THE REPUBLIC OF UGANDA



FRAMEWORK FOR MULTI-HAZARD PREPAREDNESS AND RESPONSE TO PUBLIC HEALTH EMERGENCIES (FMPRPHE)

SEPTEMBER 2023

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Abbreviations and Acronyms

AAR	After Action Review
AMR	Antimicrobial Resistance
ARIS	Animal Resources Information System
AU-IBAR	African Union – Inter African Bureau for Animal Resource
CAO	Chief Administrative Officer
CBAHW	Community Based Animal Health Workers
CBRNe	Chemical Biological Radiological Nuclear explosives
CCHF	Crimean Congo Haemorrhagic Fever
CFR	Case Fatality Rate
COVID-19	Corona Virus Disease 2019
DDMC	District Disaster Management Committee
DGAL	Directorate of Government Analytical Laboratory
DGHS	Director General Health Services
DHMT	District Health Management Team
DHO	District Health Officer
DRRT	District Rapid Response Team
DTF	District Task Force
EAC	East Africa Community
EBS	Event-Based Surveillance
EHS	Emergency Health Services
EIA	Entebbe International airport
eIDSR	electronic Integrated Disease Surveillance and Response
EIS	Event Information System
ESVD	Ebola Sudan virus disease
EVD	Ebola Virus Disease
FAO	Food and Agricultural Organisation
FAW	Fall Army Worm
FETP	Field Epidemiology Training Program
FETPV	Field Epidemiology Training for Veterinarians
FMPRPHE	Framework for Multihazard Preparedness and Response to Public Health Emergencies
GLASS	Global Antimicrobial Surveillance system
HC	Health Centre
HMIS	Health Management Information System
HPAC	Health Policy Advisory Committee
HPD	Health Planning Department
HSDP	Health Sector Development Plan
HSDs	Health Sub-Districts
HSSIP	Health Sector Strategic and Investment Plan
IAP	Incident Action Plan
IBS	Indicator Based Surveillance

IDSR	Integrated Disease Surveillance and Response
IES & PHE	Integrated Epidemiology, Surveillance and Public Health Emergency
IHR	International Health Regulation
ILI/SARI	Influenza Like Illnesses/Severe Acute Respiratory Illnesses
IM	Incident Manager
IMS	Incident Management System
IMT	Incident Management Team
IPC	Infection, Prevention and Control
JEE	Joint External Evaluation
JMS	Joint Medical Stores
LGs	Local Governments
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MCM	Medical Countermeasures
MDAs	Ministries, Departments and Agencies
MoES	Ministry of Education and Sports
MoFPED	Ministry of Finance, Planning and Economic Development
MoGLSD	Ministry of Gender, Labour and Social Development
MoH	Ministry of Health
MoLG	Ministry of Local Government
MOU	Memorandum of Understanding
mTRAC	mobile Tracking
MTWA	Ministry of Tourism, Wildlife and Antiquities
MWE	Ministry of Water and Environment
NaCRRI	National Crop Resources Research Institute
NADDEC	National Animal Disease Diagnostics and Epidemiology Centre
NAPHS	National Action Plan for Health Security
NBC	Nuclear Biological and Chemical
NDA	National Development Authority
NDP	National Development Plan
NECOC	National Emergency Coordination and Operation Centre
NEMA	National Environment Management Authority
NGOs	Non-Government Organisations
NHLDS	National Health Laboratory Diagnostics Services
NHLS	National Health Laboratory Services
NHP	National Health Policy
NICCP	National Integrated Comprehensive Cholera Prevention and Control Plan
NMS	National Medical Stores
NPDPM	National Policy for Disaster Preparedness and Management
NPHL	National Public Health Laboratory
NRRT	National Rapid Response Team
NSTRN	National Specimen Transport and Referral Network
NTF	National Task Force
NTRL	National Tuberculosis Reference Laboratory

OHS	Occupational Health and Safety
OPM	Office of the Prime minister
OSBP	One Stop Border Post
PFMA	Public Finance Management Act
PHEIC	Public Health Emergency of International Concern
PHEOC	Public Health Emergency Operations Centre
PHEs	Public Health Emergencies
PHFP	Public Health Fellowship Program
PNFP	Private Not for Profit
PoE	Points of Entry
RRT	Rapid Response Team
RTIs	Road Traffic Incidents
RVF	Rift Valley Fever
SDGs	Sustainable Development Goals
SitReps	Situation Reports
SMEs	Subject Matter Experts
SNTRL	Supra National Tuberculosis Reference Laboratory
SOPs	Standard Operating Procedures
STAR	Strategic Tool for Assessing Risks
TASO	The AIDS Support Organisation
TIC	Toxic Industrial Chemicals
UBOS	Uganda Bureau of Statistics
UNCST	Uganda National Council for Science and Technology
UNHLS	Uganda National Health Laboratory Services
UNRO	Uganda National Health Research Organisation
UPDF	Uganda Peoples' Defence Forces
UVRI	Uganda Virus Research Institute
VHF	Viral Hemorrhagic Fever
VHTs	Village Health Teams
WHO	World Health Organisation

Operational Definitions

Alert: An indirect early warning sign of a potential public health event occurring in a community under surveillance. Alerts must be investigated further and verified as to whether they represent a true event or not.

Contingency plan: A plan to deal with specific aspects of a future threat

Emergency: An event or threat that produces or has the potential to produce a range of consequences that require urgent, coordinated action

Emergency preparedness: The knowledge, capacities and organisational systems developed by governments, response and recovery organisations, communities and individuals to effectively anticipate, respond to, and recover from the impacts of likely, imminent, emerging, or current emergencies

Event: A manifestation of disease, or an occurrence that creates a potential for disease

Hazard: A potentially damaging physical event, phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental degradation.

Mitigation: Activities designed to reduce or limit risks to persons or property or to lessen the actual or potential effects or consequences of an incident

Multi-hazard: Developing, strengthening and using elements and systems that are common to the management of all hazard types

Multisectoral: Recognising that the various government ministries, private sector entities and civil society have a role to play in risk management

One Health: Is an integrated, unifying approach that aims to sustainably balance and optimize the health of humans, animals, plants and ecosystems.

Outbreak: Is as an increase in the number of cases of a disease or a public health event above what is normally expected within that population, in a given area and over a particular period of time.

Response: Process of mobilisation and deployment of measures, people and resources to deal with a public health event or emergency

Risk: The combination of the probability of an event and the magnitude of its consequences (or impact), which results from interactions between natural and human-induced hazards, vulnerability, exposure and capacity

Risk assessment: Involves identification characteristics of a hazard, evaluation of the exposure of individuals and populations, analysis of the associated context, vulnerabilities and coping capacities and estimation of the impact of the hazard and its health consequences

Surge capacity: The ability to draw on additional resources to sustain operations and increase capacity, usually for emergency response, as required

Vulnerability: A position of relative disadvantage. The characteristics and circumstances of an individual, community, system or asset that make it susceptible to the damaging effects of a hazard

Foreword

Each year Uganda records several public health emergencies originating from floods, landslides, drought, human displacements, road accidents, marine transport, food safety issues, and infectious diseases like malaria, cholera, ebola, rift valley fever, anthrax and crimean congo hemorrhagic fever. These public health emergencies result in loss of lives and social economic disruptions of the affected communities and the country at large. The COVID-19 disease pandemic presented with unprecedented negative human, social and economic impact that tested the country's preparedness, response and resilience systems. This negative impact was further exacerbated by the Ebola Sudan virus disease (ESVD) of 2022 that occurred in Mubende region.

The country therefore needs to strengthen national health security by building its capacity for prevention, detection and response to public health emergencies to fully realise the aspirations of Uganda Vision 2040. The gaps and challenges so far documented during COVID 19 and ESVD responses shall be addressed for development of the national systems.

The Framework for Multihazard Preparedness and Response to Public Health Emergencies (FMPRPHE) is a mechanism for preparedness and response to hazards using a multi sectoral approach. This is another positive stride in building national capacities towards national health security. I therefore call upon all stakeholders for public health emergencies to embrace this plan as we move towards a healthier and resilient country for public health emergencies.

For God and My Country.

Hon. Dr. Jane Aceng Ocero

Minister of Health

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We equally acknowledge support from our development and implementing partners, namely World Health Organisation, United States Centers for Disease Prevention and Control, Infectious Disease Institute (IDI), Baylor College of Medicine Uganda and Resolve to Save Lives for the funding and technical support in the development of this framework.

Further appreciation goes to the dedicated team of professionals who tirelessly worked hard to produce the document. We are equally indebted to the individual technical officers for their commitment in the production of the Framework for Multihazard Preparedness and Response to Public Health Emergencies listed in Annex 1.

Thank you very much.

Dr. Henry G. Mwebesa

Director General of Health Services

Executive Summary

Uganda is confronted with natural and man-made disasters every year with dire consequences to economic, social, and health and environmental for the health living of the population. Due to this vulnerability, the country has experienced multiple public health threats and disasters. Following the Joint External Evaluation of the International Health Regulations (IHR) implementation, Uganda reviewed the National Multi-Hazard Public Health Emergency Response Plan, 2016-2020.

Uganda's preparedness and response to public health threats is a shared responsibility that can only be achieved through a "whole of government" approach. The review was done through a multi-sectoral consultative process involving government Ministries, Departments and Agencies (MDAs), non-government organisations; private sector and development partners. This was preceded by a national analysis of the risk profile using the World Health Organization Strategic Tool for Analysis of Risks (STAR) in 2020. Landslides, floods, influenza and influenza-like illness (including zoonotic influenza, COVID-19 and new subtypes of influenza and coronaviruses) and accidents (traffic and marine) were classified as very high risks. Cholera (including all water-borne diseases e.g. typhoid), food poisoning, Yellow Fever, anthrax, antimicrobial resistance, VHF (Ebola, Marburg), and drought were classified as high risks.

This framework is to address preparedness, response and mitigation of effects on public health for all types of risks and hazards. The audience for this framework therefore includes: human and animal health workers, emergency responders, leaders and policy makers at all levels, other MDAs, development and implementing partners, academia, private sector and communities. The framework will harmonise processes and guide stakeholders on strengthening public health emergency preparedness, response and recovery.

In the framework, the historical perspective of various hazards and public health emergencies in Uganda is discussed. In addition, the health system structure as well as the systems that can support multi-sectoral response are presented. The framework has the system to support detection of alerts, rapid risk assessment and grading of events, plus how respond to events beyond one sector. The financing arrangements, concept of operations, resource mobilisation and management systems are presented. We envisage that working together with the aim of saving lives and minimising impact of the hazards on the population will go a long way to bolster socio-economic development of the country.

Chapter One

1.0 Introduction

Uganda is confronted with natural and man-made disasters every year with dire consequences to economic, social, health and environment for the health living of the population. In the recent past, the country has experienced disease outbreaks, flooding, drought, terrorist threats and attacks. The country's geographical location near the biodiversity disease rich 'hot spot' of the Congo Basin exacerbates her vulnerability to epidemics. In addition, the country is part of the 'Filovirus triangle' as well as the Meningitis and Yellow Fever belts[1]. It has also experienced extreme weather and climate change conditions increasing pressure on eco-systems and environment. The increased globalization, international travel and the porous borders increase her vulnerability. The country has experienced multiple public health threats and disasters in the recent past. These have tested the capacity to prevent, detect and respond timely to save lives, mitigate socio-economic damage and disruptions. The National Policy for Disaster Preparedness and Management (NPDPM) of 2011 provides guidance in coordinating response to all hazards in the country.

The Policy adopts a multi-sectoral approach to preparedness and management of hazards and disaster risks, cognizant of the cross-cutting nature of disasters when they occur. The Policy therefore identifies a comprehensive list of hazards and disasters that Uganda is prone to, and for every hazard and disaster, policy actions are highlighted, as well as, responsible institutions responsible for implementing such actions, and allocates institutional leads for all the required actions.

Ministry of Health is identified as a responsible institution in implementation of policy actions for hazards and disasters like; famine, floods, landslides / mudslides, crop and livestock diseases, heavy storms, pest infestations, earthquake, transport related accidents; and is particularly identified as a lead institution for epidemics and pandemics (NDPM Policy 2011, Section 2.1.6 & 2.1.8).

The involvement of the Health sector in management of various hazards is premised on the reality that most hazards when they manifest into disasters, have potential to directly or indirectly impact health of persons. The Policy therefore calls upon the Health sector to implement a range of policy actions including, development of appropriate preparedness and response plans. This effort of developing a Framework for Multihazard Preparedness and Response to Public Health Emergencies

[1] National Action Plan for Health Security, 2019 - 2023

(FMPRPHE) is therefore a direct intervention to implement the provisions of the National Policy for Disaster Preparedness and Management Policy (2011).
National efforts are ongoing to strengthen institutions and mechanisms to minimise the threat and damage to the public from chemical, biological, radiological, nuclear and explosive incidents. Such mechanisms are implemented in tandem with Occupational Health and Safety Act (2006), The National Environment Act (2019) and the toxic chemicals prohibition and control Act (2016).

1.1 Audience

Uganda's preparedness and response to public health threats is a shared responsibility that can only be achieved through a "whole of government" approach. The success of the framework is hinged on collaboration among government, non-government and community stakeholders concerned with implementation of International Health Regulations (IHR, 2005) using the One Health approach.

The target audience of this framework are stakeholders who contribute directly or indirectly to emergency preparedness, resilience and response to public health emergencies. These include; communities, human and animal health workers, emergency responders, leaders, policy makers, ministries, departments and agencies, development and implementing partners, academia and private sector.

1.2 The Purpose of the Framework

The Framework for Multihazard Preparedness and Response to Public Health Emergencies (FMPRPHE) hereafter referred to as the framework is to harmonise processes and guide stakeholders on strengthening public health emergency preparedness, response and recovery. The framework focuses on addressing health risks associated with all hazards using a multi sectoral approach.

The framework is a living and guiding document applicable in different emergency situations that require public health response. It is envisaged that the framework will contribute to strengthening the country's capacity for emergency preparedness, building resilience and initiating timely and adequate response at national and sub-national levels.

1.3 Specific Objectives

i. To establish structures and procedures for decision making, command and control using an incident management system in handling public health emergencies at different levels

ii. To specify procedures for alert-verification, detection, grading, response activation and recovery for public health emergencies
iii. To strengthen implementation of hazard-specific contingency plans based on the country risk profile
iv. To promote multi-sectoral coordination in prevention, detection and response to public health emergencies

1.4 The Framework Review Process

The country had a five-year National Multihazard Preparedness and Response plan for Public Health Emergencies (NMHPRFPHE) (2016-2020). During the JEE assessment the team recommended revision of the plan to strengthen the preparedness and response planning components. The current framework incorporates these changes and complies with the World Health Organization (WHO) guidance document: 'National Public Health Emergency Response Plan: A Toolkit for Public Health Authorities'.

The revision was done through a multi-sectoral consultative process involving government ministries, departments and agencies, non-government organizations (NGOs); private sector and development partners. The process was preceded by a national risk profiling using the WHO Strategic Tool for Analysis of Risks (STAR) in 2020. A desk review of relevant documents was conducted namely; relevant acts, national policies and guidelines and WHO technical guidelines. The final framework was validated by the National Task Force for Epidemics (NTF) which is a multi-sectoral, multi-disciplinary national committee.

The framework will be regularly reviewed every after five years by multiple stakeholders to address changes in risk profiles and scenarios.

1.6 National and International legal frameworks / policies

Uganda has a favourable policy environment for implementation of preparedness and response activities. The Public Health Act (CAP 281) as amended is adequate to support prevention, preparedness and response activities for all hazards. The National Policy for Disaster Preparedness and Management (2011) has provisions for strengthening the capacity to prevent, detect and respond to public health emergencies. The Second National Health Policy (2010) and the Health Sector Development Plan 2020/21-2025/26 also have provisions for fostering development of these same core capacities required for multi hazard response.

This framework has been developed in line with the international and national legal frameworks/policies in relation to public health emergencies as indicated below. For details of the contribution of the policies refer to annex 1.

Table 1: International and National Legal Frameworks relating to public health emergencies

International	National
Agenda 2030 - Sustainable Development Goals International Health Regulations (2005) Global Health Security Agenda Regional Strategy for Health Security and emergencies 2016 Sendai Framework for Disaster Risk Reduction (2015-2030) Paris Agreement on Climate Change (2016) Africa Health Strategy (2016-2030), East Africa Community (EAC) Vision (2050) Disaster Risk Reduction Bill-EAC (2016)	Third version Edition Integrated Disease Surveillance and Response (IDSR) Uganda Vision 2040 National Development Plan (NDP) III (2020/21 – 2024/25) The Public Health Act (1935) as amended Atomic Energy Act (2008) Occupational Health and Safety – OSH Act (2016) The Local Government Act 1997 Parish Development Model 2021 National Climate Change Act 2021 The National Environment Act 2019 The Toxic Chemicals Prohibition and Control Act 2016 Animal Diseases Act Chapter 38 laws of Uganda National Health Policy II (2010 – 2020) National Policy for Disaster Preparedness and Management 2011 The National Agriculture Policy 2013 Delivery of Veterinary Services policy (2002) Health Sector Development Plan (2020/21-2024/25) Medium Term Expenditure Framework; 3 Year Rolling Resource Allocation Framework The Uganda National One Health Strategic Plan (2018-2022)

	National Action Plan for Health Security (NAPHS) 2019-2023 Agricultural Sector Strategic Plan (ASSP) FY 2015/16 to FY 2019/20 Occupation Safety and Health Management Information System - OSHMIS (2021) Ministry of Works and Transport policy

Chapter Two

2.0 Background

2.1 Country Information

Uganda is a landlocked country in Eastern Africa located between 1ºN and 4ºN latitude, and 30º E and 35º E longitude. The country is bordered by the Republic of South Sudan to the North and Republic of Kenya to the East, United Republic of Tanzania and Republic of Rwanda to the South, Democratic Republic of Congo to the West. Uganda's geography is very diverse. It mostly comprises of plateaus with volcanic hills, mountains, lakes, rivers and forests. It has a total land cover area of 241,550.7 km squared with 36,902.6 km squared covered by open water bodies and 7,325.7 km squared covered by permanent and seasonal wetlands. The country is at an average altitude of 900 meters above sea level. It has an equatorial climate. The mean annual temperature is 16°C in the Southwest highlands, 25°C in the northwest, and often exceeds 30°C in the northeast. There are two rainfall patterns; bimodal and unimodal. Most parts of the country experience two rainy seasons; March to June and Mid-August to December. Other parts like Karamoja experience one rainfall season from April to October.

Administratively, as of July 2023, the country 135 districts and eleven cities (the capital city being Kampala). The districts/local governments operate under a decentralised governance system and are spread across four regions i.e. Northern, Eastern, Central and Western (**Figure 1).** There are traditional Kingdoms and Chiefdoms that enjoy some degree of cultural autonomy.

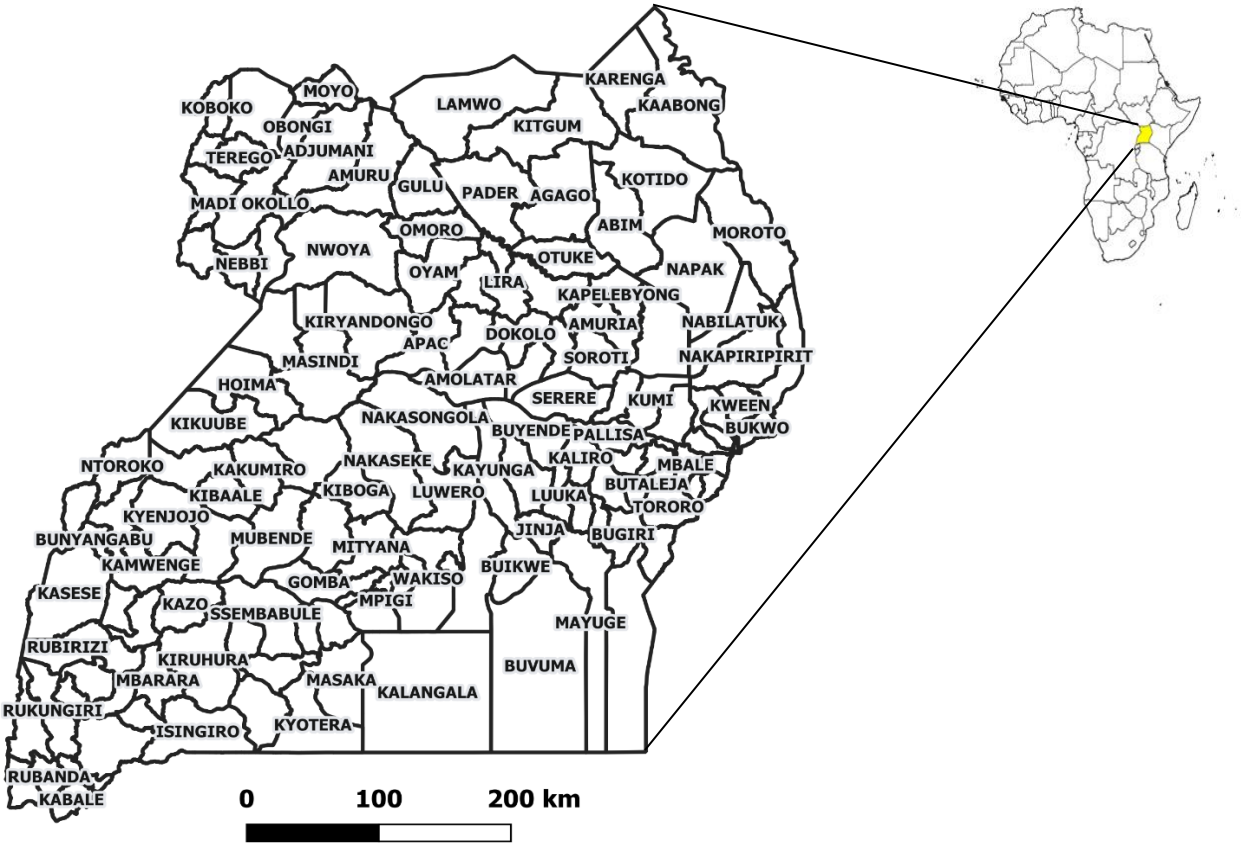


Figure 1: Map of Uganda showing the current districts[2]

Demographically, the country population is 48,582,334 people (UBOS, 2023)[3], with an average annual growth rate of 2.82%. The average household size is 4.7 persons, with a sex ratio of 94.5 males per 100 females. An estimated 71.4% of the population lives in rural areas as compared to 28.6% in urban centres. Forty-nine percent (49%) of Uganda 's population is under the age of 15 years and with 18.5% of the total population being under five. Those aged 65 years and above represented 2.3% of the total population in 2015 and should continue to increase as expectation of life improves.

[2] https://reliefweb.int/map/uganda/sub-regions-uganda-12-may-2020

[3] Uganda Bureau of Statistics,2020

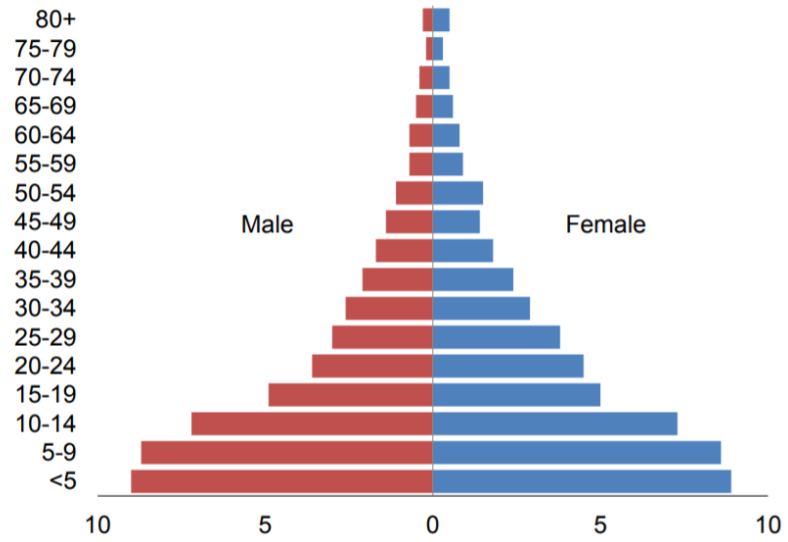


Figure 2: Percentage Distribution of Age and Sex Population in Uganda (UDHS,2023)

2.2 Communication and Transport Networks

There are a number of means of communication in Uganda, including telephone, radio and television broadcasts, internet, mail, and several newspapers. The use of phones and the internet in Uganda has rapidly increased in the last few years. The Uganda Communications Act 1997 created the Uganda Communications Commission, which is a regulatory body for operators and users. Uganda's national transport system is comprised of road, rail, air and inland water transport modes. These modes operate on networks which collectively comprise the country's transport system. Both road and communication networks facilitate or may hinder access to essential information and services before, during and after disasters or hazards.

Road transport is the core and dominant mode of transport with over 90% of cargo freight and passengers moving by road. Air and rail transport modes are still growing with limited utilization while inland water transport is less developed. The transport network to areas were hazards are likely to occur (hard to reach areas) may affect preparedness and response to a specific hazard.

2.3. History of Public Health Emergencies in Uganda

Uganda remains vulnerable to natural and man-made disasters which pose serious public health threats to citizens. In the recent past, the country has experienced unprecedented occurrence of public health emergencies. These public health emergencies cost lives of Ugandans, and drain the resources meant to improve the quality of life in the country. Below is historical data on selected priority public health emergencies as per STAR report of December 2020.

Landslides: The country faced several landslides which are predominant in the western and eastern regions of the country because of the mountainous nature and recurrent high levels of rain. In recent years, incidents of these have occurred in Bududa in 2010 and Kasese in 2014[4]. These incidents usually result in internal displacement, homelessness, destruction of infrastructure, disruption of social services and livelihoods and pose a risk for water borne diseases.

Floods: Every year, at least one incident of flooding occurs in Uganda. In the year 2020, floods displaced 125,182 persons in the country. The affected population suffered severe impacts such as displacement, lack of access to safe water, limited access to health care services and other services due to damaged infrastructure and food insecurity among others[5]. Most incidents of flooding and water logging have been reported in eastern and western Uganda along major water bodies. Among these include Bukedea, Katakwi, Amuria, Namisindwa, Manafwa, and Amuru. They are also reported cases in Kasese and Mbarara among others. As a result of the floods, there are secondary public health hazards that manifest such as cholera and malaria. In June 2022, Mbale region experienced another flood affecting seven districts/local governments namely; Mbale City, Mbale district, Kapchorwa, Bulambuli, Namisindwa, Sironko and Manafwa, affecting directly 800 households and killing 11 persons.

Influenza and other flu like illness: Highly Pathogenic Avian Influenza (HPAI) H5N8 was confirmed in 2017 in the districts of Wakiso, Masaka and Kalangala [6]. However, the strain was not pathogenic to humans and affected mainly wild birds (white winged terns) and domestic birds such as chicken as well as ducks. The outbreak led to international trade bans as well as economic disruptions at household levels. Uganda was also affected by the coronavirus disease (COVID-19) pandemic when it confirmed its first case on the 21st March 2020. The cumulative cases of COVID19 in Uganda were 162,443 with 99,487 recoveries, and 3,565 deaths as of February 10th 2022[7].

Accidents: Road traffic accidents remain a soaring problem in Uganda. The Country is among the top-ranking countries for road traffic incidents (RTIs) along with South

[4] https://floodlist.com/tag/uganda/page/3

[5] https://dtm.iom.int/reports/uganda-%E2%80%93-flood-impact-%E2%80%93-baseline-mobility-assessment-4-28-may

[6] https://www.fao.org/3/i7105e/i7105e.pdf

[7] https://www.health.go.ug/covid/#

Africa, Nigeria, Iran, Thailand and Dominican Republic[8]. All road users (passengers, pedestrians, motorists and cyclists) are prone.

Uganda experiences RTI deaths at 28.9 per 100,000 population which exceeds the 24.1 per 100,000 population for the WHO AFRO region and 18.0 per 100,000 population global average for deaths respectively[9] . Traffic injuries are within the top-ten causes of mortality in the country. Uganda is one of the countries implementing United Nations Decade of Action for Road Safety 2011–2020. Much more is still needed to promote the road safety, access to emergency medical care and to establish a national traffic crash database system. The Ministry of health rolled out the national medical emergency medical services effective 2021 which aims at ensuring that all Ugandans have access to quality emergency medical services.

It is estimated that 59, 077 individuals countrywide suffered road traffic injuries (RTIs) in 2016, of which 51, 519 were non-fatal and 7,558 were fatal. The distribution of the injury burden by data source was; police 20,406 (34.5%), health facilities 37,167 (62.9%) and mortuaries 1,505 (2.5%). Kampala East Metropolitan 8419 (14.3%), followed by Rwizi 7780 (13.2%) and Mount Moroto 6624 (11.2%) had the highest injury burden.[10]

In 2018, the country experienced a marine accident on Lake Victoria involving over 150 people and 31 were confirmed dead[11] . However, incidents involving 5 to 20 people are common on our water bodies. There is a need to continue strengthening the national policy for prevention and control of transport related hazards including marine transport.

Railway: A few railway accidents have been recorded in Uganda[12]. Five were injured after a truck hit a train near the Mukwano roundabout in the city[13]. In addition, two soldiers were severely injured when a UPDF truck rammed into a passenger train in Kireka, a Kampala City suburb.

Air accidents: Several Air accidents have been reported in Uganda in Arua, Entebbe, Kasese, Moyo and Kaabong with multiple injuries and mortalities[14]. At least 28 people have been killed in the 11 plane crashes that have happened in Uganda since the

[8] Boda Bodas and Road Traffic Injuries in Uganda: An Overview of Traffic Safety Trends from 2009 to 2017

[9] Balikuddembe JK, Ardalan A, Khorasani-Zavareh D, Nejati A, Munanura KS. Road traffic incidents in Uganda: a systematic review study of a five-year trend. J Inj Violence Res. 2017 Jan;9(1):17–25. doi: 10.5249/jivr.v9i1.796. Epub 2017 Jan 1. PMID: 28039687; PMCID: PMC5279989.

[10] https://www.researchgate.net/publication/340292371_Estimating_the_burden_of_road_traffic_crashes_in_Uganda_using_police_and_health_sector_data_sources

[11] https://www.africanews.com/2018/11/25/uganda-boat-accident-kills-30-dozens-still-missing//

[12] https://www.newvision.co.ug/news/1497861/injured-truck-hits-train-kampala

[13] https://www.newvision.co.ug/news/1497861/injured-truck-hits-train-kampala

[14] https://www.baaa-acro.com/country/uganda

1970s[15]. The most recent crash happened in the central region, where a helicopter operated by the Uganda People's Defence Forces got involved in an accident, killing the two crew members. According to the Bureau of Aircraft Accidents Archives (B3A), the recorded plane crash in Uganda with the highest number of fatalities claimed 11 in 2009. In 2005, n Antonov AN-12 cargo plane operated by service air crashed on its way from Entebbe to Kinshasa resulting into six fatalities. In 1998, a Britten-Norman Islander aircraft operated by Tana Mana Aviation travelling from Entebbe to Kasese crashed in the mountains resulting into four fatalities. In 2006, a Cessna 208 Caravan hired by the UN crashed in the Mt Rwenzori area on its way from Goma, DR Congo to Bunia resulting into three fatalities[16].

Drought and prolonged dry spells: Uganda usually experience prolonged dry spells in the northern part of the country for example Lango, Karamoja and the cattle corridor areas almost every year[17]. These prolonged dry spells affect the ability of households to cater for their basic needs and livelihoods thereby reducing their capacity to fend for themselves in times of crisis. In Uganda, water scarcity due to drought poses the greatest threat to the rural population. Around 4.5 million people (or 10% of the population) are affected by water scarcity each year, mainly in the south-eastern and north-eastern regions of Uganda (World Bank 2019). Droughts in Uganda are a recurrent hazard and the country experienced notable drought events in the years 1967, 1979, 1987, 1999, 2002, 2005, 2008, 2010 and 2017 (World Bank 2019)[18].

Cholera: The first cholera case in Uganda was reported in 1971 and since then several cholera outbreaks were registered in the country especially in 2012 (**Cholera burden indicated in figure 3**), when the outbreak was most extensive affecting more than 6,000 individuals mainly because of the El Nino rains[19]. Uganda is being considered as an endemic area for Cholera.

[15] https://www.newvision.co.ug/news/1514208/plane-crashes-uganda-killed-1970s

[16]

[17]https://reliefweb.int/report/uganda/drought-hunger-strike-karamoja%E2%80%99s-%E2%80%98cattle-corridor%E2%80%99

[18] https://iwaponline.com/jwcc/article/11/S1/217/75299/Drought-and-households-adaptive-capacity-to-water

[19] https://academic.oup.com/jid/article/208/suppl_1/S78/833490

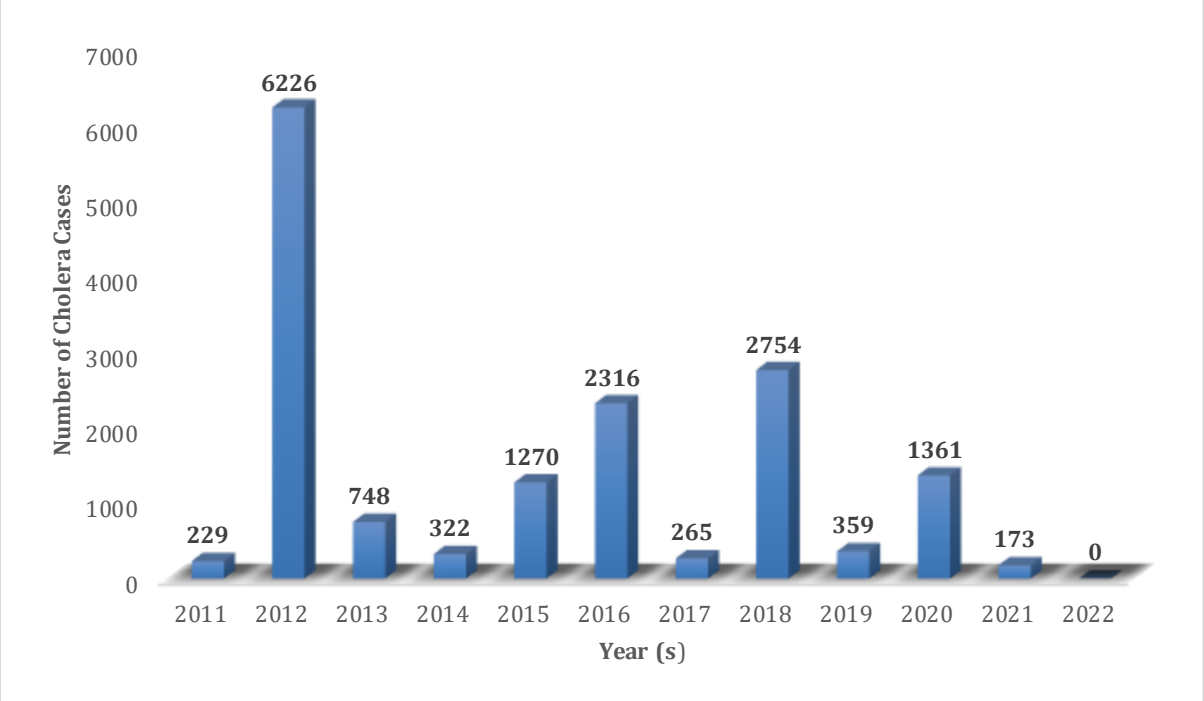


Figure 3: Number of Cholera cases reported in Uganda from 2011 to 2022

Source: Development of a Scorecard to Monitor Progress toward National Cholera Elimination: Its Application in Uganda showing Summary of characteristics of cholera outbreaks in Uganda 2015 to 2021[20]

In order to tackle the threat of Cholera, in June 2017 the Uganda Ministry of Health (MOH) launched, a national integrated comprehensive cholera prevention and control plan, which includes the strategic use of Oral Cholera Vaccine (OCV) to prevent cholera among at risk populations[21].

The plan documents 11 cholera hotspot districts as targets for the complementary use of OCV for cholera control and prevention. These hotspots **(indicated in figure 4 and 5 below)** were located along the international borders with Democratic Republic of Congo (DRC) in western Uganda, Kenya in eastern Uganda or with South Sudan in the north.

[20] https://doi.org/10.4269/ajtmh.23-0007

[21] http://library.health.go.ug/communicable-disease/national-integrated-comprehensive-cholera-prevention-and-control-plan-fiscal

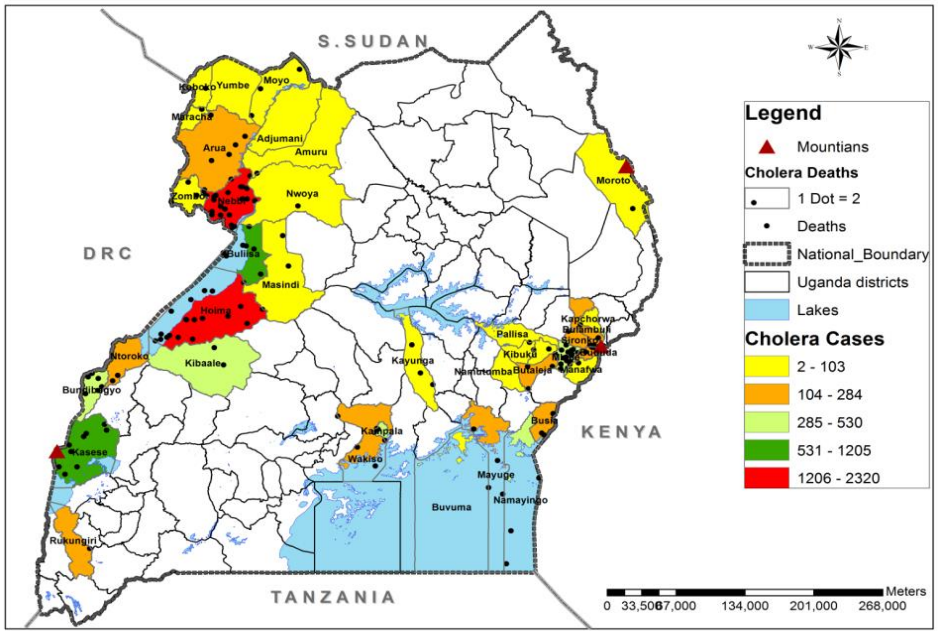


Figure 4: Map of Uganda showing Cholera Hotspots,2011-2016[22]

Source: Ministry of Health National Integrated Comprehensive Cholera Prevention and Control Plan[23]

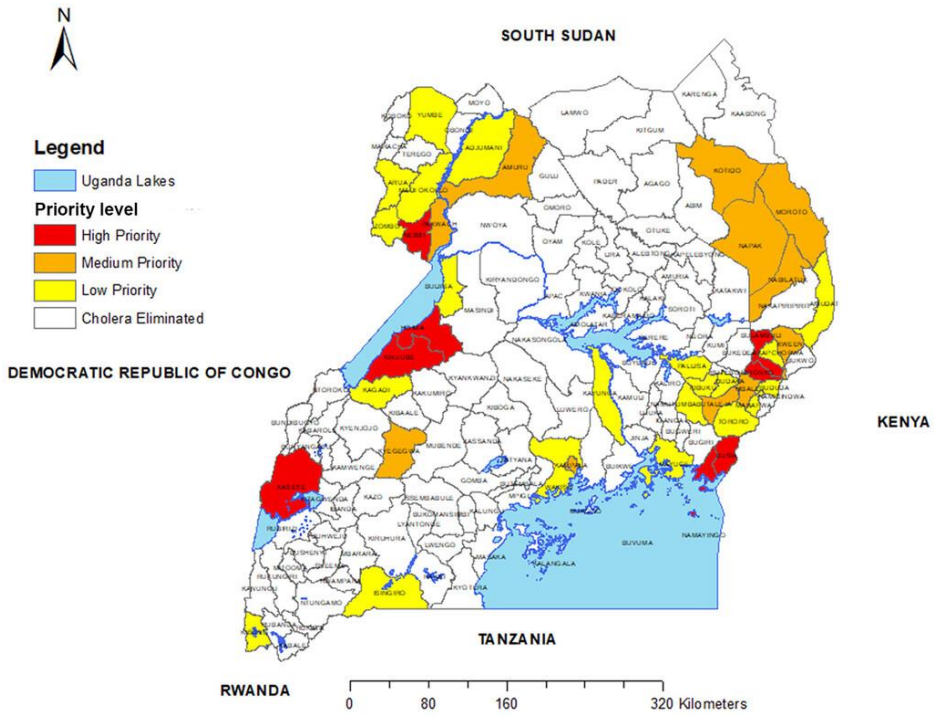


Figure 5: Uganda cholera hotspot map using the Global Task Force for Cholera Control method and using data from the years 2015–2021[24]

[22] https://www.ajtmh.org/view/journals/tpmd/108/5/article-p954.xml

[23] http://154.72.196.19/waterborne-diseases/cholera/national-integrated-comprehensive-cholera-prevention-and-control-plan-0

[24] https://www.ajtmh.org/view/journals/tpmd/108/5/article-p954.xml

Source: Ministry of Health Uganda cholera hotspot map using the Global Task Force for Cholera Control method and using data from the years 2015–2021[25]

With support from the Global Task Force on Cholera Control (GTFCC), the country vaccinated 1,723,583 people living in the cholera hotspot districts of; Nebbi, Pakwach, Buliisa, Hoima, Kasese, Zombo. Moyo, Namayingo, Ntoroko, Busia and Arua that were responsible for over 60% of all reported cholera cases in the country between 2018 and 2021. An additional number were vaccinated in Moroto 65,219 and 11,356 Isingiro districts during reactive campaigns indicated in **figure 6** below.

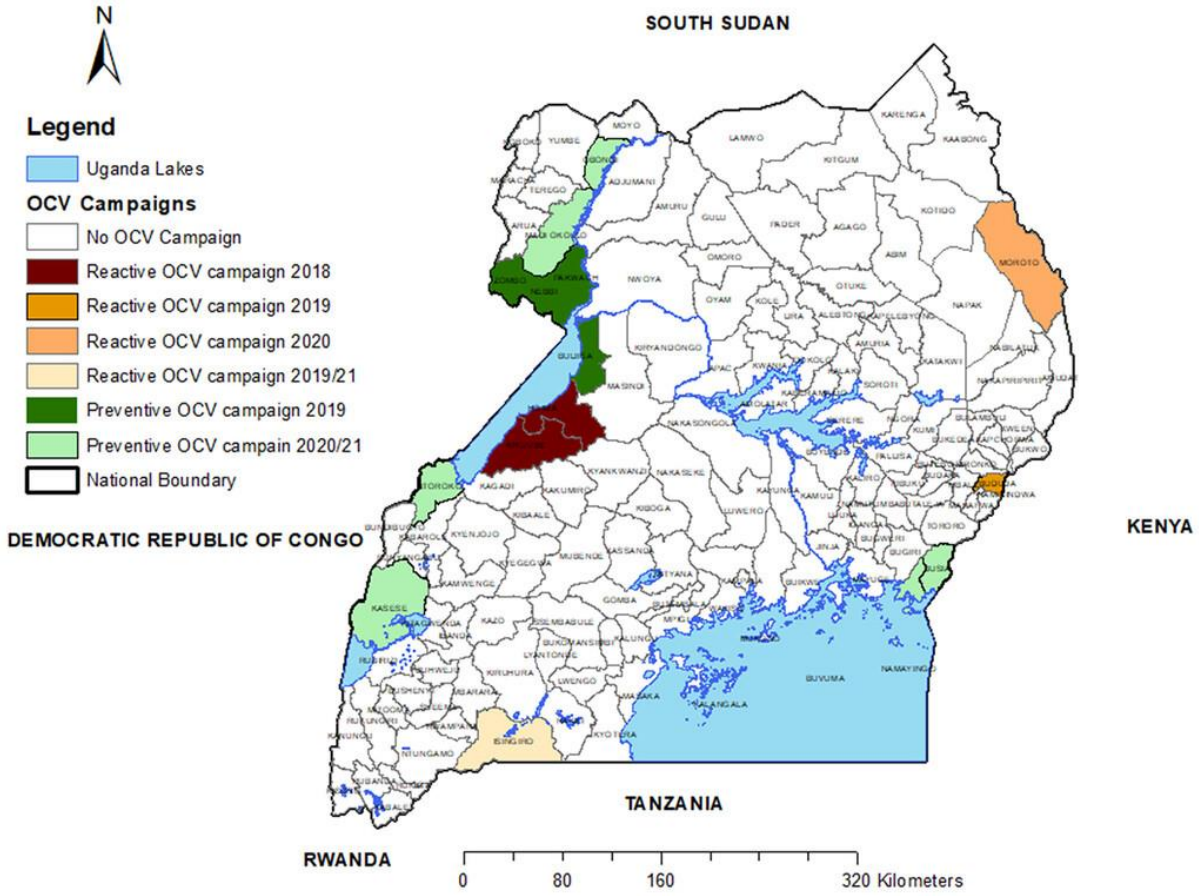


Figure 6: Map of Uganda showing districts where Oral Cholera Vaccine (OCV) campaigns were conducted, 2018–2021.

Source: American Journal of Tropical Medicine and Hygiene with Map of Uganda showing districts where oral cholera vaccine (OCV) campaigns were conducted, 2018–2021[26].

Yellow Fever: Uganda is one of the countries located in the Yellow Fever belt in Sub-Saharan Africa with several outbreaks reported since 1941. Prior to 2010, Uganda had experienced five outbreaks in 1952, 1959, 1964, and 1971. All these yellow fever

[25] https://www.ajtmh.org/view/journals/tpmd/108/5/article-p954.xml
[26] https://www.ajtmh.org/view/journals/tpmd/108/5/article-p954.xml

outbreaks involved single cases. These trends changed in 2010 when Uganda experienced the biggest outbreak confirming 13 out of 253 suspected cases with 13 districts of northern Uganda affected. In 2016, Yellow Fever was confirmed in Rukungiri, Masaka, and Kalangala districts. Koboko and Masaka districts confirmed one case in December 2019. Another outbreak was confirmed in West Nile (December 2019 to February 2020) (Moyo, Maracha) and Buliisa districts also reported outbreaks. There were eight confirmed cases with a case fatality rate of 50%[27]. There was a reactive yellow fever vaccination campaign which was conducted between 24th to 31st August 2020 involving districts of Buliisa, Koboko, Maracha, Moyo, Obongi and Yumbe[25].

Uganda is one of the priority countries for the Eliminate Yellow Fever Epidemics Strategy (EYE); 2017-2026; a global strategy to eliminate Yellow Fever Epidemics[28]. The country introduced Yellow Fever vaccination into routine national vaccination campaign effective October 2022. The vaccine is administered to children at the age of nine months together with first dose of measles rubella vaccine. This was followed by a national wide yellow fever mass vaccination preventive campaign in three phases based on risk assessment conducted in 2022. This exercise is scheduled to be completed in 2024. The first round was completed in June 2023 and covered six high endemic regions namely Kigezi, Kabarole, Arua, Acholi, Lira and Hoima reaching a total of 805 sub counties. A total of 9,421,530 persons aged 9 months to 60 years were vaccinated, which was 70.5% of the target population indicated in **Figure 7 below**.

[27] Humanitarian Situation Report N0.9

[28] https://www.who.int/initiatives/eye-strategy

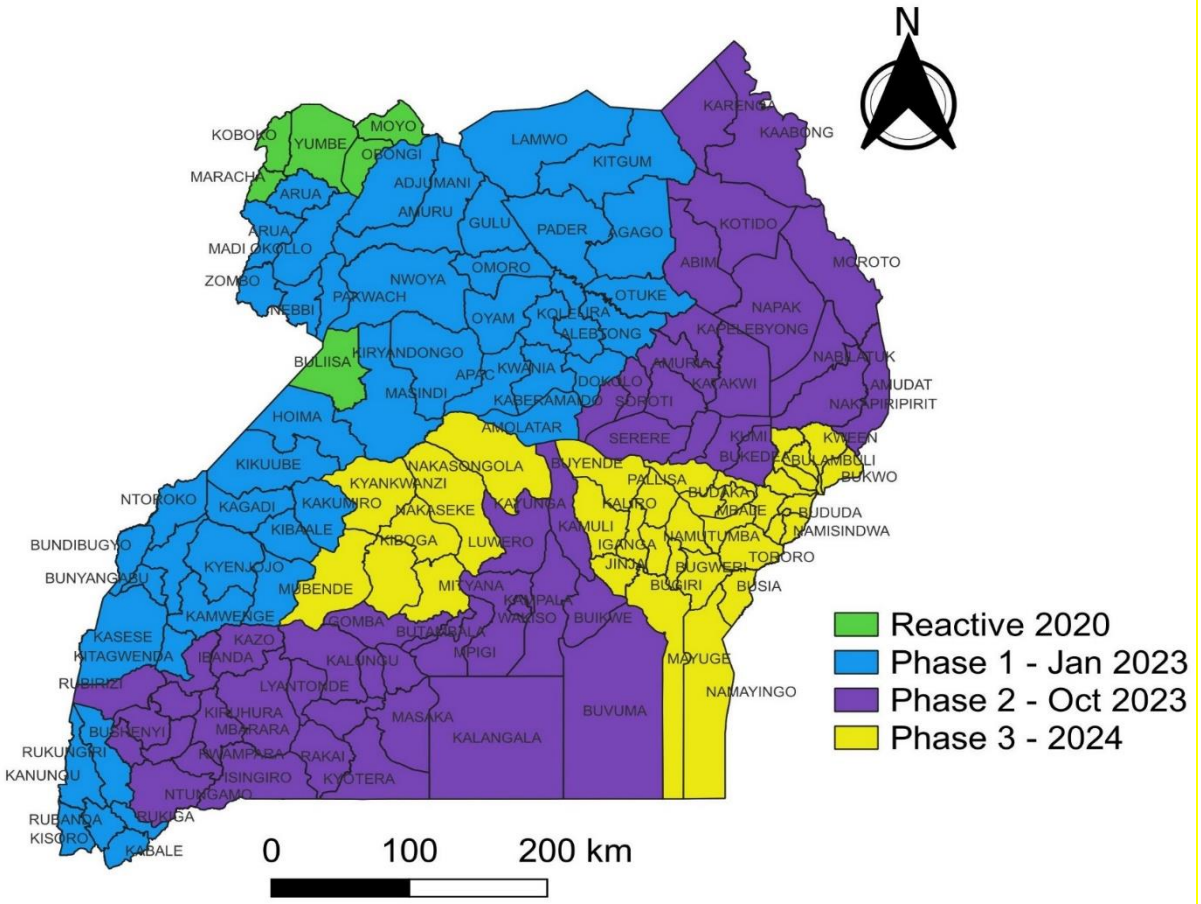


Figure 7: Map showing Yellow Fever Mass Vaccination Campaign Phases 2022-2024

Source: Ministry of Health Roll out plan for Yellow Fever Vaccination 2022-2024

Anthrax: An outbreak of anthrax in Queen Elizabeth National Park in 2004 which affected 200 hippopotamus and unknown number of buffalos. In 2011, there was an outbreak of anthrax in Sheema district killing two humans and seven cattle. Since February 2017, there have been sporadic anthrax outbreaks in Arua district affecting both livestock and humans (MoH). In the same period, outbreaks of anthrax were confirmed in Isingiro, Kween and Kiruhura districts, affecting both animals and humans. The country continues to report sporadic cases of anthrax in different districts in humans and animals in Kapchorwa and Kween districts in April 2021[29]. In 2023, the country experienced multiple anthrax outbreaks in Kween and Kazo districts. The country drafted the National Strategy for Prevention and Control of Anthrax in Uganda, 2021-2025 which outlines the different roles to be played by different actors in the control of Anthrax.

[29] https://www.independent.co.ug/anthrax-disease-over-15-cases-confirmed-in-kween-district-2/

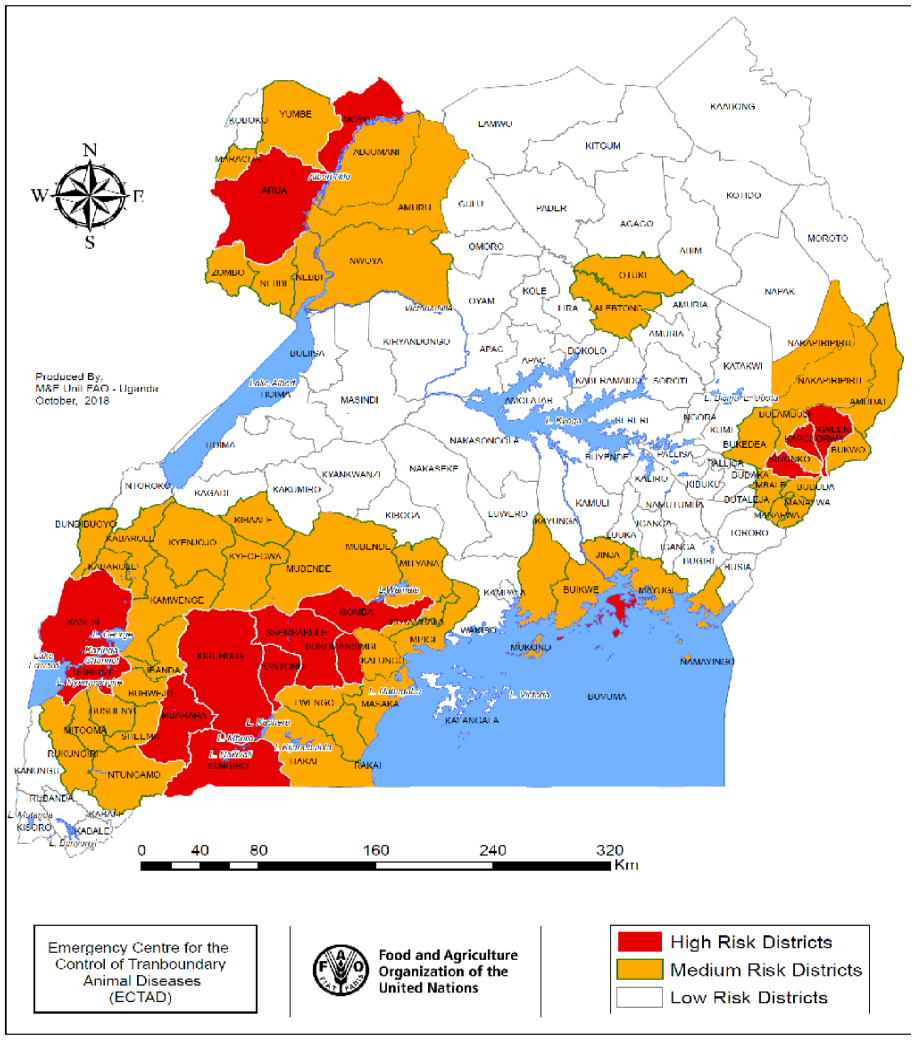


Figure 8: Risk Map for Anthrax Outbreaks in Uganda 2008-2018

Source: Draft National Anthrax Control Strategy

Ebola virus disease (EVD): The first EVD outbreak in Uganda occurred in Gulu in 2000 where 425 cases were reported. The second outbreak occurred in Bundibugyo in 2007 where 149 cases were reported with 36 deaths, (Case Fatality Rate (CFR) = 24%), subsequently in 2010 there was an outbreak in Luwero district with a single case fatality (CFR 100%); while an outbreak in Luwero with 7 cases reported resulting to 4 deaths (CFR = 57%). In 2012 in Kibale district, the outbreak involved 24 cases with 17 deaths (CFR = 70.8%). In 2019, following an outbreak in the neighbouring Democratic Republic of Congo (DRC), Uganda experience a 6th outbreak of EVD resulting from an importation of 3 cases (CFR = 100%).

On September 20th , 2022, the Uganda Ministry of Health declared an Ebola outbreak in Mubende District caused by the Sudan Ebola virus strain. This was the seventh Ebola outbreak. The Ministry of Health contained the SVD in a record 69 days through concerted efforts of Government and partners. On January 11th ,2023, the country

declared the Ebola outbreak over after two incubation periods without additional cases. By the end of the outbreak, the country had registered 164 cases (142 confirmed and 22 probable), 55 confirmed fatalities, and 87 recovered patients.

Marburg Virus Disease: The first outbreak of Marburg virus disease was reported in 2007 among miners in Kamwenge district, Western Uganda. The second was reported in 2008, when a tourist from the Netherlands on holiday in Uganda, was infected after visiting caves inhabited by bats, and died later on her return back to the Netherlands. Other outbreaks were reported in Kabale and Mbarara (2012); Mpigi (2014) and Kween (2017).

Rift Valley Fever (RVF): The disease was first identified in Uganda in 1946 in Nakiwogo and Bunono, Entebbe. In 2016, another RVF outbreak was recorded in Kabale South-western Uganda. In 2017, several sporadic cases of RVF were reported and confirmed in the districts of Mityana, Kyankwanzi, Kiboga and Kiruhura. Meanwhile in 2018, Arua, Kween, Kiruhura, Buikwe, Isingiro, Ibanda, Sheema, Kasese, Sembabule, Mubende, Mbarara, Rakai and Lwengo districts were affected by RVF. In 2021, several RVF outbreaks were reported in Kiruhura, Kyegegwa and Moyo districts (MoH). Rift valley fever outbreaks reported in Wakiso district in 2022. In 2023, there were reports of Rift Valley Fever outbreaks in Nakaseke, Kazo and Kabale districts. These outbreaks normally involve few numbers of cases ranging from one to five cases. The country is likely to continue experiencing sporadic cases of Rift valley fever particularly in the cattle corridor districts.

Crimean Congo Haemorrhagic Fever (CCHF): The first confirmed human case of CCHF in Uganda was in Agago district in 2013, thereafter there were other confirmed outbreaks in Kiboga (2017), Nakaseke (2015, 2017 and 2018), Luwero (2017 and 2018), Ssembabule (2018), Isingiro (2018), Masindi, Kiruhura, Wakiso and Lyantonde (2019). In 2022, the country experienced cases of CCHF in districts of Sembabule, Lwengo, Nakaseke and Nakasongola. The detection of CCHF is attributable to the country's strategy of enhanced VHF surveillance.

Food poisoning: A number of different ministries, departments and agencies have the responsibility for food safety in Uganda. The legislations covering the different sections of food safety are segmented and need updating. There is limited awareness around food safety issues among the population from the small-scale primary producer right to the consumers. Lack of awareness, weak law enforcement and coordination affects the sensitivity of the surveillance system for food safety. Uganda reported a food poisoning outbreak in Lamwo district in August to September 2019

among refugee and host communities as a result of consuming food aid contaminated by a weed[30].

Antimicrobial Resistance (AMR): This is a core Global Health Security threat that is clearly described under the International Health Regulations (IHR) 2005. Countries must take on the responsibility to establish antimicrobial surveillance systems in their countries as guided by the WHO-GLASS guidelines. In 2018, Uganda embarked on a strategy to implement AMR sentinel surveillance leveraging on the minimal capacity at selected Regional Referral Hospitals (Arua, Mbarara, Kabale, Mbale) and the National Microbiology Reference Laboratory.

Governance for implementation of AMR as defined by the National Action Plan for AMR within the human health sector has been implemented by the National Antimicrobial Resistance Sub Committee. AMR sector specific surveillance activities have been implemented by the National Health Laboratory Diagnostics Services (NHLDS) through its National Microbiology Reference Laboratory and the regional referral hospital laboratories as sentinel sites for AMR surveillance. These sentinel sites generate considerable AMR data for facility based antibiograms and inform Medicines and Therapeutic Committees (MTCs) interventions.

Rabies is one of the priority zoonotic diseases in Uganda. The Ministry of Health and Ministry of Agriculture, Animal Industry and Fisheries surveillance systems capture animal bites as a proxy indicator. Rabies disease is endemic in Uganda. Almost every year, each district in Uganda will report at least one animal bite. The most affected districts include; Busia, Mbale, Masaka, Mukono and Wakiso (MoH Weekly Epidemiological bulletin). The prevalence of rabies in the animal sector remains unknown due to low reporting rates by the districts[31].

Nodding Syndrome: Nodding disease or nodding syndrome is a recent, little-known disease which emerged in Sudan in the 1960s. It is a mentally and physically disabling disease that only affects children, typically between the ages of 2 and 16. It is currently restricted to small regions in South Sudan, Tanzania, and Northern Uganda. The country has established centres for caring for the disease and is conducting research in partnership with the academia to find a cure.

Hepatitis E: In October 2007, an epidemic of hepatitis E was suspected in Kitgum District. This outbreak started in Madi Opei sub county of Kitgum District, and progressed to become one of the largest hepatitis E outbreaks in Africa and globally[32]. By 2009, a cumulative number of 10,172 Hepatitis E cases were reported in Kitgum

[30] https://www.researchsquare.com/article/rs-198802/v1
[31] https://pubmed.ncbi.nlm.nih.gov/33872314/
[32] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2874362/

district. The cumulative deaths were 160, thus a CFR of 1.6%. This outbreak spread to Napak district of Karamoja and between 2013 and 2014, a total of 762 Hepatitis E cases including 20 deaths [CFR 2.62%] were reported. Most of the deaths 60% (12/20) deaths affected pregnant mothers. In both districts access to safe and clean water were major bottlenecks that potentiated both prevalence and transmission of Hepatitis E.

Earthquakes: There have been registered seismic tremors in the Albertine region since the 1960s. However, these have not resulted in heavy losses. In 2016, there was an earthquake of a magnitude of 5.3 on the Richter scale that affected the East African region with an epicentre in Bukoba in northern Tanzania. This affected the areas of Rakai, Isingiro among others and destroyed over 100 houses.

Terror attacks: In 2010 football fans and revellers watching the World Cup finals at Kyadondo Rugby Grounds and Ethiopian Village Restaurant in Kampala City were attacked by terrorist bombings where over 74 persons were killed and hundreds wounded[33]. There were two recent bombings in November 2021 in Kampala that resulted in seven deaths and several others injures[34].

Fall Army worm: Fall Armyworm (FAW) (*Spodoptera frugiperda*), FAW was first reported in Uganda in June 2016 in Kayunga, Kasese and Bukedea districts, and by end of 2017, the pest had spread to all the districts. FAW is a migratory, highly polyphagous pest capable of feeding on more than 80 plant species with cereals (maize and sorghum) being the most preferred hosts. In Uganda, the pest has been observed feeding on maize, sorghum, sugarcane, rice, napier grass and rhodes grass. FAW is migratory and adult moths can cover over 500km before oviposition. The pest can persist in an area throughout the year where suitable environmental conditions and hosts exist. Thus, with this conducive environment, FAW is likely to build permanent and significant populations making complete eradication of the pest impossible[35].

Industrial and Technological Hazards: Chemical spillage, water and air pollution from industrial activities and releases pose threats to human, animal and ecosystem. Toxic chemical spills, effluents and discharges from industries, fuel stations, oil and gas production and refinery, mines, flower green houses, fertilizers and pesticides from agricultural farms often end up somewhere in the food chain and water sources. Reported cases of spillage from the Kilembe mine ends up in Nyamwamba River whose water is used for domestic, animal and recreation use. There was a suspected case of organophosphate poisoning in flower farms in the year 2018.

[33] Uganda 2010 bombing: Five given life in jail - BBC News
[34] Kampala suicide attacks kill three and injure dozens - The Washington Post
[35]https://agriculture.go.ug/wp-content/uploads/2019/05/FAW-Brochure_MAAIF_DCP_revised_April_2018.pdf

2.4 Health System Organization

The total of 6,937 Health facilities and special clinics from 146 local governments. 45.16% (3,133) of health facilities are Government owned, 14.44% (1,002) are Private and not for Profit (PNFP) while the remaining 40.29% (2,795) are Private for Profit (PFP) and 0.10% (7) community-owned facilities. The Government and PNFPs are mostly higher levels of health facilities while the Private for Profit facilities majorly consists of lower levels (HC IIs and clinics). There are two National Referral Hospitals, 13 Regional Referral Hospitals, three Referral Hospitals, 163 General Hospitals, 222 Health Centre IVs, 1,574 Health centre IIIs, 3,365 Health Centre IIs, 1572 Clinics and 23 Special Clinics from TASO, AIDS Information Centre (AIC) and Children's AIDS Fund Uganda (CAFU)[36] as indicated in the **figure 9** below:

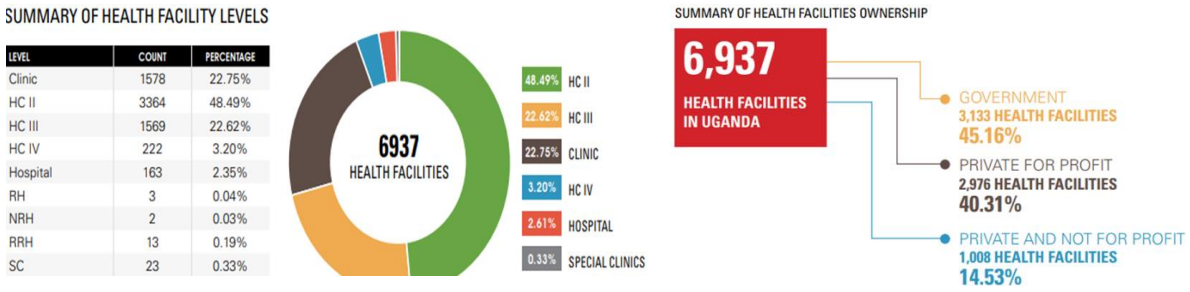


Figure 9: Summary of Health Facility Levels, Numbers and Ownership in Uganda, 2018

2.4.1 Structural organisation of the national health system

The structure of the national health system includes national, regional, district, health sub district and community (Village Health Teams) levels. The centre is composed of MoH headquarters and semi-autonomous institutions that is the National Referral Hospitals, National Medical Stores, National Drug Authority, Uganda National Health Research Organisation, Uganda Virus Research Institute and the Health Service Commission.

The cabinet, parliament and the Senior Top Management of the MoH provides the strategic policy direction. This level sets the country's national health policy direction in line with the president's manifesto. It takes into consideration broader government objectives including resource mobilisation.

The Top Management Committee and the Health Policy Advisory Committee (HPAC) provide operational policy direction for implementation of health priorities. The

36 http://library.health.go.ug/publications/health-facility-inventory/national-health-facility-master-facility-list-2018

senior management committee through the Technical working groups provide technical direction for planning and implementation of government policies. The Regional Management Committees are responsible for coordination, quality assurance, support supervision and technically supports health service delivery at regional referral hospitals in the country.

The District Health Management Team (DHMT) effectively coordinates all health delivery services and other stakeholders in the district. It is responsible for planning, organising, implementation, monitoring and evaluation of all health care services in the district in line with the national policy and standards. Health Sub-district Management Team: Like the DHMT, this committee is responsible for effective coordination of all health service delivery and players at the health sub district level. It is responsible for planning, organising, implementation, monitoring and evaluation of all health care services in the health sub-district level including provision of quality primary health care. A detailed MoH governance and management structure is indicated **(Figure 10)** below;

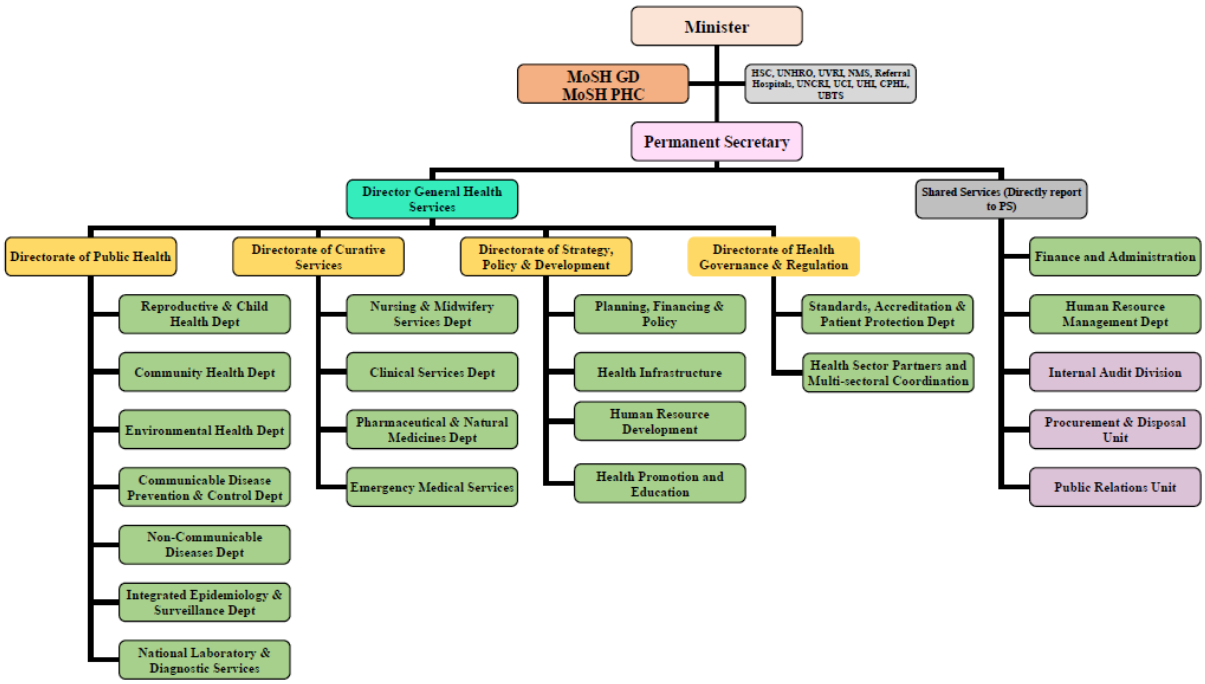


Figure 10: Ministry of Health Governance and Management Structure

2.4. 2 Health Information System

The health information system in Uganda is both electronic and paper based. The country currently uses the District Health Information System (DHIS-2), which is an electronic web-based reporting mechanism as its primary reporting mechanism. It also uses the electronic Integrated Disease Surveillance & Response (eIDSR) systems for capturing surveillance data for Public Health Emergencies (PHEs) incorporating

the mTRAC, Health Management Information System (HMIS), Short Message Service (SMS) and electronic data analysis and reporting. HMIS reporting tools are revised periodically to take care of changing needs for data of various stakeholders. HMIS reporting is weekly, monthly, quarterly and annually. MoH conducts periodic surveys for specific diseases, hazards and associated health service availability and readiness. eHealth has become a strong area of focus, with the national e-health technology framework completed and draft e-Health strategy developed.

A zoonotic disease information management system requires collaboration between Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) and MoH. Currently in animal health sector, two electronic information systems are in existence that is Animal Resources Information System (ARIS-2) developed by the African Union (AU-IBAR) and Emergency Prevention System (EMPRES-i) developed by FAO as a global animal health information system to support veterinary services by facilitating the organization and access to international, regional, and national disease data and information. There is still a gap of linking the animal and human information systems. There are initiatives under the National One Health Platform to integrate animal and human disease surveillance systems to achieve interoperable surveillance systems.

2.4.3 Health Financing

Funding for public health emergencies is through the Government of Uganda Medium Term Expenditure Framework (MTEF). Other sources of emergency funding come from development partners, private sector, communities and individuals.

2.4.4 Human Resources for Health

Uganda has relatively well-developed human resource capacity to respond to disasters of public health concern. Frequent outbreaks have contributed to the development of human resource capacity. IDSR for all health facility staff in all the districts has been very crucial in developing human resource capacity for outbreak control. There are an estimated 1.55 health workers per 1,000 persons, which is below the WHO cut off of 2.28 per 1,000 persons. Thus, the country is considered as having a critical shortage of human resources for health. The health workforce is still a key bottleneck for the appropriate provision of health services, with challenges in adequacy of numbers and skills, plus retention, motivation, and performance.

Efforts by the GoU and Partners have facilitated recruitment of the much-needed staff increasing the proportion of approved posts from 56% in 2010 to 69% in 2013/2014. It is important to note that these same HR are critical not only in health care provision but also in the management of PHEs.

There are a number of capacity building programs including the frontline and advanced epidemiology training, Laboratory, biosecurity and biosafety trainings for health workers in Uganda. However, most of the trained epidemiologists end up in the diaspora and other international organizations with only a few in the public health sector (JEE Report, 2017). Despite the progress in building capacity, there is still inadequate human resource capacity from national to health facility level especially in response to simultaneous/ concurrent events. Retention and motivation of health workers remains a challenge and affects the capacity to prepare and respond to public health events adequately. Progress has been made in incorporating IDSR, Public Health laws, Biosafety Biosecurity, AMR and disaster management modules in pre-service training.

In addition, there are numerous trainings in the animal health sector, most of the graduates passed out are employed by both the public and private sector which strengthens veterinary services at sub-national level. However, there are still insufficient veterinarians and para-veterinarians to occupy all the existing posts in the districts. There is need to review the current production and health sectors staffing norms at national and district levels to address the human resource gaps.

The FAO introduced through MAAIF a four-months in service field training program for veterinarians (ISAVET) in the country to build capacity in animal disease outbreak disease detection and response. There is need to conduct routine workforce development strategic planning.

2.4.5 Service Delivery

The provision of health services in Uganda is decentralised with districts and Health Sub-districts (HSDs) playing a key role in the delivery and management of health services at those levels. Service delivery is offered through a private and public partnership. The national level plays the role of strategic guidance, policy formulation, resource mobilisation, stewardship, human resource capacity development, monitoring & evaluation, coordination of health research and collaboration with other MDAs on health-related matters. The national level also coordinates provision of national health services including health emergency preparedness and response and epidemic prevention and control. At community level, the VHTs provide community mobilisation and healthcare support.

2.4.6 Essential Medical Products and Technologies

All health supplies and commodities for public health facilities are procured, stored and distributed by the National Medical Stores (NMS). There has been a steady improvement in the availability of health products, as measured by the availability of

tracer commodities in the HMIS data. All health supplies and commodities for PNFP are procured, stored and distributed by the Joint Medical Stores (JMS) and Medical Access Uganda Limited (MAUL)[37]. However, there are private pharmaceutical companies, pharmacies, individuals and private facilities that procure and import health supplies and commodities directly. The National Drug Authority (NDA) is the body that is mandated with the regulatory role for health supplies and commodities before they can be used by consumers.

2.5 Community health programmes and strategies

Community Disease/Event Based Surveillance: It is a community surveillance mechanism undertaken by community resource persons which include Village Health Teams (VHTs) or Community Based Animal Health Workers (CBAHWs), alternative complementary medical practitioners, private clinics and private pharmacies) with the aim of enhancing reporting of diseases or events within the community. It is based at village level and each of the VHTs report to the nearest health facility.

In animal health, surveillance is done by the veterinary practitioners that is; animal husbandry officers, veterinary assistants who report to the sub county veterinary officers. These undertake participatory epidemiological surveillance as well as syndromic surveillance. The Karamoja sub region is the only region with community-based animal health workers (CBAHWs) as a cadre of animal health workers equivalent to VHTs. Despite their services, continued capacity building must be provided to enhance their performance.

Linkages between communities and wildlife: This strategy aims at solving the human-wildlife conflict in communities near conservation areas. Through this strategy, communities are sensitised and interface between wildlife and domestic animals is minimised, hence reducing incidences of zoonotic diseases. This strategy also involves conducting disease surveillance in the wild life.

Other community-based programs include: Nutrition (Targeting under 5-year olds, expectant mothers and Human Immunodeficiency Virus (HIV) patients), water and sanitation (targeting improvement in access to sanitation and safe water coverage), immunisation programs (targeting the under 5-year olds, expectant mothers and adolescent girls) with an objective of preventing common vaccine preventable diseases, and animal rabies vaccination programs in districts.

[37] https://www.nms.go.ug/index.php/client-services/publications/category/11-resources

2.6 National Public Health Risk Profile Assessment

Risk profiling exercise was conducted in Uganda with support from WHO-AFRO using a recently developed Strategic Tool for Assessing Risks (STAR) in December 2020. The tool enabled Uganda to integrate evidence-based approach to risk assessment in a comparable, reproducible and defensible manner. It is guided group analysis and consensus and facilitate data entry on threats and enables prioritization of major hazards in the country.

The STAR report provided evidence of potential needs for strengthening national capacities in emergency preparedness and response. Landslides, floods, influenza and influenza like illness (including zoonotic influenza, COVID-19 and new subtypes of influenza and corona viruses) and accidents (traffic and marine) were classified as very high risk. Cholera (including all water borne diseases e.g. typhoid), food poisoning, Yellow Fever, anthrax, antimicrobial resistance, VHF (Ebola, Marburg) and drought were classified as high risk. Details can be accessed in the report.

Chapter Three

3. Detection of Alerts, Rapid Risk Assessment and Grading

3.1 Surveillance and early warning systems

This chapter covers detection of alerts, rapid risk assessment and grading of public health emergencies.

3.1.1 Existing epidemiological surveillance system

Uganda is currently implementing the 3rd Edition Technical Guidelines (TGs) for Integrated Disease Surveillance and Response (IDSR) which remains the main vehicle for preparedness and response to public health. Integrated Disease Surveillance and Response is a strategy for IHR implementation using both indicator (IBS) and event-based surveillance (EBS) systems. Routine surveillance data is collected and reported to MOH using the Health Management Information System. However, there are several mechanisms for reporting this data from sub national to the national level, for example electronic systems including mTRAC and eIDSR. There has been remarkable improvement in reporting of health surveillance data.

Media reports are also scanned for events that require follow up and verification. There are other information sources such as Program for Monitoring Emerging Diseases (ProMed), World Animal Health Information System (WAHIS – *OIE*), Global Public Health Information Network (GPHIN), Animal Resources Information System (ARIS – *AU-IBAR*), and the WHO's Event Information System (*EIS*). Alerts reported through the mTRAC or other EBS sources are verified by the district, MOH department of Integrated Epidemiology Surveillance and Public Health Emergencies (IES & PHE) and PHEOC. Using One Health approach, a multi-disciplinary Rapid Response Team (RRT) is then sent out to investigate the outbreak. The DGHS is informed and may constitute the NTF as appropriate.

Uganda implements sentinel surveillance sites for malaria, HIV/AIDS, influenza and influenza like illnesses/severe acute respiratory illnesses (ILI/SARI), AMR, VHF; and acute febrile illnesses (AFI). Information from these designated sites enhances the national early warning systems. There are on-going national efforts to establish sentinel sites to detect other diseases and events of public health importance, and harmonize with existing sites.

The animal surveillance is composed of the paper based (indicator based) and electronic reporting. Both systems are challenged with reporting and accessibility

across the country. Consequently, there is a need to strengthen both systems in terms of access, reporting and make them interoperable with the human surveillance system.

3.1.2 Early warning systems for non-infectious hazards

The country has a Uganda National Integrated Early Warning System (U-NIEWS) which disseminates information through a bi-monthly early warning bulletin published and disseminated by National Emergency Coordination and Operation Centre (NECOC) under the OPM. The bulletin provides national multi-hazard early warning information highlighting both information and forecasting from a number of sources including PHEOC, Uganda National Meteorological Authority (UNMA), MAAIF, Conflict Early Warning and Early Response Unit (CEWERU) and other government agencies and partners. The bulletin provides early warning for health, technological, conflict, geological and hydro-meteorological hazards and disasters. U-NIEWS information is shared amongst all stakeholders and can be used to forecast various scenarios like weather and climate, crop and pasture conditions as well as their consequences such as food insecurity and public health related diseases. This information forms a baseline for disaster and emergency planning at local and national levels.

The Chemical, Biological, Radiological, Nuclear and Explosive events (CBRNe) are coordinated by Ministry of Gender, Labour and Social Development under the OSH department. The CBRNe and Nuclear Biological and Chemical (NBC) Regiment of the UPDF/MODVA have well trained surveillance and response teams. These are attached to police stations and selected border points. These centres screen for hazardous materials such as Toxic Industrial Chemicals (TIC), and biological, radiological, nuclear and explosive substances. The Government Security Officer under the Ministry of Internal Affairs is mandated to raise awareness and inspect sites with potential chemical, radiological, biological, nuclear and explosive hazards. Triggers from the community on chemical, radiological, biological and nuclear events are reported to this security officer who is in charge of verification, investigation and activating response.

The Radiological Emergency and Response Committee under the Atomic Energy Council ensures that arrangements are in place for a timely managed, controlled coordinated and effective response to any nuclear and radiological emergency at the scene. The committee has membership from the Directorate of Counter Terrorism in Police, NBC-UPDF among others.

The government of Uganda has regulatory frameworks for food quality and safety. The country has the International Food Safety Authority Network (INFOSAN) focal point housed in the MoH with a mandate to monitor food quality and safety in the

country. This network is run under MoH, with representatives from other MDAs including Ministry of Internal Affairs. Collaboration between the various ministries and stakeholders is currently being strengthened through development and implementation of MOUs.

3.1.3 Reference laboratory network for priority pathogens

There is adequate capacity for laboratory sampling for confirmation of PHEs. The country has a number of internationally accredited national reference laboratories, namely; National Microbiology Reference Laboratory, Uganda Virus Research Institute (UVRI), the Supra National TB Reference Laboratory (SNTRL) and National Animal Disease Diagnosis and Epidemiology Centre (NADDEC). These laboratories are mandated to test and confirm these pathogens and are connected to the sub-national laboratories around the country by a national transportation system which utilizes the 'hub' system of laboratories and a bus courier. The national human health laboratory transportation network needs to include animal health samples.

Other laboratories include; Directorate of Government Analytical Laboratories (DGAL) for forensic testing (serves as the national poison centre), Queen Elizabeth National Park Laboratory for wildlife animal testing, Mulago National Referral Hospital Pathology/Histopathology laboratory for histopathology, National Crop Resources Research Institute (NaCRRI) for crop disease testing and research and College of Veterinary Medicine Animal Resources and Biosecurity (COVAB). In addition, the country has a National Water Quality Reference Laboratory based in Entebbe under Ministry of Water and Environment. The country has two Biosafety level III laboratories based in Makerere University, College of Veterinary Medicine, Animal Resources and Biosecurity (Animal health) and Mbarara Epicentre (Human health).

There is need to strengthen capacity in the following areas: personnel competence for laboratory management, antimicrobial susceptibility testing and resistance surveillance, laboratory information management system, quality management system and accreditation, biosafety and biosecurity. For international laboratory testing, there is an existing Memorandum of Understanding for transportation of special pathogen samples to CDC Atlanta, USA and National Institute of Health, South Africa. Samples are also referred to WHO supra-national reference laboratories for testing.

3.2. National and District Rapid Response Teams

The alerts once received at the Ministry of Health are channelled to the PHEOC which verifies them and relays information to all relevant actors. A multi-sectoral and multi-

disciplinary NRRT is then constituted by the Director General of Health Services and consultation with the National Task Force.

The National Rapid Response Team (NRRT) is responsible for investigation and confirmation of an outbreak. It's terms of reference are guided by the National Task Force and corresponding standard operating procedures (SOPs) for the hazard. This NRRT works in coordination with the District Task Forces. At District level, there is also a multi-sectoral and multi-disciplinary District Rapid Response Team which also verifies and investigates alerts received. This DRRT then communicates to the centre after verification. Efforts to strengthen regional mechanisms are on-going. The Integrated Epidemiology, Surveillance and Public Health Emergencies department coordinates efforts to of the NRRTs. Effective 2022, the country rolled out re-orientation of the rapid response teams at both national and sub national levels in line with the third version IDSR and lessons learnt from recent COVID 19 and SVD outbreaks.

3.3 Rapid Risk Assessment

This section of the framework entails a step by step process of conducting a rapid and timely assessment in response to the occurrence of a hazard. The DRRT constitutes competent and experienced personnel who conduct the initial rapid assessment of risk and continuously grades the event. The Rapid Response Teams shall conduct the initial rapid response assessment of the PHE which shall be used for the grading of the event. The risk assessment continues even during the response and continuously determines the grading of the event.

There are five steps to consider when conducting a rapid risk assessment[38]

1. Identify hazards i.e. anything that may cause harm or has potential to cause harm.
2. Decide who may be harmed and how
3. Assess the risks and take action
4. Make a record of the findings and action taken
5. Review the risk assessment

3.4. Grading of a Public Health Emergency

This model has been developed after a documentary analysis of several grading criteria including WHO emergency grading system and national multihazard plans of Namibia and Ethiopia. The grading system for public health hazards shall be

[38] WHO_HSE_GAR_ARO_2012.1_eng; WHO Emergency response framework – 2nd ed. 2017.

conducted after a thorough rapid risk assessment. The grading system determines the structures and resources to be mobilized for the response.

Triggers for grading:

- Any public health event with a risk assessed as high or very high
- Any public health event with a risk assessed as moderate or low, but that requires an operational response by MoH
- Any emergency situation for which the initial situation analysis indicates a health impact likely to require an operational response by MoH
- Any request for emergency assistance from a district.

Criteria for Grading

The grading is based on the following criteria;

i. Scale:
   - Number of reported cases
   - Population displaced and affected
   - Size of geographical area affected e.g. sub-counties affected
   - Level of destruction of infrastructure e. g. Bridges, Roads, Electric Poles
   - Level of disruption of social services e.g. Education, Health

ii. Deviation from the norm in predictable events e.g. flooding in areas that have never been flooded

iii. Urgency of mounting a response (severity)

iv. Complexity (complex situation, unknown pathogen, insecurity)

v. Available capacity and reputational risk

Public health hazards will be graded as below;

- **Grade 1 –** Event is of a small scale and low severity, still limited to one subcounty within the district and can be handled by the district. A few cases reported, and the nature of the event doesn't require full scale support from the national level.
- **Grade 2 –** Event is limited to one district with spread to more than one subcounty, and is of a moderate scale and low severity. The disease is still limited to a few sub counties within the district, with sporadic cases. This shall require; a) minimal support by the NRRT: guidance on activation of DTF and risk assessment, b) A potential scale-up plan in place to be deployed when needed.
- **Grade 3** - This event has spread beyond one district and has the potential to spread over a large geographical area within the country with extensive impact on population. The event is of moderate to high severity. Full response at the

national level is launched, the district and national rapid response teams are working together to ensure effective response to the event. The national task force sits regularly and/or OPM takes charge.

- **Grade 4** - The event has spread beyond one geographical region with extensive impact on population. The event is of moderate to high severity. There is also a risk of cross border spread. The strategic level is escalated to the Office of the President. The Office of the President is notified and retains the responsibility of declaring a State of Emergency. International assistance may be required.

Recommendations for the Grading process

- Grading of events is critical for resource mobilization and allocation.
- The grading of events is done by the NTF based on a risk assessment.
- The grade can be upgraded and downgraded periodically based on the evolving risk assessment.
- The scale of emergency needs to be continuously monitored so that appropriate action can be taken.

Chapter Four

4. Response

4.1 Multi-hazard Response Mechanisms

Response to public health emergencies is preceded by risk assessment, grading, planning, resource mobilisation and deployment. At the end of the response, after action review is conducted to document best practices, challenges, lessons learnt to feed into contingency planning. Within the Ministry of Health, the department of Integrated Epidemiology, Surveillance and Public Health Emergencies is responsible for ensuring systems are in place at national and sub-national level to prevent, detect and respond to Public Health Emergencies and also serves as the national IHR focal point.

4.1.1 Concept of Operations

Response mechanisms will be at three levels namely; Strategic, Operational and Tactical levels.

Strategic Level

There is a National Task Force that is responsible for coordinating all disasters. The President of Uganda is in charge and is the overall chair of the National Task Force. The function of chairing the national task force is routinely accomplished by the Prime Minister for all disasters. For public health emergencies/ outbreaks of moderate nature, this function is delegated to the Ministry of Health chaired by the Director General of Health Services.

At the district level, oversight will be provided by the DTF chaired by the Resident District Commissioner.

The Strategic level will carry out the following functions;

1. Provide overall direction of the response and monitor progress of the interventions.
2. Responsible for setting and achieving the objectives for the response.
3. Responsible for the operational coordination and implementation of the strategy.
4. Make and endorse policies required to enable the response.
5. Mobilise the necessary resources for the interventions.
6. Approve crisis communication materials, technical guidance and activities.
7. Coordinate with strategic levels of other Ministries, Departments and Agencies, partners in and outside the country.

Operational Level

The Operational level (Incident Management Team) working closely with the National Public Health Emergency Operations Centre (PHEOC) will carry out the following functions;

1. Develop and coordinate implementation of technical interventions including situational awareness and reporting to the strategic level
2. Develop plans to meet the strategic objectives.
3. Coordinate with other agencies in terms of response and resource mobilization
4. Recommend resource allocation and provide technical guidance to the tactical level.
5. Monitor and ensure technical quality of implementation of interventions and accountability

The PHEOC is replicated at subnational level and currently the country is scheduled to operationalise fourteen subnational emergency operations centres also called Regional EOCs. There six Regional EOCs that are currently operational namely; Arua, Mbale, Kampala Metropolitan Area, Masaka, Hoima and Fortportal. An additional six will be operationalised during the financial year 2023/2024. These include; Mubende, Jinja, Moroto, Lira, Mbarara and Kabale.

Tactical Level

The Tactical level (Field Response Teams) are the members that will implement the established strategic and operational goals and objectives. The District Task Force is responsible for Public Health Emergencies and Districts Disaster Management Committees (DDMC) is responsible for disasters. This level has the freedom and flexibility to decide course of action based on assigned objectives. The Tactical level will carry out the following functions;

1. Implement day to day public health actions using available resources.
2. Request for resources needed to complete assigned objectives from the operational level.
3. Coordinate local partners.
4. Reporting to and receiving feedback from the operational level.

4.1.2 PHEOC Activation protocol

The PHEOC forms an integral part of the IES & PHE department and supports the operational level to achieve strategic objectives of the response.

When the PHEOC receives and reports an alert to the DGHS, a multi-sectoral preliminary assessment team composed by the DGHS is deployed to conduct a risk

assessment. The risk assessment report contributes to the grading of the event. The grading level determines the activation level of PHEOC.

An Incident Management Team (IMT) is assigned by the NTF to coordinate the response to a specific public health emergency with support of the PHEOC team. The assigned IMT may comprise members of the NTF sub-committees, Subject Matter Experts (SMEs), Field Teams, and District Rapid Response Team members, among others. When the response is completed, the PHEOC is deactivated, continues with routine operations and the IMT is disbanded.

Authority to activate the PHEOC

The PHEOC is activated upon declaration of a public health emergency by the Director General Health Services. Activation of the PHEOC signifies the existence of a potentially serious public health threat, and the commitment of the MoH to provide resources to respond.

Conditions for Activation

The PHEOC is activated whenever one or more of the following conditions exist:

i. A confirmed outbreak of epidemic potential within the country.
ii. A large-scale disease outbreak of initially unknown aetiology.
iii. Public Health Emergency of International Concern (PHEIC) declared outside the country.
iv. A notifiable incident under IHR (2005).
v. Geographical dispersion – outbreak(s) reported across a large or diverse geographical area.
vi. When the event is grade II and above.

Command and control

The overall centre of command and control shall be vested in office of the Director General Health Services (DGHS) at strategic level. The DGHS appoints the Incident Commander, who spearheads activities of the IMT. This will be the command and control of the response at operational level.

This ensures effective response coordination of the PHE without omission of essential functions and/or duplication of efforts.

Incident Management System (IMS)

At the operational level, the Incident Commander is the overall decision maker for operations with guidance from the IMT. The IMT will work together with the NTF and its sub-committees (response pillars).

Coordination and management of the IMS

The IMT is comprised of five functional sections with responsibilities prescribed as below;

Table 2: Functional Sections of the Incident Management Team

Section	Responsibilities
Management/ Command	Overall coordination of the emergency response. The Incident Commander works hand in hand with the PHEOC Manager.
Operations	Comprised of sub-committee heads. Coordinates all operations of the emergency response through implementation of the Response Plan.
Planning	Collecting, evaluating and disseminating information, developing the Response Plan, operational budget, tracking resources and documentation.
Logistics	Coordinate provision of services, personnel, transport, equipment and Medical Counter Measures (MCM) to the affected areas, as required by the response. Logistics is also responsible for coordination of purchases and contracts that may be required to secure these materials or services.
Finance/Administration	Financial activities and other administrative aspects such as developing requests for funds, monitoring budgets, tracking personnel time, recruiting and managing surge capacity as well as documenting all expenditures during response and recovery efforts.

The IMS structure and national level will be replicated at subnational level and thus the District Task Force (DTF) or District Disaster Management Committee (DDMC) will be composed of replicate sub-committees as at National level. Under Operations the following are sub committees that can be activated:

- **Coordination sub-committee:** Responsible for the overall coordination, resource mobilisation including partnerships.
- **Surveillance and Laboratory sub-committee:** Responsible for all surveillance and laboratory activities that include; epidemiological case investigation, active case search, reporting, isolation and laboratory investigation.

- **Case Management sub-committee:** Responsible for Case management, infection prevention and control, safe and dignified burial, Mental Health, Water Sanitation and Hygiene and Psychosocial Support and Nutrition.
- **Logistics sub-committee:** Responsible for management of logistics and supplies for the response.
- **Risk communication sub-committee:** Responsible for Risk communication and community engagement during response.

Depending on the magnitude and nature, other subcommittees can be established as stand-alone subcommittees e.g. Case management can be split to include Water Sanitation and Hygiene, Psychosocial support, as independent sub committees. Also, other committees like vaccination, Continuity of Essential Health Services, Scientific committee, Strategic information, Research and Innovation and Human Resource sub pillars can be activated to address the prevailing needs of the response.

Note: Not all IMS sections will be activated or needed for every incident response. The IMT is expanded or contracted as determined by the Incident Commander during particular phases of the response.

4.1.3 Coordination during Response

4.1.3.1 Coordination at National Level

Coordination of all disasters and emergencies in the country is a mandate of the Office of the Prime Minister. The National Emergency Coordination and Operation Centre (NECOC) under the OPM coordinates preparedness and response activities of line ministries and provides overall guidance on Disaster Risk Management utilizing National Platform for Disaster Risk Reduction. However, coordination of response to public health emergencies is a delegated function to the Ministry of Health[39]. The National Task Force (NTF) with its secretariat at the MOH and the Public Health Emergency Operating Centre (PHEOC) take the lead. The NTF is chaired by the DGHS and co-chaired by the WHO Country Representative. The Director of Animal Resources (DAR) from MAAIF may chair the NTF when dealing with zoonotic disease outbreaks.

The National One Health Platform provides an avenue to coordinate public health response to diseases and events namely; Zoonotic diseases, Biosafety and Biosecurity and Antimicrobial Resistance. The National One Health Platform established in 2016 is comprised of three ministries and one agency: Ministry of Health, Ministry of Agriculture, Animal Industry and Fisheries, Ministry of Water and Environment and the Uganda Wild Life Authority, an agency under the Ministry of Tourism Wildlife

[39] The National Policy for Disaster Preparedness and Management. OPM, 2010.

and Antiquities. In line with global practice, the One Health approach can be expanded to include other sectors dealing with plant health and microorganisms.

The National IHR Focal Point shall be in continuous communication and collaboration with IHR focal points of contact from other relevant sectors before, during and after a response. In cases where the emergency occurs in more than one district, each of the districts will activate its own DTF with direct coordination and direction from the NTF. The NTF will mobilise resources (human, financial and other resources) to support response activities in districts with sub-optimal capacity. Below is an illustration of the coordination mechanism during PHEs **(Figure 11)**:

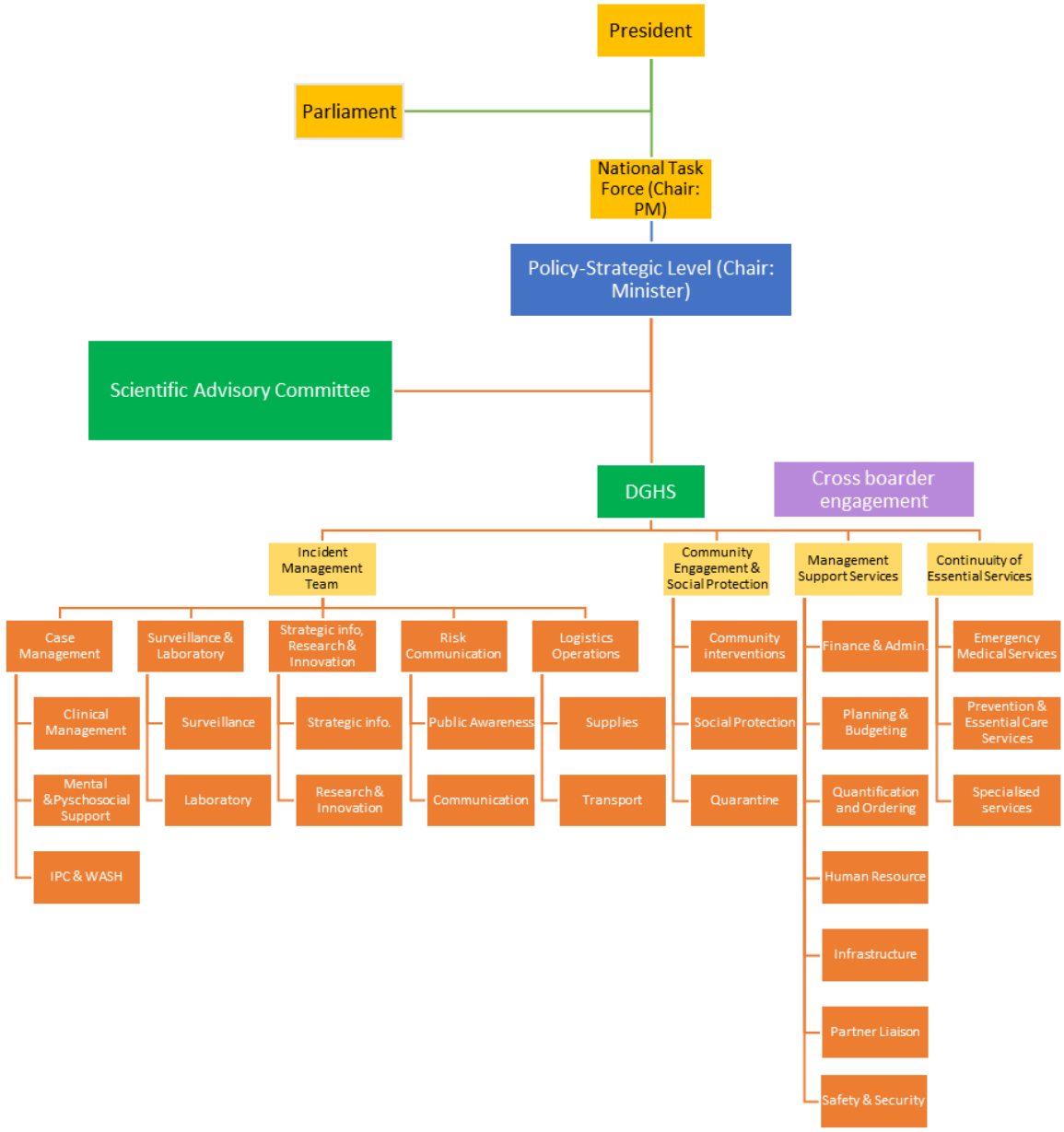


Figure 11: The Incident Management System at National Level

During outbreaks, religious, community, opinion and cultural leaders as well as traditional healers are engaged to augment active case search and also promote public awareness, advocacy and mobilisation within their communities. There are non-health actors who contribute to preparedness and response to Public Health Emergencies. These are from Ministries, Departments and Agencies, private sector, implementing and development partners, NGOs and community-based organisations. These actors are co-opted in the National and District Task Forces during response depending on the nature of the hazard. In the preparedness phase he frequency of meetings and activities of these structures reduce. **Figure 12** below is an illustration of the national coordination mechanisms for PHEs at policy and technical level.



Figure 12: Coordination of PHE Preparedness and Response in Uganda

In large scale disasters and emergencies (grade 3 and 4), the strategic level is convened by the President and composed of inter-ministerial cabinet committee on disasters and inter-ministerial technical committees. The National Task Force shifts to OPM when the disaster is graded 3 or 4.

4.1.3.2 Coordination at Sub-national Level

At district level, coordination of disasters is a function of the District Disaster Management Committee (DDMC) while the coordination of Public Health Emergencies is through the District Task Force (DTF). The National Task Force, District Disaster Management Committee (DDMC) and District Task Force are all multi-sectoral by composition.

The DTF is multisectoral and multidisciplinary comprised of similar sub committees as the National Task force. These sub committees are responsible for operational and tactical implementation of the response measures at districts and report to the chair of the DTF. The district mobilises implementing partners, community leaders, religious leaders, cultural leaders and all other stakeholders to support the response. Depending on nature and magnitude of the Public Health Emergencies, sub county parish and village task forces should be activated.

At the end of the response, the districts compile an end of outbreak report outlining the number of cases affected and mortality, logistics required, resources mobilised, lessons learnt and any other challenges encountered during the response. Lessons learnt should be integrated into their strategic plans/ work plans so as to enhance preparedness and resilience for future outbreaks. Affected district(s) are part of the National After-Action Review exercise since it's where the public health emergency happened.

4.2 Deployment of response resources (personnel and logistics)

Resource coordination is required because of fragmented resources both from local and international partners. The coordination sub-committee of the NTF will oversee deployment of personnel and partner support. Any personnel deployed will be part of the NRRT and seconded by the heads of each of the NTF sub-committees. All personnel deployed will be provided with clear terms of reference. All teams deployed must report to the PHEOC/NTF for briefing about the event, logistics and district entry protocols. All trainees (public health fellows, undergraduates, postgraduates, and researchers) will also report to the PHEOC/NTF and district authorities for briefing and coordination. This will enhance efficient use of resource and will foster clear command and control at the tactical level as well as effective monitoring implementation. All reports will be shared with the district and NTF. Deployment of logistics is through the logistics subcommittee. In addition, the country shall operationalise the medical counter measures plan to effectively deploy response resources (personnel and logistics).

4.2.1 Internal and External Deployment of Human Resources

External deployment of Ugandan human resources to support response to public health emergencies in other countries shall be done in accordance with the Public Service Standing Orders 2021[40]. Under circumstances where the country needs additional expertise including international expatriates, acquisition of specialised human resources shall be done in line with the prevailing labour laws and policies. Databases for human resource to support public health response to all public health emergencies is stored at PHEOC (NRRTs), UPDF, AEC, Police and other MDAs. In addition, the country shall operationalise the medical counter measures plan to effectively deploy human resources.

4.2.2 Surge Capacity during preparedness and response to emergencies

The health system is bound to be over whelmed by epidemics. The design of the health system social services collaboration arrangements is usually not prepared for a public health emergency on a big scale. Human resource needs to be carefully planned for with an extra work force that can be available in the event of emergencies[41].

4.3 Continuity of Essential Health Services during multi-hazards[42]

Disease outbreaks, manmade and natural disasters may interrupt essential health services (EHS). This multi-hazard preparedness and response plan will maintain primary healthcare services including immunization, antenatal care, skilled birth attendance and chronic care clinics for communicable and non-communicable conditions (NCDs). This is key to avoid excess and avoidable morbidity and mortality in the population. Case examples include stagnated, or reduced immunization, increased teenage pregnancy, and increased absolute number of maternal deaths due to the COVID-19 lockdown effects[43].

The MoH, DHTs and health facilities will sustain the delivery of EHS through existing networks as part of the response to the disease outbreak or disaster. Strategic actions required to harmonize and maintain EHS within the context of the disease outbreak or disaster will ensure the residents in Uganda continue to receive the essential care they need.

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[40] Public Service Act, 2008

[41] SARS in Hong Kong; From Experience to Action

[42] Government of Uganda (2022). COVID-19 response info hub: https://covid19.gou.go.ug/pillar3.html

[43] Uganda Ministry of Health (2021). Annual Health Sector Performance Report Financial Year 2020/21 http://library.health.go.ug/publications/-performance-management/annual-health-sector-performance-report-financial-year-202021

Strategic actions for the National Multi-hazard Preparedness and Response Framework for Public Health Emergency

i. Strengthen coordination, collaboration, and harmonization mechanisms for EHS continuity at the national and subnational levels.

ii. Prioritize and re-organize to maintain access to essential quality health services including but not limited emergency medicine and sexual and reproductive health. Elective surgery and chronic care clinics (HIV, TB, NCDs) may be suspended to minimize travel and congregation that increase risk of transmission or harm.

iii. Strengthen reporting and monitoring including conducting continuity of EHS surveys[44] of health service delivery to guide decision making and a checked response.

iv. Enhance capacity for delivery of essential and emergency medical services taking into regard the opportunity cost of the surge efforts. Recruitment of temporary workforce would be optimal as would public-private partnership for efficiency gains in equipment and human capital deployment.

v. Strengthen the occupational health and safety programme in health facilities including enhanced access to PPEs.

4.4 Financing for Public Health Emergencies

Financing of public health emergencies in Uganda will be governed by the Public Finance Management Act, 2015. This provides mechanisms for government institutions to access emergency funds and stipulates the responsible parties in the management of funds. In addition, funding for Public Health Emergencies shall be mobilised through private sector, development and Implementing partners.

Resource mobilisation

The sector ministries have funds for preparedness and response to public health emergencies within their mainstream budgets. Depending on the magnitude of the emergency, the Contingency Fund for disaster preparedness and response[45] will be accessed at the Ministry of Finance, Planning and Economic Development through the OPM upon presentation of a costed workplan. The National Task Force (Coordination Sub-committee) will co-opt development and implementing partners

[44] World Health Organization (2021). Pulse survey on continuity of essential health services during the COVID-19 pandemic. Interim report. -https://apps.who.int/iris/handle/-10665/334048

[45] Established by the National Finance Management Act, 2015

to provide additional funds and resources for the response. The guidance below provides mechanisms of access to emergency funds;

Grade 1 emergencies: The district task force provides a costed work plan to the Chief Administrative Officer (CAO) to fund response activities. However, the district may request for the necessary support from the MOH/MAAIF and Partners in the form of supplies, human resource and small seed funding with a clear justification.
Grade 2 emergencies: the district(s) should mobilise resources from internal sources. The central level and partners will provide the additional resources to support the response.
Grade 3 emergencies: The MoH with support from OPM and Partners will provide the full-scale support.
Grade 4 emergencies: The MoH with support from OPM and Partners will provide the full-scale support. Regional and international support can be solicited. The Office of the President (OTP) has the mandate to make express decisions as appropriate.

Access to funds at National level

In the line with the approved Incident response plan, a responsible officer requests for funds through in the Incident Commander and the vote controller. The request is submitted to the Permanent Secretary for authorisation as per the schematic **figure 13** below.

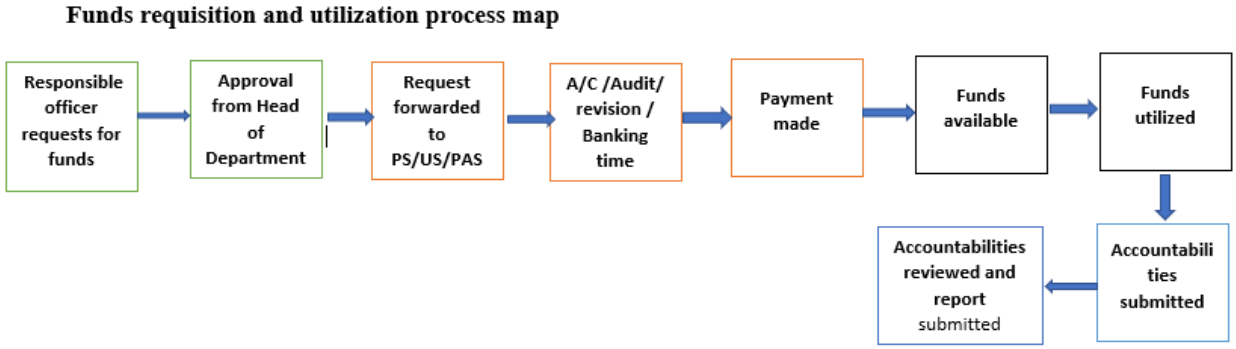


Figure 13: Process Map Showing Access to Funds

Access to district level financing and resource mobilisation

The decentralised structure of governance provides for local decision making at the district level. The CAO in the capacity of accounting officer for the district will provide oversight. This structure is also followed by the district health office/district veterinary officer. Financing at the district level follows the following algorithm (**Figure 14)**:

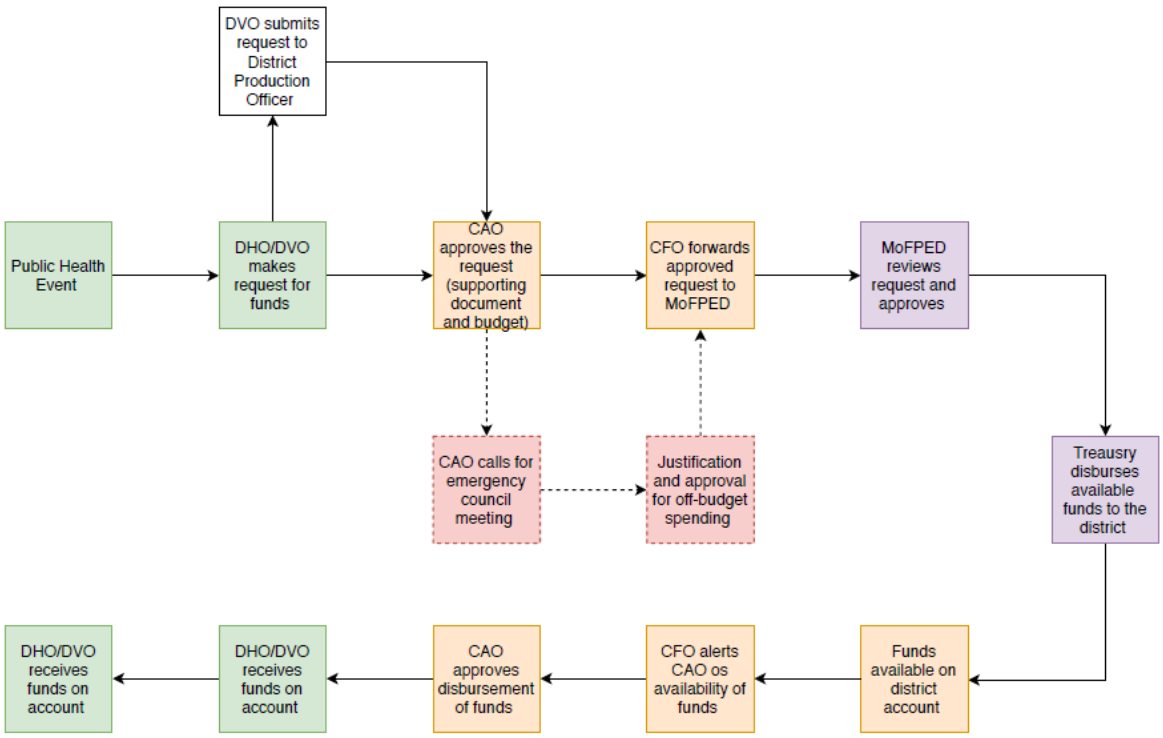


Figure 14: Financing Algorithm at the District Level

Funds for public health emergencies are sourced following the above channels to support timely response efforts within 48 hours as per IHR 2005 and IDSR requirements.

4.5 Risk and crisis communication

Effective communication is important in the management of emergencies and development of resilience to prevent and/or mitigate impact of disasters. A multi-level risk communication and social mobilization strategy will be deployed before and during emergencies.

There are designated officials at national and district levels, responsible for risk communication and social mobilization during emergencies. For each incident, the teams shall define risks, identify hazards, assess vulnerabilities, build capacity and promote positive behaviour. Use existing Information, Education and Communication (IEC) materials or develop new ones if the event is new.

4.6 Staff safety and security management

The safety and security of the responders should be guaranteed. The IPC committee under the Incident Management Team shall be responsible for the safety of the responders. Competent safety officers shall be assigned. It is important to undertake a security risk assessment in the affected areas and take appropriate measures. The security committee is instrumental in enforcing control measures.

4.7 Planning

An incident action plan shall be developed by the IMT to guide response in the first 72-hours. A detailed costed response plan shall be developed with subsequent activities and approved by the NTF to guide resource mobilization.

During the outbreak, daily Situation Reports shall be received from the field, reviewed and feedback provided. An end of incident report shall be made and shared with the response stakeholders. This report will be used to deactivate the PHEOC. After-Action Review will be conducted within 3 months from end of the incident.

4.7. 1 Information flow and reporting during emergency response

i. The policies and procedures associated with data and information flow and management shall be based on the existing MoH structures.
ii. The IMS chain of command provides a framework for the orderly flow of communication.
iii. National and district response teams will work together to share situation reports to the IMT using agreed reporting timelines and standard formats.
iv. All reports from the IMT to the media will be reviewed and approved by the Incident Manager, SMEs and the Public Relations Officer (PRO) and the DGHS prior to release.
v. All data collected from field teams and other sources should be forwarded to the IMT where it will be analysed and elevated to leadership as deemed appropriate.
vi. Scientific publication of the data will be authorised by the DGHS.

Figure 15 below shows the flow of information for the response team process during an incident response using the IMS.



Figure 15: Reporting Process and Flow of Information During an Incident Response

4.7.3 Departments/divisions/functions involved in emergency response

Several departments and divisions conduct various functions to support emergency preparedness and response.

1. The Integrated Epidemiology, Surveillance and Public Health Emergencies Department (IES & PHE) is responsible for capacity building for IDSR, IHR core capacities in the country and providing the IHR focal point. IES & PHE is responsible for early detection, investigation and confirmation of potential outbreaks and other public health threats or emergencies, data analysis, initial response to PHEs. The IES & PHE collaborate with the PHEOC to analyze any health alert information and to prepare and trigger other systems that may be needed for a response.
2. The Uganda National Health Laboratory Services (UNHLS), Uganda Virus Research Institute (UVRI), National Tuberculosis Reference Laboratory (NTRL), and the National Animal Disease Diagnostic Epidemiology Centre (NADDEC) shall be responsible for testing specimens to confirm the causative agents for outbreaks.
3. The Departments of Communicable Disease Control and Prevention (CDCP) and IES & PHE shall provide trained surge capacity as required for the broader scope of disease prevention, surveillance and emergency response. The department is responsible for providing technical guidance on prevention and control of

communicable diseases including immunisation services, malaria, Tuberculosis (TB) and HIV/ AIDS control.

4. The National Health Laboratory and Diagnostic services is responsible for collection and laboratory analysis of samples
5. Department of Human Resource is responsible for planning, recruitment, development, motivation for human resources for health. It also coordinates human resource audits to identify human resource gaps for emergency response.
6. The Department of Clinical Services shall provide technical oversight in the establishment of isolation units, provision of case management resources/protocols, ensuring infection control practices, safe burials and continuity of health services.
7. The Community Health Department (CHD) shall be responsible for social mobilization and service uptake.
8. The Health Promotion and Education Department shall be responsible for risk communication and health education to the public in liaison with the Public Relations Officer (PRO) and the DGHS.
9. The Division of Health Information (DHI) shall harmonize and coordinate the implementation of the integrated national health information system. This includes maintenance of paper as well as electronic documentation and standardizing IT requirements across the country for eIDSR. The DHI is also responsible for publishing disease trends and district and national league tables, and producing annual statistical reports.
10. Pharmacy Department shall coordinate the quantification, budgeting, procurement, distribution and monitoring of emergency medicines, supplies and medical counter measures during emergencies. The National Medical Stores (NMS) shall procure the supplies and deliver the necessary supplies to the affected areas/districts.
11. The Health Planning Department (HPD) shall budget for and mobilize financial resources (supplementary budgets) for control of PHE. The HPD will ensure a provision for readily accessible emergency fund for prompt management of outbreaks. The division of infrastructure is responsible for infrastructure development during preparedness and response phases including establishment of isolation facilities.
12. The MoH Accounts Division shall accelerate access of funds for public health emergency response.
13. The Public Relations Office (PRO) serves as the primary point of coordination and leadership for the MoH's risk communication response related to an incident. The PRO is responsible for ensuring rapid, effective, and consistent communications to internal and external audiences in response to public health emergency incidents.

14. Department of Standards Accreditation and Patients Protection (SCAPP) is responsible for quality assurance and standards for delivery of health services.
15. Department of Emergency Medical Services shall coordinate provision of emergency services including the national ambulance system.
16. Department of Maternal and Child Health is responsible for technical guidance on maternal and child health including maternal and neonatal surveillance
17. The Nursing Department is responsible for the professional standards of the nursing practice.
18. The Non-Communicable Diseases Department provides technical guidance on prevention and control of non-communicable diseases.
19. The Department of health sector partners and multisectoral coordination provides technical guidance on partnership and coordination of health care delivery in private facilities.

4.7.4 Primary Response Ministries, Departments, and Agencies

Additional support shall be provided by other stakeholders according to the emergency through linkages to Office of the President, OPM, MAAIF, MWE, UWA, NEMA, MOGLSD, Security, Finance, DGAL and other relevant MDAs as outlined below.

1. The Office of the Prime Minister—In charge of disaster preparedness, management and mobilization of resources from the government coffers and coordination of other MDAs involved in PHEs. Provides an early warning system on suspected PHEs.
2. Ministry of Finance, Planning and Economic Development—Responsible for allocating budgets for PHEs as well as mobilizing for supplementary budgets for PHEs.
3. Ministry of Health—Responsible for identification, declaration and response to public health emergencies related to human health with partners and stakeholders.
4. Ministry of Agriculture, Animal Industry and Fisheries—Responsible for identifying, declaring and respond to public health emergencies within the animal population. For diseases of a public good, MAAIF procures, stores, and distributes veterinary medical supplies. Private good diseases, MAAIF guides on the medical supplies to be used by the farmers. The MAAIF procurement unit charged with the procurement and distribution of supplies for PHE response in the animal sector. Management of reverse logistics that includes

excess, unused and expired items for appropriate safe disposal and proper re-distribution.

5. Ministry of Defence and Veteran Affairs, Uganda Peoples Defence Forces (UPDF)—Provide security and escort for logistics as guided by the NTF. To support civil authority during PHE through its MCM supply chain system as required by the NTF. UPDF will also provide surge capacity
6. Ministry of Internal Affairs: Delivers internal security, law and order, peace and stability in Uganda where citizenship is protected and preserved. DGAL provides specialised scientific analytical and advisory forensic services to ensure general public safety. Uganda Police Force—Provides transport, security, and escort for logistics as guided by the NTF. Also provides a buffer for surge capacity with regard to logistics (transportation and warehousing) and medical support;
7. Ministry of Local Government—Coordinates and respond to PHEs.
8. Ministry of Security—Responsible for investigation and analysis where there is suspected foul play, and technical support in policy analysis. They do safety and security investigation and monitoring of MCM leakages.
9. National Medical Stores—responsible for procurement, storage distribution of medicines and medical supplies and vaccines (for the public sector) on behalf of the MoH. It's also responsible for management of the national strategic stockpile and reverse logistics.
10. Joint Medical Store—will provide surge capacity for storage and distribution of MCM. Procures, stores, and distributes medicines and medical supplies
11. Ministry of Water and Environment—Provide safe water, sanitation and hygiene services to the population and support surveillance and response through its control of activities relating to water and sanitation by its directorates and agencies.
12. Uganda Wildlife Authority—Responsible for surveillance activities within the wildlife sector and support MAAIF in response to PHE in the animal sector. They are responsible for detection and response to PHEs.
13. National Drug Authority—Responsible for ensuring that the population has access to safe, efficacious, and cost-effective drugs and for regulating the fast-track importation/exportation of medical supplies.
14. Uganda Revenue Authority—Responsible for collecting revenue on all imports and exports, so can provide waivers for MCMs imported for PHEs that have overwhelmed the normal supply chain operations. Responsible for clearance of MCMs during PHEs.

15. The Ministry of Gender Labour and Social Development (MGLSD) – The department of OSH houses the National Authority for Implementation of the Chemical Weapon Convention that oversees the safe management of toxic chemicals in the country in order to protect people and the environment.
16. Ministry of Information Communication Technology
17. Media houses -
18. Ministry of Education and Sports – In collaboration with ministry of health develop public health promotional and health preventive materials and dissemination in educational institutions.
19. Other partner (Development partners, NGOs, Faith Based Organisations (FBOs), Private Sector, Cultural Institution) – These are involved in direct public health implementation, community mobilizations for public health access and behaviour change and financial support;

Partners—Support existing MCM supply chain mechanism relevant to preparedness and response to PHEs.

4.8 Laboratory support to Response

There is a functional laboratory sample collection, labelling, packaging and transportation system operating in all districts that utilizes the 'hub system' of laboratories and a bus courier for all samples. During response to improve turnaround time mobile field laboratories are deployed. Rapid diagnostic or confirmatory tests may be conducted to guide case management. For pathogens that need a higher level of biosafety and biosecurity, samples are only processed in the respective reference labs. Furthermore, there is need to build comprehensive laboratory capacity for the management of chemical, biological, radiological and nuclear public health threats. The National Poison Information Center under the Directorate of Government Analytical Laboratories handles all cases of poisoning and has a database for all antidotes (Toll Free Line: 0800100450). However, there is need to link this Center to the National Ambulance Services and additional human resource for effective 24-hour operation.

4.9 Biosafety and Biosecurity

Biosecurity is important in order to secure infectious agents against those who would deliberately misuse them to harm people, animals, plants or the environment. There is a comprehensive program of biosafety and biosecurity implemented through a whole of government approach with particular provisions of usage, storage, disposal according to bio-risk management practices.

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 while 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 laboratories 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. The National Veterinary Reference laboratory at NADDEC and regional reference Arua diagnostic laboratories have been incorporated onto the National Specimen Transport and Referral Network but there is need to review hub guidelines to include animal samples on the National Specimen Transport and Referral Network.

4.9.1 Biobanking

The inventory is managed by UNCST. In 2021, Government of Uganda through the Minister of Science Technology and innovation launched the National Research Biobanking guidelines. The purpose was to streamline the collection of biological or genetic material data and information used in scientific research. There are two biobanks in the country at Makerere University, College of Health Sciences and Central Public Health Laboratories (CPHL). There is a biorepository at UVRI.

Storage and archival of biological material: Biological material generated or collected during a public health event/outbreak will be protected, controlled and accounted for, to prevent their unauthorised access, loss, misuse, theft or intentional release. This is done in accordance with the National Biobanking Guidelines 2020.

4.10 Risk Communication and Social Mobilization

Uganda has a risk communication strategy and IEC materials on major health hazards that have been translated into major local languages. Management of and

collaboration with the media is relatively strong. However, communication on risk management and social mobilisation are still in adequate.

4.11 Capacities at Points of Entry (PoE)

Uganda has eight designated points of entry namely: Entebbe International airport (EIA), Busia, Mpondwe, Mirama Hills, Mutukula Malaba, Elegu and Katuna for IHR capacity building. There over 53 gazetted and un-gazetted lake/ground crossing points where IHR capacity building needs to be undertaken. The MoH is in the process of establishing a national program to support the establishment and maintenance of port health services. Entebbe International Airport provides port health services through Public Private Partnership. The airport has capacity to scale up health service provision during emergencies. Cross border surveillance teams address the un-gazetted border points through regular coordination meetings. Furthermore, information sharing portals are being strengthened with the neighbouring countries.

4.12 Gender Mainstreaming during preparedness and response to emergencies

During emergencies and disasters, all persons are vulnerable to suffering negative impact. However, women, children, the elderly and persons with special needs tend to suffer disproportionately. Women in particular are disadvantaged by their societal roles of care. To ensure the special needs of women are well integrated into preparedness and response actions, we shall undertake a gender analysis to indicate how different gender and special categories are likely to be impacted during the disaster or emergency response. Based on the analysis, appropriate gender focused actions will be implemented under this framework.

4.13 Preparedness

The overall framework that is guiding preparedness is the NAPHS 2019-2023. Implementation is ongoing and considerable mileage has been demonstrated. Guidelines to respond to specific diseases for example, Cholera, Malaria, VHFs have been developed. The animal sector also has guidelines for the management of Avian flu and Rabies. Contingency plans and standard operating procedures for a number of priority diseases have been developed and are routinely evaluated. Contingency stock piling of medical counter measures at national level is well established however at sub national level attempts have been made to strategically preposition medical counter measures (MCM) stocks at regional nodes to support districts. Surge capacity is not sufficiently coordinated during response. Continuous mentorship through table

top and simulation exercises will be done in order to maintain functionality of the district rapid response teams and task forces.

Chapter Five

5. Operations

Operations is responsible for the tactical implementation of the response plan. At the field level, operations shall provide direct response to the incident/ event. Operations includes technical sub-committees: Coordination and leadership, epidemiology and surveillance, laboratory, case management, infection control and prevention, risk communication and community engagement and logistics. Representatives from the NTF serve in one or more of the essential Incident Management Structure roles and/or lead a sub-committee of the Incident Management Team (IMT) (**Figure 13 above**) during an incident. The Incident Management Team (IMT) takes charge of response and control of the outbreak. This includes development and approval of the Incident Action Plan (IAP) for each PHE, as well as resource mobilization for the response.

5.1 Functions of the various pillars

Coordination and leadership

This pillar provides overall strategic guidance for implementation of the response plan and mobilize resources for effective preparedness and response to PHEs.

Surveillance and Laboratory

This pillar enhances capacity to prevent, rapidly detect and investigate all suspect PHEs. This pillar is responsible for surveillance function and laboratory services during the response.

Case management

This pillar is responsible for setting the standard of care, providing of care, clinical services ensuring prevention of transmission in Health care settings and communities based on the optimised supportive care guidance. They are also responsible for provision of nutrition, mental health and psychosocial support.

Risk communication and community engagement

This pillar is to provide leadership of risk communication and community engagement interventions to facilitate public health education, acceptance of response activities and recommended behaviours.

Additional pillars may be constituted depending on the PHE such as vaccination and operational research.

5.2 Logistics Management

The Logistics sub-committee of IMS shall coordinate and track logistics for the PHE preparedness and response covering the following areas: procurement and supply, management of supplies/equipment, fleet management, warehousing/storage and inventory management, distribution, communications, establishment of operations hubs, reverse logistics, and security. The major suppliers of medical logistics include:

- The National Medical Stores
- The Joint Medical stores
- Private pharmaceutical firms that will be selected based on an agreed upon criteria procurement shall be done in line with agreed upon forecasts and quantification. Several development partners can offer needed logistical support where possible in collaboration with the liaison officer.

A waived procurement process for emergency commodities will be conducted by the logistics subcommittee led by the Department of Pharmaceuticals. Logistical supplies from development partners will be obtained utilising procurement systems as established by the partners in emergency situations.

5.3 Transport and Fleet management

Within the MoH, all departments have vehicles, drivers and fuel allocated for fieldwork. These vehicles are in a pool and whenever needed they are requested for through the transport officer. When more vehicles are required, a request is made in writing to the Transport Office, MoH through the Incident Commander. Fleet shall be managed by the Logistics subcommittee. For additional support, the Uganda Police and UPDF shall support the fleet system. Development partners willing to support in management of the fleet shall work with the logistics sub-committee. When and need be to support the fleet system, the private sector players shall be mobilised. The Private sector players will be identified, selected and a clear mechanism of activating them instituted.

5.4 National and regional emergency stock

The national emergency stock is at NMS and there are regional nodes situated at the 16 regional referral hospitals. The nodes are used as stock pile centres for emergency commodities which will be regularly monitored to ensure replenishment and no expiries. Development partners will work in collaboration with the assigned liaison officer to support the establishment and management of emergency stocks.

Stock management system from request to delivery

Requests shall be made by the districts and various national response pillars to the logistics subcommittee through the Incident Commander and approved by the DGHS. Additionally, the districts shall request supplies from their respective nodes.

Distribution

Distribution shall be conducted by NMS which is expected to have distribution capacity throughout the country. Where needed, further support can be sought from the JMS, Uganda Police, UPDF through the National Task force and OPM. Development partners can provide support distribution through the logistics sub-committee.

Importation and Clearance

Lifesaving emergency supplies for the response shall be cleared for importation under waived clearance following guiding national standard operating procedures

5.5 Medical Countermeasures

During an emergency, medical counter measures (MCMs) (drugs, PPEs e.t.c) will be positioned at regional nodes and districts. Where facilities do not have the capacity, preparedness supplies for both the animal and human health sectors can be prepositioned in the same location within a district or prepositioning centres **(Figure 16).**

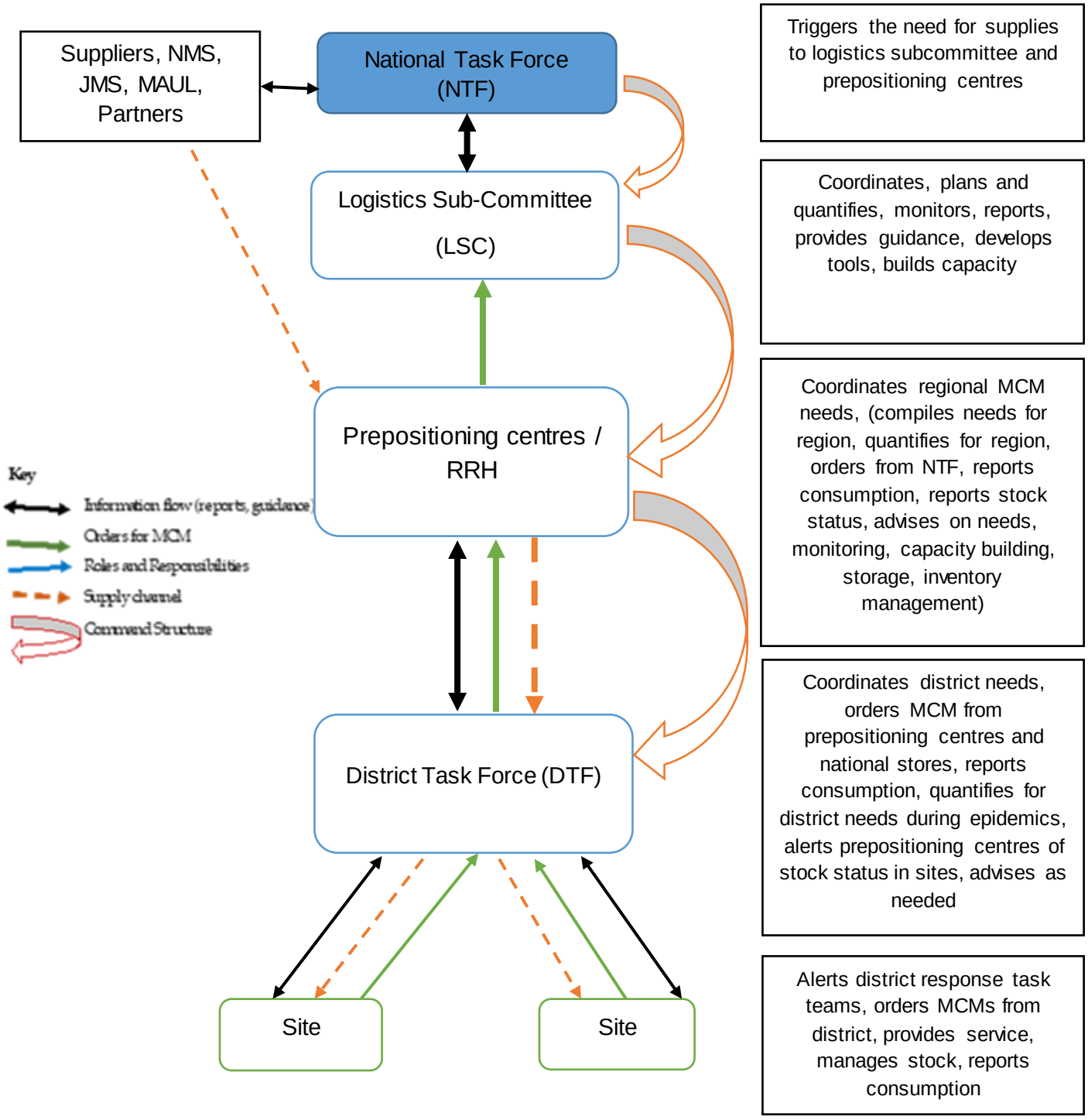


Figure 16: Conceptual Flow of MCMs for PHEs in the Uganda Supply Chains

5.6 Finance and Administration

The Finance and Administration function is responsible for expenditure tracking, payments, and administrative services. Procurement is carried out following government regulations and procedures[46]

5.7 Emergency response phasing out

Deactivation

For purposes of this plan, deactivation involves processes to achieve an orderly return to normal by progressively scaling back response activities.

The PHEOC is deactivated under the following conditions:

1) By DGHS determines when the MoH declares the outbreak over.

2) When the objectives of the response plan have been achieved and the MoH response has concluded. An official communication of deactivation is sent from the DGHS or the designated individual and kept on file at the PHEOC.

Considerations for deactivation

1) The scope/scale of the incident has reduced and requirements can be managed without EOC capabilities and resources

2) Incident action plan objectives have been satisfied

3) Epi curve of confirmed cases has peaked and shows continuous deceleration for an extended timeframe

4) No evidence of sustained or efficient human (or animal) to human transmission for a predetermined timeframe

5) Media attention shows continuous downward trend in news and social media for a two-week timeframe

6) Cases are having no impacts (or minimal impacts) to national, social, business, or economic affairs

7) Coordination of response activities and / or resources is no longer required. The Demobilization Unit Coordinator supervises and administers the deactivation

[46] Public Finance Management Act, 2015, The Public Procurement and Disposal Agency

After action activities include:

1) Hot wash meeting and discussion to capture information on lessons learned

2) PHEOC works with the IMT to develop and disseminate After Action Review report (AAR)

3) Resume any activities postponed during the response

4) Ensure return of any PHEOC equipment issued during the activation

5) Label and archive all documentation related to the incident in the PHEOC electronic files

5.8 Remaining resources and assets reallocation

At the end of a response to a PHE, the NTF can decide to withdraw and reallocate or retain the resources in the affected district(s) and or other sectors. This decision is made on a case-by-case basis and is aligned to the Recovery Plan for that PHE. The resources that have been brought into the country by development and implementing partners be retained and repurposed for other country priorities in line with National health systems capacity building.

5.9 After Action Review process

An After-Action Review (AAR) is a qualitative evaluation of actions taken to respond to a PHE. The AAR is a means of identifying and documenting best practices demonstrated and challenges encountered during the response to the event. The AAR process involves a structured, facilitated discussion of experience sharing among responders. It entails critically and systematically reviewing; what happened, why it happened and how it can be improved.[47] On the basis of a gender risk analysis, the evaluation will assess the gender considerations during the response.

The DGHS shall commission an AAR for any major PHE within 3 months from the end of that event. The AAR shall be a participatory process involving all stakeholders in the response. The findings of the AAR shall be used to improve the management of future PHEs.

5.10 Recovery

The aim of emergency recovery is to re-establish the economic, social and cultural life of the people affected and to rebuild the health systems. The emphasis is on supporting the

[47] who.int/ihr/procedures/after-action-review/en/

affected communities, families and individuals to rebuild and recover by their own efforts after a PHE. Recovery shall be a government driven process through safe reactivation of essential health services. This shall involve rebuilding health structures and capacity from the community to the national level. Recovery efforts shall aim to tackle pre-existing health system and socio-economic constraints that contributed to the occurrence and management of the event.

A recovery plan shall be integral to the overall response plan. The pillars of recovery shall include service delivery, human resources for health, health information systems, health financing and essential medical products and technologies. A continuity of essential services pillar shall be activated and headed by the Director of Clinical Services; to monitor provision of essential health services during and after the event. Response to public health emergencies shall take a multi sectoral approach; all stakeholders at national and sub-national levels shall be involved in the recovery process. Different sectors shall be involved in the recovery process depending on the nature of the event, or the extent of the recovery process.

At the end of the event, the recovery process shall be fused with the health system strengthening efforts in line with lessons learnt from the AAR. Other components of the recovery process shall be supported through the district operational and development plans.

5.11 Specific contingency plans for priority risks

Multiple action plans to address priority risks have been developed; National Action plans for Antimicrobial Resistance. In addition, standard operating procedures for viral haemorrhagic fevers for Marburg and Ebola Virus Disease and 3rd Edition IDSR Technical Guidelines for management of public health were launched and rolled out.

The National Infection Prevention Control Strategy is under development by the Department of Clinical Services.

Below is a list of priority public health hazards for which contingency plans have been developed or are in the process of development.

Table 3: List of contingency plans for selected public health hazards

Name of Hazards	Name of Contingency plan	Comments
Floods	Comprehensive Disaster Risk Management Plan	The hazards specific plans are developed at the district level.

Landslides	Comprehensive Disaster Risk Management Plan	The hazards specific plans are developed at the district level.
Influenza and influenza like illnesses (including zoonotic influenza, COVID-19 and new subtypes of influenza and corona viruses)	Draft Highly Pathogenic Avian Influenza Plan/ Pandemic Influenza Plan	The contingency plan is being developed by MAAIF and national trainer of trainers has been done. This is a One Health plan which is under review. There is national preparedness and response plan for pandemic influenza/avian influenza
Cholera (including all water borne diseases e.g. typhoid)	National Integrated Comprehensive Cholera Plan 2017-2022 and the National Cholera Technical Guidelines Draft Ministry of Health Cholera contingency plan	The Plan is due for review in 2023.
Yellow Fever	National yellow fever mass vaccination preventive campaign Draft Ministry of Health Yellow Fever contingency plan	Ministry of Health has introduced Yellow Fever Vaccination in Routine National Immunisation. The country is conducting preventive Mass Vaccination Campaigns scheduled to be completed by 2024 in line with the Global EYE strategy.
Anthrax	National Anthrax prevention and control strategy Draft Ministry of Health Anthrax contingency plan	The National Anthrax prevention and control strategy is under development under the hospice of MAAIF. There is a contingency plan for Anthrax by the Ministry of Health.
Rift Valley fever and CCHF	Draft Ministry of Health Rift Valley fever and CCHF contingency plan	There is a draft contingency plan for preparedness and response to Rift Valley Fever and CCHF
Monkey Pox	Draft Ministry of Health Monkey Pox contingency plan	
Rabies	National Rabies Control Strategy	There is a National Rabies Control strategy housed under MAAIF

5.13. Priority strategic actions

This plan is a mini SOP for responding to all hazards. The following are therefore strategic actions that will be prioritised within the next five years:

1. Finalising the draft on CBRNe policy
2. Strengthening collaboration under the One Health Platform
3. Extend the National Health Laboratory transport network to include the animal health sample transport system
4. Strengthening the national laboratory capacity for chemical, radiology and nuclear components
5. Revise the human resource structures in MDAs and recruit the desired human resource for IHR implementation and continuous building capacity
6. To build the IHR core capacity at Entebbe, Busia and Mpondwe points of entry.
7. Strengthening inter-operability and inter-connectedness between animal and human surveillance systems
8. Strengthen surveillance (information sharing) for food safety and zoonotic diseases
9. Deepen coordination between resource mobilization, allocation and deployment. Emergency funding needs to be more coordinated and sustainable
10. Strengthen national infection prevention and control program (IPC)

5.14 Conclusion

This multi-hazard plan provides a national framework for responding to public health emergencies originating from all types or forms of hazards. The effective implementation of the plan will require full collaboration of all the MDAs responsible for IHR.

6. List of Annexes

Annex 1: List of technical contributors

NAME	ORGANISATION	NAME	ORGANISATION
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Dr. Muwanguzi David	MOH/VPH	Wanyana Mercy	NIPH
Dr. Mabumba Elly	MOH/ IES & PHE	Dr. Mariam Komugisha	UNIPH

Annex 2: International and National Legal frameworks/policies

i. **Agenda 2030 - Sustainable Development Goals:** These aim to achieve decent lives for all on a health planet by 2030. There is global recognition of the key role of health in achieving Sustainable Development Goal 3 (good health and well-being) and other related Goals 1, 2, 4, 5, 6, 13 and 17[48].

ii. **International Health Regulations (2005)**: The purpose of the IHR 2005 is to provide guidance to countries on how to achieve core capacities on prevention, detection and response to public health emergencies while avoiding unnecessary disruption to international trade and travel.

iii. **Global Health Security Agenda:** This is an effort by nations, international organisations and civil society to accelerate progress toward a world safe and secure from infectious disease threats; to promote global health security as an international priority; and to spur progress towards full implementation of IHR (2005).

iv. **Regional Strategy for Health Security and emergencies 2016:**
The strategy contributes to the achievement of SDG3, emphasizing the use of "all-hazard approach" incorporating planning for and consideration of all potential natural and technological hazards.

v. **Sendai Framework for Disaster Risk Reduction (2015-2030)**: This framework guides countries to enhance disaster preparedness for effective response and to build back better in recovery, rehabilitation and reconstruction.

vi. **Paris Agreement on Climate Change (2016)**: Deals with greenhouse gas emission and finance starting 2020 to substantially reduce the risk effects of climate change.
It aims to increase the ability of countries to deal with the impacts of climate change, and at making finance flows consistent with a low greenhouse gas emissions and climate resilient pathways.

vii. **Africa Health Strategy (2016-2030)**: The strategy proposes strengthening health systems with a goal of reducing disease burden through improved resources, systems, policies and management. This will contribute to equity through a system that reaches the poor and those most in need of healthcare[49].

viii. **East Africa Community (EAC) Vision (2050)**: Mandates partner states to make Continued investments in health infrastructure systems as well as building capacities of health personnel. Both preventive and curative capacities will be

[48] sdgs.un.org/goals
[49] au.int/en/documents/30357/africa-healthy-strategy-2016-2030

enhanced to ensure a healthy and productive sub region that is free from diseases and pandemics.

ix. **East Africa Community vision 2050** emphasizes: i) Strengthen collaboration among health sectors and health related institutions in the region; ii) Strengthen and harmonize health and health related policies, strategies and plans; iii) Harmonize health and health related legislations and regulations; iv) Ensure common and uniform standards of services, products and technologies; v) Strengthen the coordination of development support and other stakeholders.

x. **Disaster Risk Reduction Bill-EAC (2016)**: This calls for the development of regional mechanisms, coordination and institution development for East African Community members to develop capacities in early warning and disaster risk management. The strategy also advocates for development of an EAC disaster risk fund.

xi. **Integrated Disease Surveillance and Response (IDSR):** This is a WHO-AFRO regional strategy for strengthening capacity for surveillance and response to public health emergencies at community, health facility, district and national levels in an integrated manner to maximize resources.

xii. **Uganda Vision 2040:** This provides development paths and strategies to operationalize ***"A Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years"*** as approved by Cabinet in 2007. It aims at transforming Uganda from a predominantly peasant and Low-Income Country to a competitive Upper Middle-Income Country. Health is an important component in this agenda.

xiii. **National Development Plan (NDP) III (2020/21 – 2024/25):** The plan provides guidance in delivering the aspirations articulated in Uganda Vision 2040. It aims at increasing household incomes and improved quality of life of Ugandans through sustainable industrialization for inclusive growth, employment and sustainable wealth creation. The plan focuses on five key strategic objectives: i) Enhance value addition in key growth opportunities; ii) Strengthen the private sector to create jobs; iii) Consolidated and increase the stock and quality of productive infrastructure; iv) Enhance the productivity and social well-being of the population; v) Strengthen the role of the state in guiding and facilitating development.

xiv. **The Public Health Act (1935)**: This is an act to strengthen enforcement regarding the preservation of public health.

xv. **Atomic Energy Act (2008)**: The act regulates peaceful applications of ionising radiations for the safety of individuals, society and the environment from the dangers resulting from ionising radiations.

xvi. **Occupational Health and Safety – OSH Act (2016)**: This regulates safety and health of all workers at their workplaces.

xvii. **The Local Government Act 1997:** This spells out the roles and responsibilities of local governments (LGs) in the provision of health services. The Act also fully backs the Parish Development Model Strategy for organizing and delivering public and private sector interventions for wealth creation and employment generation at the parish level as the lowest economic planning level. It extends the whole government approach for development in a consolidated manner as opposed to working in silos.

xviii. **Parish Development Model 2021:** This is a guide to all the stakeholders in organizing and delivering public and private programme interventions for wealth creation at the Parish level as the lowest economic planning unit[50].

xix. **National Climate Change Act 2021**: The Act provides for climate change response measures, participation in climate change mechanism, measuring of emission, reporting and verification of information, institutional arrangement for coordinating and implementing climate change response measure, financing for climate change and related matters.

xx. **The National Environment Act 2019**: It provides for management of the environment for sustainable development, emerging environment issues including climate change, management of hazardous chemicals, biodiversity offsets and provide for strategic environmental assessment.

xxi. **The Toxic Chemicals Prohibition and Control Act 2016**: It provides for the control and management of toxic chemicals in the country in order to protect people and the environment.

xxii. **Animal Diseases Act Chapter 38 laws of Uganda**: The act provides for the prevention and control of animal diseases including zoonotic diseases.

xxiii. **National Health Policy III (2010 – 2020):** The goal of the NHP II is ***"To attain a good standard of health for all people in Uganda in order to promote healthy and productive lives"***. The priority areas are: Strengthening health system in line with decentralisation; reconceptualising and organising supervision and monitoring of health systems at all levels; establishing a functional integration within the public and private sector; and addressing the human resource crisis.

[50] Implementation Guidelines for Parish Development Model, 2021

xxiv. **National Policy for Disaster Preparedness and Management 2011:** The implementation of this plan will be in accordance with the roles and responsibilities of various actors outlined in the National Policy for Disaster Preparedness and Management[51].

xxv. **The National Agriculture Policy 2013:** This policy aims at improving food and nutrition security and improve household income. This is done through coordinated interventions that focus on enhancing sustainable agricultural productivity and value addition providing employment and promoting domestic and international trade. This is in line with the SDGs.

xxvi. **Delivery of Veterinary Services policy (2002)**: This policy provides for disease control in general including zoonotic and other emerging diseases.

xxvii. **Health Sector Development Plan (2015/16-2019/20)**: The HSDP goal is „To accelerate movement towards Universal Health Coverage (UHC) with essential health and related services needed for promotion of a healthy and productive life". UHC makes it possible to ensure that all people receive essential and good quality health services they need without suffering financial hardship.

xxviii. **Medium Term Expenditure Framework (MTEFs); 3 Year Rolling Resource Allocation Framework**: This is a three-year expenditure plan. It sets the Medium-Term Expenditure Priorities and budget constraints against which sector plans can be developed and refined. MTEFs also contain outcome criteria for the purpose of performance monitoring.

xxix. **The Uganda National One Health Strategic Plan (2018-2022)**: This plan aims at promoting multi-sectoral and interdisciplinary application of knowledge and skills of medical, public health, veterinary and environmental experts by working together to address animal, human and environmental health challenges.

xxx. **National Action Plan for Health Security (NAPHS) 2019-2023**: The five-year plan has 19 technical areas, of which emergency preparedness is one. Development and implementation of the NMHPRP will greatly contribute to positive changes in the country's IHR Core capacity and health security scores. This plan has been periodically reviewed and there is an Operational Plan guiding NAPHS implementation.

xxxi. **Agricultural Sector Strategic Plan (ASSP) FY 2015/16 to FY 2019/20**: This Plan stipulates investment and development of the agricultural sector in line with NDP using a multi sectoral approach. The plan aims at contributing to wealth creation and employment.

[51] www.necoc-opm.go.ug/publications/1

xxxii. **Occupation Safety and Health Management Information System - OSHMIS (2021):** This contains the list of all hazardous chemicals in the country and how to manage the associated health risks.

Ministry of Works and Transport policy: This plan supports initiatives to prevent and control injuries and fatalities from motor and water transport.

xxxiii. **The Traffic and Road Safety Act, 1998 as amended by Traffic and Road Safety (Amendment) Act, 2020** – which relates to road traffic and safety. The Act regulates movement of vehicles, motorcycles, donkey on the road to ensure safety management. It provides for enforcement by police and details their role to control traffic. Secondly, the Traffic and Road Safety (Rules of the Road) Regulations, No. 35 of 2004 which further expounds on traffic regulations, matters of overtaking, speed, braking and so on. **The Inland Water Transport Act No. 18 of 2021** regulates inland water transport. The Act provides for the safety of life and navigation on inland waterways.

Annex 3: Concept of Operation (CONOPS)

CONCEPT OF OPERATIONS (CONOPS)

GRADING OF EVENT

GRADE 1	GRADE 2	GRADE 3	GRADE 4
Event is of a small scale and low severity, limited to one sub-county within the district and can be handled by the district. A few cases reported, and the nature of the event doesn't require full scale support from the national level.	Event is limited to one district with spread to more than one subcounty, and is of a moderate scale and low severity. This shall require; a) Minimal support by the NRRT: guidance on activation of DTF and Risk assessment, b) A potential scale-up plan in place to be deployed when needed. The disease is still limited to a few sub counties within the district, with sporadic cases	This event has spread beyond one district and has the potential to spread over a large geographical area within the country with extensive impact on population. The event is of moderate to high severity. Full response at the national level is launched, the district and national rapid response teams are working together to ensure effective response to the event. The OPM takes charge and the national task force sits on a regular basis.	The event has spread beyond one geographical region with extensive impact on population. The event is of moderate to high severity. There is also a risk of cross border spread. The strategic level is escalated to the Office of the President. International assistance is required

STRATEGIC

DIRECTOR GENERAL OF HEALTH SERVICES
NATIONAL TASK FORCE/INCIDENT MANAGER

Provides the overall direction of the response and oversees the progress of the interventions.
Responsible for setting and achieving the objectives for the response
Responsible for the operational coordination and implementation of the strategy
Makes and endorses policies required to enable the response
Mobilises the necessary resources for the interventions
Approves crisis communication materials, technical guidance and activities
Coordinates with strategic levels of other entities in and outside the country

OPERATIONAL

National PHEOC Activated to alert mode Provides technical support as needed Communicates with the RPHEOC and district	**National PHEOC** Activated to response mode Minimal support to the district by the NRRT Guidance to DTF on activation and risk assessment Development of a scale-up plan if need arises	**National PHEOC** Activated to response mode Incident Manager appointed, IMS deployed Full response at the national level is launched District and national rapid response teams deployed NTF is activated and sits on a regular basis	**National PHEOC** Activated to response mode NRRT fully deployed Other entities mobilized to join the response - uniformed services, Red Cross, partners, International community
Regional PHEOC Activated to response mode Coordinate response to the event with regional partners Mobilization of response resources e.g. PPEs, Sample collection materials	**Regional PHEOC** Activated to response mode Coordinate response to the event with regional partners Mobilization of response resources e.g. PPEs, Sample collection materials	**Regional PHEOC** Activated to response mode Coordinate response to the event with regional partners Mobilization of response resources e.g. PPEs, Sample collection materials	**Regional PHEOC** Activated to response mode Coordinate response to the event with regional partners Mobilization of response resources e.g. PPEs, Sample collection materials

TACTICAL

District District Task Force activated and meeting regularly DRRT deployed to investigate and respond to the event Affected communities engaged in the response District emergency response plan developed Medical Counter Measures deployed Situation reports shared with RPHEOC and NPHEOC	**District** District Task Force activated and meeting regularly DRRT deployed to investigate and respond to the event Affected communities engaged in the response District emergency response plan developed Medical Counter Measures deployed Situation reports shared with RPHEOC and NPHEOC	**District** District Task Force activated and meeting regularly DRRT deployed to investigate and respond to the event Affected communities engaged in the response District emergency response plan developed Medical Counter Measures deployed Situation reports shared with RPHEOC and NPHEOC	**District** District Task Force activated and meeting regularly DRRT deployed to investigate and respond to the event Affected communities engaged in the response District emergency response plan developed Medical Counter Measures deployed Situation reports shared with RPHEOC and NPHEOC