk communication channels used at the end of every emergency response

- Strengthen feedback mechanisms with communities for effective risk communication.

Indicators and scores

R.5.1 Risk communication systems (plans, mechanisms, etc.) – Score 2

Strengths/best practices

- Permanent and surge staff who are dedicated to risk communication during emergencies are in place

- There are shared communication plans, agreements and/or SOPs between response agencies

- Training is provided to the risk communications personnel for response to all health hazards

- There exists an internal arrangement for the clearance of messages to the public.

Areas which need strengthening and challenges

- Strengthen the plans, SOPs and agreements with all stakeholders

- Although risk communication is included within the national multi-hazards preparedness and response plan, clear triggers need to be developed to bring together multi-sectoral partners

- Training and capacity building is required before emergencies or outbreaks occur to ensure a rapid response.

R.5.2 Internal and partner communication and coordination – Score 4

Strengths/best practices

- Multi-sectoral collaboration is present within the NTF and actively engaged in the country, and all stakeholders acknowledge the expertise and skills of the NTF.

Areas which need strengthening and challenges

- There is a need to carry out further training and conduct simulation exercises at national and district levels to develop a consistent approach across the country for risk communication

- There is a need to build capacity amongst all stakeholders to ensure that partners are able to sustain a response even when key personnel are unavailable

R.5.3 Public communication – Score 4

Strengths/best practices

- Collaborative arrangements are in place with public and private media which guarantees access for the delivery of key risk communication messages

- Risk communication during emergencies and outbreaks is availed to the communities using local languages.

Areas which need strengthening and challenges

- Funding is a challenge where there is a need to develop risk communication materials to support the response to an emergency

- All designated spokespeople need to be trained or oriented in advance of an emergency.

R.5.4 Communication engagement with affected communities – Score 4

Strengths/best practices

- All communication materials are pre-tested by the Behavioural Change Committee (BCC) before being printed and approved for use in the field

- Training is provided to the DRRTs

- Feedback from local communities is achieved via the EBS unit and toll free line at the PHEOC, social media, tweet deck and via the districts

- Refinement of messages has been carried out based on community feedback.

Areas which need strengthening and challenges

- There is a need to evaluate and measure the impact of risk communication activities

- The feedback loop for refinement of public messages needs to be strengthened

Community engagement should be continuous and not restricted to instances when an outbreak or incident occurs.

R.5.5 Dynamic listening and rumour management – Score 3

Strengths/best practices

- Public risk communication messages are translated to local languages, as needed

- EBS includes the use of a tweet deck to maintain real-time situational awareness of events in the country. Should integrate animal health surveillance in the use of tweet deck to facilitate ease of information flow on occurrence of zoonotic diseases in animals before they affect humans to institute prevention measures

Areas which need strengthening and challenges

- Establish targeted programs for engagement with Village Health Teams (VHTs), Community Health Extension Workers (CHEWs) and sub-county veterinary personnel for resilience at the grassroots level

- Feedback mechanisms with the community are not strong enough and need to be strengthened.

RESPOND

OTHER IHR-RELATED HAZARDS AND POINTS OF ENTRY

Points of entry (PoE)

Introduction

All core capacities and potential hazards apply to "points of entry" and thus enable the effective application of health measures to prevent international spread of diseases. States Parties are required to maintain core capacities at designated international airports and ports (and where justified for public health reasons, a State Party may designate ground crossings), which will implement specific public health measures required to manage a variety of public health risks.

> **Target**
>
> *States Parties designate and maintain core capacities at international airports and ports (and where justified for public health reasons, a State Party may designate ground crossings) that implement specific public health measures required to manage a variety of public health risks.*

Uganda level of capabilities

Uganda is a landlocked country with north, west, south and eastern borders which are all highly active.

The main POE activities exist at the Entebbe International Airport (EIA). Other PoEs are at ground crossings and water ports via Lake Victoria.

The EIA has animal health and public health services including diagnostic facilities and a veterinary and public health desk. There is screening at the EIA using a thermal scan for all passengers coming through the PoE. The Veterinary health desk coordinates inspection and certification of the sanitary status of animals and animal products entering and leaving the country. A contingency plan is present and a simulation exercise for a mass casualty event was conducted at the EIA in August 2016. EIA has access to equipment and personnel to transport ill travelers.

MAAIF has a well-structured mechanism at some PoEs with designated staff carrying out surveillance activities on agricultural imports in 7 out of the 24 designated POEs. The country's post offices also have designated MAAIF staff that inspect all parcels containing agricultural and animal products coming into the country.

Despite having taken part in the IHR core capacity assessments, Uganda has no designated PoEs as required under the IHR regulations.

Recommendations for priority actions

- MoH should carry out the process of designation of POEs and implement IHR core capacities at each of them.
- Government should assign a central office for the coordination of POE health services with adequate resources, and should strengthen existing animal health services at POE

- Government should develop a multi-sectoral national contingency plan for multi-sectoral POE IHR core capacity implementation.

- Government through MAAIF should increase the animal and agriculture workforce and logistical support at POE to carry out One Health IHR related activities.

Indicators and scores

PoE.1 Routine capacities established at points of entry – Score 1

Strengths/best practices

- EIA has a multi-hazard public health plan

- Within the EIA there are health facilities and a health desk that receive passengers prior to immigration clearances

- Staff at the airport have been trained on IHR requirements for PoEs

- EIA has joint the Collaborative Arrangement for the Prevention and Management of Public Health Events in Civil Health Aviation (CAPSCA) which assists in the development of plans

- EIA management has set aside a budget specifically to support health services

- MAAIF staff are present in a well-structured system in 7 out of the 24 designated border points aside from the EIA but lack funding to implement to effectively implement inspection and certification services.

Areas which need strengthening and challenges

- Lack of designated POEs as per the IHR guidelines

- Lack of central coordination points for port health services

- Lack of diagnostic material and equipment at all PoEs, both for animal and human sectors

- Lack of routine capacities at major ground crossings

- Inadequate staffing and facilitation in the animal sector in all the 24 POE

PoE.2 Effective public health response at points of entry – Score 1

Strengths/best practices

- A multi service Public Emergency Plan at the EIA is available.

- The Civil Airports Authority (CAA) and the Ministry of Internal Affairs (MIA) and the Uganda National Bureau of Standards (UBOS) have been active in the surveillance of products entering the country

- Active EOC is in place in support of the POE services.

Areas which need strengthening and challenges

- Lack of a disease-specific contingency plan for the ground crossings

- Lack of a central coordination point for water port health services.

- Lack of Human Resources to run the health desks at the ground crossings

- The animal quarantine centers at the EIA have been prioritised for the airport expansion. Due to this, imported suspected animals may not be held for observation.

- No health inspection of conveyances due to the lack of health inspectors assigned this responsibility from the MoH.

- Lack of infrastructure supporting PoE activities in the various ground crossings for both animal and health sectors
- Lack of capacity to monitor eating establishments at the PoEs.
- Lack of personnel in all the 17 POE (70%) in the animal sector

Chemical events

Introduction

Timely detection and effective response of potential chemical risks and/or events require collaboration with other sectors responsible for chemical safety, industries, transportation and safe disposal. This would entail that State Parties need to have surveillance and response capacity to manage chemical risk or events and effective communication and collaboration among the sectors responsible for safety.

> **Target**
>
> *States Parties with surveillance and response capacity for chemical risks or events. This requires effective communication and collaboration among the sectors responsible for chemical safety, industries, transportation and safe disposal.*

Uganda level of capabilities

The Toxic Chemicals Prohibition and Control Act (2016) is enacted and in place. It provides for the establishment of a national authority that liaises between the Organisation for the Prohibition of Chemical Weapons (OPCW) and the GoU in relation to the Chemical Weapons Convention (CWC) and monitoring and management of Toxic Industrial Chemicals (TICs) in Uganda.

Good collaboration exists between National Authority and law enforcement agencies. The NECOC in the OPM is the national coordinating body with regards to prevention and response to chemical events.

A draft National CBRNE Safety policy for Uganda (March 2017) has been developed. Further, agro-chemical regulations implemented by MAAIF – to license and authorize dealing in agro-chemicals - have been established.

The NECOC has some chemical detection equipment as well as some PPE for use in CBRNE incidents.

Recommendations for priority actions

- Develop a national Chemical Emergency Response Plan based on a risk analysis and inventory of chemical stocks within the country
- Develop a national Multisectoral Chemical Response Action Plan, incorporating training and exercising of staff
- Establish a National Focal Point for information sharing and concept of operations for gathering chemical hazard surveillance data from multiple sources
- Enhance laboratory and detection, identification and monitoring capacity for priority chemical threats
- Establish a framework and capacity for the management and transportation of hazardous chemicals.

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Indicators and scores

CE.1 Mechanisms established and functioning for detecting and responding to chemical events or emergencies – Score 2

Strengths/best practices

- Guidelines and legislation are available for the assessment of chemical threats within the country, however limited surveillance and monitoring of chemicals are carried out.

- A poison centre is currently being established at the Directorate of Government Analytical Laboratories (DGAL), which includes capacity for toxicological analysis and will incorporate the provision of clinical advice.

Areas which need strengthening and challenges

- Establish chemical incidents surveillance/monitoring systems to overcome limited information sharing capacities for chemical events in the country

- Establish efficient information sharing among all stakeholders and develop MoUs for laboratory analyses

- Enhance laboratory capacity for systematic data analysis and surveillance

- Improve training across multi-sectoral partners to meet the needs of chemical safety and security management

- Complete a risk profile and chemical inventory in liaison with East African Regional sister countries

- Currently, there are gaps in licensing, monitoring and law enforcement of agrochemicals and generally all toxic industrial chemicals

- Develop MoUs for information sharing and laboratory analysis between the key stakeholders for chemical events

CE.2 Enabling environment in place for management of chemical events – Score 2

Strengths/best practices

- Legislation is in place for the management of high threat chemical agents
- The NECOC is responsible for coordinating and leading the response to chemical events
- The national authority liaises between the OPCW and the GoU in relation to the CWC.
- A policy is under development to respond to oil spills associated with the emerging oil and gas sector

Areas which need strengthening and challenges

- Develop a chemical safety and security strategic plan as well as risk mapping such as inventories of chemicals at industrial sites

- Establish systems for national sentinel surveillance or monitoring for chemical events

- Improve training programme for multi-sectoral partners, including health staff, on chemical events

- Develop MoU for information sharing between multi-sectoral partners for chemical events

- Develop a National Public Health Plan for Chemical Emergencies

- Plan for and conduct educational and public awareness of chemical emergencies/events

- Develop a National Waste Management Plan

Radiation emergencies

Introduction

To counter radiological and nuclear emergencies, timely detection and an effective response towards potential radiological and nuclear hazards/events/emergencies are required in collaboration with sectors responsible for radiation emergency management.

Target

States Parties with surveillance and response capacity for radiological and nuclear hazards/events/ emergencies. This requires effective communication and collaboration among the sectors responsible for radiological and nuclear emergency management.

Uganda level of capabilities

The Nuclear Energy Unit (NEU), established by the Atomic Energy Act No. 24 of 2008, is responsible for promotion and development of nuclear energy in Uganda. The Head of NEU is the International Atomic Energy Agency (IAEA) National Liaison for Uganda.

The Atomic Energy Council (AEC) also established by the Atomic Energy Act No. 24 of 2008, is the regulatory authority with the primary responsibility to regulate the peaceful applications of ionising radiation and the control of the use of radiation in Uganda, for the protection and safety of society and the environment from dangers resulting from ionizing radiation. It also provides for the regulation of the development of nuclear energy for use in power generation in compliance with international safety requirements, and advises government and other agencies on matters within the competence of the Council.

A National Multi-sectoral Radiological Emergency and Response Committee has been set up and includes – the Radiological Emergency Response Committee (RERC), made up of representatives from the Ministry of Energy and Mineral Development (MEMD); Uganda People's Defense Force (UPDF); the Uganda Police Force (UPF); the Atomic Energy Council (AEC); the National Emergency Management Authority (NEMA); the Uganda Red Cross Society (URCS); Uganda Prisons Service (UPS); Ministry of Health (MoH); Ministry of Information, Communication Technology and National Guidance (MITCG); Ministry of Disaster Preparedness and Management in the Office of the Prime Minister (OPM - MSDP). In an emergency situation, the NECOC under the OPM, provides the overall coordination of response to radiation emergencies while the AEC is the lead technical agency for radiation emergency from initial notification of a nuclear or radiological emergency to its end. There is a draft National CBRNE Safety policy for Uganda (March 2017). A draft National Nuclear and Radiological Emergency Response Plan (NNRERP) has also been developed. The draft plan describes the roles and responsibilities of the ministries, other organizations and facilities involved in nuclear/radiological emergency response, and public communication.

Food samples received from the public are sent to Makerere University Radiation Physics Laboratory for radionuclide contamination tests. In the long term, the AEC is in the process of setting up and equipping its laboratory for food monitoring at Mpoma, Mukono District.

Radiation safety monitoring of staff working in facilities using radioactive materials are conducted by the AEC which also undertakes radiation risk in the environment. There are however, no health facilities with the expertise to manage radiation exposed individuals. Should people experience high radiation exposure, they would be provided with first aid and evacuated. Some medical professionals have been

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given training to be able to administer basic medical care to the exposed persons, before evacuation. Further management in a radiation emergency centre may be required, although currently no designated hospitals for handling radiation emergencies have been identified. The country has plans to construct a radioactive waste management facility for storage of disused sources and contaminated materials.

Recommendations for priority actions

- Finalize the draft CBRNE policy, NNRERP and SOPs for detection, response and training of personnel for radiation emergencies.

- Incorporate nuclear and radiological emergencies into the national public health training and exercise programme.

- Identify health facilities at the national level and in high-risk districts, and train and equip staff to manage radiation emergencies.

- Establish a National Radiation Surveillance System and a National Focal Point to ensure systematic information exchange between relevant sectors for effective coordination.

Indicators and scores

RE.1 Mechanisms established and functioning for detecting and responding to radiological and nuclear emergencies – Score 2

Strengths/best practices
- National legislation and regulations governing nuclear/radiological sources are established.

- National mapping of nuclear and radiological risks/hazards within the country are underway.

- Uganda is committed to the Code of Conduct on the Safety and Security of Radioactive Sources.

- Draft CBRNE, NNRERP and SOPs have been developed.

Areas which need strengthening and challenges
- Become signatory to the Convention on Early Notification of a Nuclear Accident and Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency.

- Identify reference health care facilities for radiation emergencies and response capacity building at national, regional and district levels, in high-risk districts, and train and equip staff to manage with radiation emergencies.

- Develop an emergency response plan to consider the range of functions required in a crisis, including the evacuation of highly exposed persons.

RE.2 Enabling environment in place for management of radiation emergencies – Score 2

Strengths/best practices
- CBRNE National Response Plan has been developed.

- A National multi-hazard Preparedness and Response plan for Public Health Threats and Emergencies has been developed (2016 - 2020).

- Draft National Nuclear and Radiological Emergency Response Plan describing roles and responsibilities of relevant parties has been developed.

- Draft National Chemical, Biological, Radiological, Nuclear and Explosives Safety policy for Uganda has been developed.

- A National Multi-Sectoral Radiological Emergency and Response Committee has been set up.

Areas which need strengthening and challenges

- Limited number of trained and competent HR for radiation emergency preparedness and response

- No sentinel surveillance established for Radiation Emergencies

- Information flow among the Radiological Emergency and Response Committee (NECOC; MoEMD; OSH –MoGLSD; UPF; CBRNE/UPDF; NEMA; DGAL; MAAIF; UNBS; MoH) is not well defined

- No MoUs for information sharing between the key stakeholders during Radiation emergencies

- Limited infrastructure and equipment for Radiological Emergency and Response

- · No functional SOPs for Radiological Emergency and Response have been developed

Appendix 1: JEE Mission Background

Mission place and dates

Kampala, Uganda, 26 to 30 June, 2017

Mission team members:

- Dr. Stella Chungong, WHO, Switzerland (team lead)
- Dr. Peter Rzeszotarski, CDC, USA (team co-lead)
- Dr. Gertrude Avortri, WHO, Zimbabwe
- Dr. Mary Boadu, Ghana Atomic Agency Commission, Ghana
- Dr. Rebecca Bunnell, CDC, USA
- Dr. Faiqa Ebrahim, WHO, Congo
- Annika Elmgart, Ministry of Health, Sweden
- Dr. Robie Kamanyire, PHE, UK
- Dr. Joan Karanja, Ministry of Health, Kenya
- Dr. Matthew Muturi, Zoonotic Disease Unit, Kenya
- Dr. Ndeky Oriyo, Ministry of Health, Tanzania
- Dr. Christopher Oxenford, WHO, Lyon
- Dr. Grace Saguti, WHO, Tanzania
- Paul Sutton, PHE, UK
- Ms Allie Pasieka, WHO, Writer

Objective

To assess Uganda's capacities and capabilities relevant to the 19 technical areas of the JEE tool for providing baseline data to support Uganda's efforts to reform and improve their public health security.

The JEE process

The JEE process is a peer-to-peer review. The entire external evaluation, including discussions around the scores, the strengths, the areas that need strengthening, best practices, challenges and the priority actions should be collaborative, with JEE team members and host country experts seeking full agreement on all aspects of the final report findings and recommendations.

Should there be significant and irreconcilable disagreement between the external team members and the host country experts, or among the external, or among the host country experts, the JEE team lead will decide the outcome; this will be noted in the final report along with the justification for each party's position.

Preparation and implementation of the mission

- Prior to the visit, a teleconference was held with the assessment team members and the host country to review the agenda, responsibilities and logistics.

Limitations and assumptions

- The evaluation was limited to one week, which limited the amount and depth of information that could be managed.

- It is assumed that the results of this evaluation will be made publicly available.

- The evaluation is not an audit. Information provided by Uganda was not independently verified but was discussed and the evaluation rating mutually agreed to by the host country and the evaluation team. This is a peer-to-peer review.

Appendix II. Scores and Priority Actions

Technical areas	Indicators	Consensual Score	Priority Actions
National legislation, policy and financing	P.1.1	**3**	☐ Expedite the comprehensive review of existing laws (Public Health Act; Animal Diseases Control Act, Food Safety) to be in line with IHR 2005 and strengthen implementation of existing relevant laws
	P.1.2	**3**	☐ Establish an emergency fund to support all relevant sectors to carry out immediate investigation of outbreaks, including the Zoonotic Diseases Coordination Office and the National One Health platform, to effectively carry out their roles in multi-sectoral support for One Health implementation ☐ Government should negotiate access to the World Bank pandemic financing facility and other regional funding mechanisms
	P.1.3	**2**	☐ National IHR and OIE focal points should be allocated a budget line within the MOH & MAAIF respective budgets to run IHR/OIE functions - advocacy should be carried with the Ministry of Finance on the need for an emergency fund for all sectors
	P.1.4	**1**	☐ Develop an IHR advocacy and funding strategy, and conduct high level advocacy with parliament, the ministry of finance, and decision makers, for increased government funding to support IHR implementation and emergency funding to all relevant sectors
IHR coordination, communication and advocacy	P.2.1	**2**	☐ The Ministry of Health, working with key stakeholders, should revive the National IHR focal point with effective representation of other sectors ☐ Ministry of Health should develop TORs and SOPs that will guide the National IHR focal point ☐ Re-orient the relevant IHR focal point and hazard focal point from other sectors on their IHR Roles and Obligations.
Antimicrobial resistance	P.3.1	**2**	☐ Develop an implementation plan for the National AMR Action Plan with Monitoring and Evaluation indicators and clear timelines for Human, Animal, Food, Plant and Environmental Health Sectors
	P.3.2	**2**	☐ Update the AMR Surveillance Plan to include zoonotic pathogens and M&E indicators to assess quality of data reported
	P.3.3	**3**	☐ Develop a Healthcare Associated Infection (HCAI) Prevention and Control Plan
	P.3.4	**3**	☐ Harmonize the available antimicrobial stewardship strategies into a National Plan. ☐ Strengthen the capacity of MAAIF with human resource, equipment and direct budget allocation to detect and implement surveillance for AMR

Zoonotic diseases	P.4.1	**2**	☐ Develop a national One Health policy to guide and support implementation of it at National and Sub-national Levels. The policy will establish legal/regulatory structures and funding mechanisms for One Health activities at national and sub-national level
	P.4.2	**3**	☐ Develop a formal integrated zoonosis data sharing and joint outbreak response mechanism among various agencies that work on zoonotic diseases at both national and sub-national levels
			☐ To develop a work plan to strengthen formal and systematic training of human and animal health workers on IHR, PVS, the One Health Approach, and surveillance
	P.4.3	**2**	☐ To strengthen surveillance for priority zoonosis by evaluating the existing surveillance systems to guide development of an effective and efficient surveillance system that is able to timely respond to at least 80% of all zoonotic.
Food safety	P.5.1	**2**	☐ Finalize legislation and regulations covering the safe production, distribution and monitoring of food
			☐ Prepare Memoranda of Understanding between the different sectors of government contributing to food safety to ensure agreement on the roles and responsibilities of each sector and to create a platform where all food safety players come on board
			☐ Join the International Network of Food Safety Authorities (INFOSAN)
			☐ Engage the associations of small to medium enterprises that are involved in food production that can set standards for it, and monitor the compliance of their members and encourage the development of a rapid alert and response and traceability mechanism
			☐ Promote good agricultural practices on farms based on the best available knowledge so that food leaving the producer is of the highest possible quality
Biosafety and biosecurity	P.6.1	**3**	☐ Expedite enactment of the Biosecurity Bill to ensure designation of a national competent authority for Biosafety and Biosecurity and to develop an implementation plan.
	P.6.2	**3**	☐ Develop harmonized national guidelines for licensing and regulation of laboratories across sectors.
Immunization	P.7.1	**3**	☐ Increase human and animal health worker capacities in vaccine management at the district level.
			☐ Strengthen the cold chain capacity, especially for the animal health sector and in refugee host districts.
			☐ Integrate implementation between sectors for immunizations for vaccine-preventable priority zoonotic diseases
	P.7.2	**4**	☐ Develop and initiate implementation of a Ugandan national plan with milestones within 6 months that aligns with the global drive to eliminate rabies by 2030.

National laboratory system	D.1.1	**4**	☐ Integrate the transportation of animal samples into the human health National Specimen Referral and Transport Network
	D.1.2	**3**	☐ Finalize the bill to create the Uganda National Health Laboratory Service and integrate the National Specimen Referral and Transport Network to ensure sustainability
	D.1.3	**3**	☐ Actively share data and information with the various stakeholders preferably through a web-based platform building upon the current system for HIV Early Infant Diagnosis and Viral Load testing
	D.1.4	**3**	☐ Expand licensing and appropriate quality management systems including proficiency testing to all public health laboratories and private laboratories and the animal health sector
Real-time surveillance	D.2.1	**4**	☐ Strengthen human health surveillance systems at all levels to ensure they are electronic, interoperable and interconnected with laboratory and animal health surveillance data
	D.2.2	**3**	☐ Strengthen animal health surveillance and develop an electronic surveillance system at the national and sub-national levels that includes routine review of animal health surveillance data to identify and address reporting, analysis and feedback gaps
	D.2.3	**3**	☐ Promote use of surveillance data at all levels to enhance early detection and response and to improve reporting rates, timeliness, and data quality for animal and human health sectors
	D.2.4	**3**	☐ Establish surveillance for environmental factors, chemical events, food safety, and radiation emergencies & at the PoEs
Reporting	D.3.1	**3**	☐ Strengthen surveillance and reporting systems for both human and animal health with a special attention of the private sector to achieve ≥80% reporting rates for both public and private sectors.
	D.3.2	**3**	☐ Strengthen coordination between all relevant actors and ensure electronic reporting systems that are interoperable
Workforce development	D.4.1	**3**	☐ Develop harmonized national epidemiology curriculum through FETP for in-service training ☐ Promote and expand FETP training to include more cadres and sectors (including para-veterinarians, veterinarians, nurses, laboratorians and others)
	D.4.2	**4**	☐ Conduct comprehensive Human resource mapping and maintain a database for human and animal health sectors that includes respective duty stations ☐ Establish a funding mechanism for proposed UNIPH and career path opportunities for epidemiologists
	D.4.3	**3**	☐ Evaluate effectiveness of training and its impact on improving Uganda's capacity to prevent, detect and respond to public health threats.

Preparedness	R.1.1	**1**	☐ Revise and update the current national multi-hazard emergency preparedness and response plan to meet IHR core capacity requirements according to the risk assessment conducted
	R.1.2	**1**	☐ Expand the scope of the PHEOC handbook to incorporate CONOPs that will ensure proper management of the center including clearly defined structures to facilitate quick access to emergency funds from the Ministry of Finance ☐ Carry out comprehensive resource mapping for emergency response according to the hazard profiles already done.
Emergency response operations	R.2.1	**4**	☐ Define the CONOPS within the PHEOC handbook covering the all hazards approach to emergency response
	R.2.2	**4**	☐ Develop a training and exercise strategy for the PHEOC including all relevant sectors ☐ Agree an investment plan with GoU for the PHEOC to in-clude participation from other sectors e.g. MAAIF.
	R.2.3	**4**	☐ Establish a suitable 'rent free home' for the PHEOC within the MoH.
	R.2.4	**3**	☐ Review and implement case management guidelines and incorporate all other relevant IHR components.
Linking public health and security authorities	R.3.1	**2**	☐ Finalize and approve the draft MoU ☐ Develop multi-sectoral SOPs and response protocols for various CBRNE incidents ☐ Conduct joint trainings/simulation exercises at ALL levels.
Medical	R.4.1	**2**	☐ Finalize existing draft medical countermeasures (MCM) and personnel deployment plans for human health, along with their associated SOPs.
	R.4.2	**2**	☐ Assess risks to the animal health sector, develop a national stock of MCM and a roster of response personnel, and incor-porate such material and personnel into integrated national MCM stocks and rosters of response personnel. ☐ Incorporate MCM and personnel deployment into the na-tional public health training and exercise program.
Risk communication	R.5.1	**2**	☐ Develop a national multi-sectoral risk communication strategy and train risk communication personnel to respond effectively during emergencies
	R.5.2	**4**	☐ Formulate a national coordination platform that brings together all risk communication stakeholders including private sector and develop standard operating procedures and capacity amongst all partners
	R.5.3	**4**	
	R.5.4	**4**	☐ Conduct evaluation campaigns to assess effectiveness of risk communication channels used after the end of every emergency response
	R.5.5	**3**	☐ Strengthen feedback mechanisms with communities for effective risk communication.

Points of entry	PoE.1	**1**	☐ MoH should carry out the process of designation of PoEs and implement IHR core capacities at each of them.
			☐ Government should assign a central office for the coordination of POE health services with adequate resources, and should strengthen existing animal health services at the PoEs
	PoE.2	**1**	☐ Government should develop a multi-sectoral national contingency plan for the PoEs
			☐ Government should increase the animal workforce at the PoEs to carry out One Health IHR related activities.
Chemical events	CE.1	**2**	☐ Develop a national chemical emergency response plan based on a risk analysis and inventory of chemical stocks within the country
			☐ Develop a national multi-sectoral chemical response action plan
			☐ Establish a national focal point for information sharing and concept of operations for gathering surveillance data from multiple sources
	CE.2	**2**	☐ Enhance laboratory and detection, identification and monitoring capacity for priority chemical threats
			☐ Establish a framework and capacity for the management and transportation of hazardous chemicals.
Radiation emergencies	RE.1	**2**	☐ Finalize the draft CBRNE policy, NNRERP and SOPs for detection, response and training of personnel for radiation emergencies
			☐ Incorporate nuclear and radiological emergencies into the national public health training and exercise program
			☐ Identify health facilities at the national and high risk districts, train and equip staff to manage radiation emergencies
	RE.2	**2**	☐ Establish a national radiation surveillance system and a national Focal Point to ensure systematic information exchange between relevant sectors for effective coordination

Appendix III: Key host country participants and institutions

Dr. Stella Atim Acaye	SOO	MAAIF/NADDE
Gregory Adams	GHS Resident Advisor	USAID Uganda
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Francis Kakooza	Project Technical	IDI
Robie Kamanyire	Unit Head	PHE
Abirahmi Kannanathan	TA-Comms	MoH

Joan Karanja	Program Manager	MoH-Kenya
Juliet Kasule	Public Health Administrator DGHP	CDC Uganda
Atek Katirita	Laboratory Specialist	UNHLS
Joshua Kayiwa	Information Analyst	MoH/EOC
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Dr. Christine Kihembo	Epidemiologist	MoH/ESD
Faridah A. Kiiza	Lt., NBC Regt	MoD/UPDF
Norah Kisakye		PHEOC/MoH
John Kissa	Statistician	MoH/WHO
Freddy Kitutu	Lecturer	MakCHS
Juliet Kitutu	STO	MoH-PD
Dr. Franklin B. Kizito	Project Officer/AMR	IDI
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Mohammed Lamorde	HOD PCC	IDI
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Bernard Lubwama	Epidemiologist	MoH
Julius Lutwama	Epidemiologist	Uganda Virus Research Institute
Dr. Ben Masiira	Epidemiologist	MoH/ESD
Dr. Mayanja Maureen	Lecturer	COUAB-OHCEA; Makerere University
P		MoH
Prof Anthony K Mbonye	Director General of Health Services	MOH

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Dr. Anne Nakinsige	SMO	MoH/ESD
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Maj. Charles Nuwakuma	NBC REGT	MoD/UPDF
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Guma Williams	One Health Fellow	FAO
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