

# Pandemic Influenza Strategic Plan (PISP)

January 2020 to December 2024



## Government of Sierra Leone

**Delivered through a World Bank Consultancy:** Technical Assistance to the Government of Sierra Leone on Pandemic Preparedness Planning for Sustainable and Efficient Health Financing and Service Delivery in Sierra Leone (Ref. No #1255599). Implemented by a Partnership of Health Focus (Berlin) and ManoCap Advisory (Freetown). Implementing Consultants: Carole Green, Stefano Lazzari and Natalie Maroun

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## Document Control

<b>For use in</b>	A potential Influenza Pandemic situation, but may be relevant for other infectious disease public health emergencies
<b>For use by</b>	MoHS and One Health partner organisations, plus local and international partners
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<b>Authors</b>	World Bank Consultants with support from WHO and the DHSE
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# Forward and Acknowledgements

Sierra Leone has experienced many health related emergencies spanning human, animal and environmental health for centuries. In the last two decades this has included Ebola, (2013-2016) when 3,956 deaths occurred and two cholera outbreaks (1994 –1995, 2012 -2013) with 1,766 deaths. Lassa fever, a viral hemorrhagic fever, is endemic in the country and has continued to present a significant threat with other emerging diseases such as Marburg hemorrhagic fever. Sierra Leone has yet to be affected by a major influenza outbreak, but this would inevitably happen during a global Pandemic. All countries are expected to develop a Pandemic Influenza Plan and to put in place business continuity plans across the whole of society so that essential business and services could continue to operate at optimal resilience during such an outbreak.

Following a review of the response to the West African EVD Epidemic, the World Health Assembly (WHA) in its resolution WHA 69/21 Rec.5, asked all WHO States Parties to adopt the Joint External Evaluation (JEE) of IHR core capacities and to develop National Action Plans for Health Security (NAPHS). In line with this recommendation, Sierra Leone was the sixth country in the African region to undergo the JEE in October 2016 and then the National Action Plan for Health Security (2018-2022) was developed through a very inclusive process and agreed in December 2019.

This Pandemic Influenza Strategic Plan has been developed over 6 months in 2019 using a similar whole society approach and is very much in line with the NAPHS and built upon the JEE findings. Following on from the plan development, there has been a series of workshops and templates developed during 2019 to support essential services and businesses to prepare straight forward, practical business continuity plans which would be used in a pandemic.

As a result of this document and, more importantly, the process of its development, Sierra Leone is now much more prepared to respond when a pandemic level event happens, and it will happen, we just don't know when. The added value of this process has been that the wider sectors of society have started to think about their responses to a pandemic and how they will ensure 'business as usual' during such an event. The plan and the business continuity planning processes are equally relevant to any kind of outbreak and even natural disaster and are therefore invaluable learning and development tools.

We wish to acknowledge the invaluable contribution of all actors who were involved in the formulation of this plan. This plan would never have been developed without the leadership of the Chief Medical Officer, Deputy Chief Medical Officer, the Director of Health Securities and Emergencies and his team and with significant input from the senior leaders and staff from One Health Partners Ministries, WHO and development partners. Thanks must all be given to the World Bank who funded the consultancy to develop the plan and deliver the various events and workshops. The plan will be reviewed every 5 years, with business continuity developments and updates as part of the process, to ensure that it remains viable and useable when the inevitable influenza pandemic next happens.

(Suggested text for the MOHS to amend during validation)

# Abbreviations

AI	Avian Influenza
CBO	Community-based organization
CDC	Centre for Disease Control and Prevention (USA)
CHW	Community Health Worker
CAHW	Community Animal Health Worker
DERC	District Ebola Response Centre
DFID	Department for International Development (UK)
DHSE	Directorate of Health Security and Emergencies
ECOWAS	Economic Community of West African States
EOC	Emergency Operations Centre
EPA	Environment Protection Agency
EVD	Ebola Disease Virus
EU	European Union
GAVI	Vaccine Alliance
GHSA	Global Health Security Agenda
GoSL	Government of Sierra Leone
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
HF	Health Focus
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome
HSSP	Health Sector Strategic Plan
IDSR	Integrated Disease Surveillance and Response
IFC	International Finance Corporation
IFRC	International Federation of Red Cross and Red Crescent Societies
IHR	International Health Regulations
INGO	International non-governmental organization
ISO	International Organization for Standardization
JEE	Joint External Evaluation
M&E	Monitoring and evaluation
MAF	Ministry of Agriculture and Forestry
MOHS	Ministry of Health and Sanitation of Sierra Leone
NAPHS	National Action Plan for Health Security
NAPPINID	National Action Plan for Pandemic Influenza and New Infectious Diseases
NERC	National Ebola Response Centre
NGO	Non-governmental organization
NHSSP	National Health Sector Strategic Plan
NPHEPR	National Public Health Emergency Preparedness and Response
ONS	Office of National Security
PISP	Pandemic Influenza Strategic Plan
PPP	Pandemic Preparedness Planning
PPRP	Pandemic Preparedness and Response Planning
SOP	Standard Operating Procedures
SWOT	Strengths, Weaknesses, Opportunities, Threats
ToR	Terms of References
ToT	Training of Trainers
TWG	Technical Working Group
UK	United Kingdom
VRAM	Vulnerability Risk Analysis and Mapping
WHO	World Health Organization

# Executive Summary

**Influenza viruses periodically cause worldwide pandemics** when a new human Influenza virus emerges for which there is little or no immunity in the population and begins to spread efficiently from person to person, causing serious illness and considerable societal and economic disruption. A future influenza pandemic has the potential to infect a very significant percentage of the population and result in many deaths. In addition, a Pandemic can have a major impact on healthcare provision, travel, trade, tourism, communications, food availability, retail consumption, and eventually, lawlessness and national security.

**Effective planning and preparedness are critical** to help mitigate the risk and impact of a Pandemic, to manage the response and accelerate the recovery, and require the involvement of every level of the Government, the healthcare and social services community, the local and international partners and the business community.

**WHO encourages all countries to develop a National Pandemic Preparedness Plan** as part of the global Pandemic Influenza Preparedness (PIP) Framework and in the context of the International Health Regulations (2005). To this end, WHO AFRO recently developed new guidelines and tools for countries to follow in developing their plans and is supporting 14 countries in Africa (including Sierra Leone) to develop and implement PIPs. These tools have been incorporated as part of this document.

**This Pandemic Influenza Strategic Plan serves as the national guidance document** outlining preparedness activities and response actions to be taken in the event of an Influenza Pandemic. It provides guidance and a framework to enable the Government, other stakeholder agencies and organisations, and communities to work together to:

- Contribute to effective national and local level preparedness and response to an Influenza Pandemic;
- Reduce Influenza-related morbidity and mortality;
- Minimize disruption of, and impact on critical social, economic and medical services and critical infrastructure during a Pandemic;
- Facilitate post-Pandemic recovery operations.

**This plan is intended to be both flexible and dynamic and aligned to national policy.** It includes preparedness and response components that are aligned and consistent with the One Health Approach, the National Action Plan for Health Security (NAPHS), the All Hazards Public Health Incident and Emergency Response Plan (IEPR) and general principles of disaster response. The plan was also informed by the latest international guidance from WHO and other partners and from the review of existing national Pandemic plans from developed and developing countries.





**The Strategic Plan has been developed with broad ‘whole society’ stakeholder engagement.** The Plan was informed by a situation analysis based on desk review of existing plans and guidelines, interviews and observations undertaken during assessment mission and by the significant contributions of more than 180 participants in multi-agency workshops and business continuity planning workshops held in 2019.





This Strategic Plan provides strategic guidance and a framework for Pandemic preparedness and response in Sierra Leone and is organized in three sections:

- **Part One: Overview, Context and Current Position (Where are we now in 2019?)** describes the background of Pandemic Preparedness planning, the purpose and vision of the national plan, and provides a summary of the Sierra Leone country context. It also illustrates the burden of seasonal and pandemic influenza in the national and international context, and summarizes the findings of the situation analysis in terms of existing management structures for Coordination and Communication; Strategy, Policies and Guidelines; Human Resources; Prevention, Preparedness and Response capacities.
- **Part Two: The Strategic Direction (Where do we want to be in 2024?)** is focused on Effective Pandemic Management and describes the essential components of Risk Management and Severity Assessment, lists the Planning Assumptions required for Pandemic preparedness, and presents the key components of the effective systems and capacities required to Prevent, Prepare, Respond & Recover to a Pandemic.

Finally, 29 Critical Success Factors identified during the workshops and considered essential for building Sierra Leone preparedness and response capacities are summarized.

- **Part Three: Making Strategy into a Reality (How do we get there in the next five years?)** describes 8 strategic priorities that emerged from the detailed discussion of the Critical Success Factors. For each strategic priority, a priority statement was developed to describe what is to be achieved. Finally, high level activities were assigned across the five years of the plan to clarify how the Strategic Plan will be delivered. The summary of the eight strategic priority areas is provided below.

<b>SIERRA LEONE - SUMMARY STRATEGIC PRIORITY AREAS (Jan 2020 - DEC 2024)</b>	
	<p><b>Strategic Priority No.1: HUMAN RESOURCES:</b> By 2024, there is a <b>sufficient and competent integrated workforce</b> to detect and manage Influenza cases at <b>all levels, involving all One Health partners</b> through <b>training and continuous professional development</b>, including routine <b>supportive supervision and mentorship</b>, to ensure effective service delivery.</p> <p>Linked to Success Factors: 1 to 4</p>
<p>1.1 <b>At least 90% of current volunteer staff will be recruited onto the government payroll</b> to increase the number of trained human, animal and environmental health staff in respective technical areas to improve service delivery of frontline workers.</p> <p>1.2 <b>Improve the staff terms and conditions and the work environment</b> by providing the required working materials, policies and data collection tools to improve staff retention (human, animal and environmental health).</p> <p>1.3 <b>All appropriate One Health staff will have the capacity</b> in Influenza case detection, investigation and reporting using the updated SOPs and guidelines to enhance rapid response</p>	
<p><b>Strategic Priority No.2: LOGISTICS &amp; SUPPLY</b> By 2024, there is a <b>specified adequate supply chain and logistics system</b> (described in an SOP) that will ensure <b>commodities and equipment for response are sufficient and available</b> at national, district and local levels, without disruption.</p> <p>Linked to Success Factors: 5 to 7</p>	
	
<p>2.1 <b>A fund of \$ 1m USD available</b> from domestic resources that can be quickly mobilized and utilized for commodities, equipment, transport, human labour costs and warehousing as soon the threat of Pandemic is declared</p> <p>2.2 <b>Establish an efficient Supply Chain scheme (SCM)</b> to ensure the optimization of available resources</p> <p>2.3 <b>Ensure procurement</b> of the required quantity and specification of commodities and equipment for outbreak response</p>	
	<p><b>Strategic Priority No.3: SURVEILLANCE &amp; LABORATORY SYSTEM:</b> By the end of 2024, there is an <b>integrated, robust surveillance and laboratory system</b> in order to promptly respond to Influenza Pandemics. <b>Linked to Success Factors: 8 to 13</b></p>
<p>3.1 <b>Improve functional public health and animal laboratories system</b> in terms of capacity building, accreditation, WASH, internet, electricity supply and bio-security (CPHRL)</p> <p>3.2 <b>Integrate active and passive human and animal health surveillance systems</b> in the context of One Health by developing the reporting tools and platform and improving human resource expertise</p> <p>3.3 <b>Improve regional laboratory capacities</b> to confirm Influenza Pandemic in both human and animal. Trained technical personal that can conduct advance tests in both animals and human health (Kenema, Bo and Teko laboratories to level 3)</p> <p>3.4 <b>Establishment of Influenza sentinel sites</b> in regional and district hospitals (public and private) in all 16 districts.</p>	
<p><b>Strategic Priority No.4: COORDINATION &amp; COMMUNICATION:</b> By 2024, an <b>effective communication mechanism</b> is in place at national, districts and community levels <b>linking with One Health</b> and other partners, enabling effective risk communication, health education and community sensitization which engages the public to prevent and control outbreaks. Also a <b>coordination mechanism</b> is in place to avoid duplication of effort, mobilize resources, identify weaknesses and strengths and that is capable of instigating improvements. <b>Linked to Success Factors 14 to 18</b></p>	
	
<p>4.1 <b>Effectively engage the public</b> to raise awareness of Pandemic Influenza and what to do in emergency</p> <p>4.2 <b>Communication mechanisms</b> in place to ensure that the public can work together with the Government to manage an Influenza Pandemic</p> <p>4.3 <b>Ensure that the current cross- governmental coordination mechanisms</b> are periodically reviewed to ensure that they are robust enough to respond to and Influenza Pandemic</p>	

	<p><b>Strategic Priority No.5: CLINICAL MANAGEMENT &amp; IPC :</b> By 2024, patients with Pandemic Influenza disease condition can be <b>treated in most appropriate, timely, and safe manner</b> in the right place (at home or hospital) by having appropriate drugs and treatment guidelines, by competent trained and qualified health personnel. <b>Linked to Success Factors: 19 to 21</b></p>	
<p>5.1 <b>Strengthen existing protocols on IPC</b> including, Hand hygiene, availability of clean water, soap, hand sanitizer, hand washing protocols with the training of all appropriate staff</p> <p>5.2 <b>Clear case definitions developed</b> for Influenza that can be applied in all Health facilities to meet the IDSR guidelines.</p> <p>5.3 <b>Strengthen screening</b> so that all patients presenting to any facility with flu-like symptoms must be screened for Influenza</p> <p>5.4 <b>Standard clinical guidelines/treatment protocols</b> to be available and utilized by all clinicians in all healthcare facilities.</p>		
<p><b>Strategic Priority No.6: BORDER MANAGEMENT (POEs):</b> By 2024, Sierra Leone has a <b>well-structured border management system</b> in place that is capable of <b>screening, detecting, preventing and protecting</b> its citizens from an Influenza Pandemic in line with <b>IHR standards</b>. <b>Linked to Success Factor: 22 to 23</b></p>		
<p>6.1 <b>Improve the capacity</b> of existing PoEs to detect and respond to Influenza Pandemic through training and equipping of border control staff</p> <p>6.2 <b>Establish standard structures at the major crossing points</b> with high traffic flow of animals, humans and goods to screen, detect, prevent and protect against Pandemic Influenza.</p> <p>6.3 <b>Strengthen the use of the electronic database management systems</b> at border crossing points to enhance proper planning and prompt public health actions.</p> <p>6.4 <b>Establish effective communication and collaboration systems</b> at the border crossing points amongst neighbouring border countries and other agencies.</p>		
	<p><b>Strategic Priority No.7: PREVENTION:</b> By 2024, <b>90%</b> of the national population are <b>aware of and can practice recommended preventive behaviours</b>. There is <b>sufficient capacity to mount effective immunization campaigns</b>. There are <b>effective One Health structures in Districts</b> to prevent disease transmission from animal to human population. <b>Linked to Success Factor:24 to 27</b></p>	
<p>7.1 <b>Effective Flu vaccine delivery:</b> Ensure effective preparations for sourcing, procurement, transportation, warehousing and prioritised distribution of flu vaccines</p> <p>7.2 <b>Ensure 90% of the population have knowledge of common ways of transmission</b> of Pandemic Influenza and can consistently demonstrate recommended preventive behaviours</p> <p>7.3 <b>EPI to have trained personnel and cold chain capability</b> to mount effective immunization campaigns for Pandemic Influenza (when vaccine available)</p> <p>7.4 <b>Provision of a single active district coordination structure</b> to coordinate activities to detect and prevent disease transmission</p>		
<p><b>Strategic Priority No.8: BUSINESS CONTINUITY:</b> By 2024, Sierra Leone has well-structured Business Continuity plans in place both in the health system and across government and key business sectors for the management and maintenance of essential services and activities, together with the ability to develop to build community resilience, should an Influenza Pandemic occur. <b>Linked to Success Factors: 28 and 29</b></p>		
<p>8.1 <b>90% of health care services and other essential services and businesses</b> have <b>business continuity plans</b> in placed to continue operations in the event of Pandemic Influenza</p> <p>8.2 <b>75% of communities have resilience plans in place</b> to use in the event of Pandemic Influenza</p>		

**Part Three** also provides a mapping of Key Stakeholders and address the Governance structure, Risk Communication and also a Performance Framework is provide to track the implementation of the Pandemic Strategic Plan. The One Health Technical Working Group, under the leadership of the Director of Health Security and Emergencies, will assume overall responsibility and will be ultimately accountable for the delivery of the plan.

**The Annexes** provide further details on the organisations and individuals involved the plan production, the full breakdown of each of the 8 strategic priorities, the objectives and high level activities across the 5 years of the Plan. There is further guidance on coordination and potential stakeholder and partner roles during a response. The WHO Operational Framework for Pandemic Influenza Preparedness, Response and Recovery as also attached. Also separate document has been developed which outlines the operational activities for Sierra Leone in line with the WHO framework (Operational Activities).



# Part One: Overview, Context and Current Position (Where are we now in 2019?)

## 1. Background, Purpose & Country Context

### 1.1 Purpose and Vision

**The purpose** of this plan is to be a national document outlining preparedness activities and response actions to be taken in the event of an Influenza Pandemic. It provides guidance and a framework to enable the Government of the Republic of Sierra Leone and its Ministries, other stakeholder agencies and organisations to work together to accomplish the following objectives:

- Contribute to effective national and local level preparedness and response to an Influenza Pandemic
- Reduce Influenza-related morbidity and mortality
- Minimize disruption of, and impact on critical social, economic and medical services and critical infrastructure during a Pandemic
- Facilitate post-Pandemic recovery operations

**Plan Vision:** The Republic of Sierra Leone and partners emerge from an Influenza Pandemic with minimal disease burden and socio-economic impacts to the local population and to public and private critical services. All key stakeholders are capable of quickly resuming all aspects of pre-Pandemic operations and services. Learning from the response strengthens and improves services for the longer term, making them more resilient and fit for purpose.

**This Strategic Plan** provides strategic guidance and a framework for Pandemic preparedness and response and includes 8 key priority areas to be delivered in order to significantly strengthen the country's ability to respond to a Pandemic. Importantly, this plan adopts a risk management approach whereby risk assessment of the virus/Pandemic is continually performed to provide information on impact and to guide response interventions. The Strategic Plan is organised in three sections:

- Part One: Overview, Context and Current Position (Where are we now in 2019?)
- Part Two: The Strategic Direction (Where do we want to be in 2024?)
- Part Three: Making Strategy into a Reality (How do we get there in the next five years?)

**The Operational Activities** are provided in a separate document and they link directly to Part Three of the Strategic Plan. For each of the 8 strategic priority areas, it details the necessary actions to be performed in each of the areas of preparedness, alert and response that would need to be considered and this will assist in initial implementation. The operational activities are not costed, but many overlap with the costed action for the NAPHS.

**Audience:** The primary audience for this plan is the Ministry of Health and Sanitation together with the One Health Partners. It is also for other ministries, agencies, donors and NGOs that would have or would resume responsibilities in responding to health events such as Pandemic Influenza. This document will also serve as a reference document for other, non-governmental organizations (NGOs), community organisations and other stakeholders.

**Scope:** The Strategic plan has the following scope and approach:

- A five-year strategic plan with a suggested annual review process to measure progress against key performance indicators
- A national strategic plan with high level actions and activities at national, district and community levels and considers how the country interacts with regional (West African) and global organisations.
- A plan that takes a whole society approach, covering not only the One Health partners but all key government departments, implementing and development partners and private service providers who would need to contribute and operate differently in a Pandemic situation
- A public document, mainly aimed at government and implementing organisations prior to and during a Pandemic that will also inform all stakeholders and communities of the required preparedness and response actions during a Pandemic.
- The Strategic plan is not costed but elements of the operational activities may be costed at a later date by partners when the requirements for resources and supplies are clarified in line with the NAPHS.

**Wider impact and keeping relevant:** Although this plan provides disease specific guidelines to prepare for and respond to an Influenza Pandemic, it describes a general approach that can also be used to prepare for and respond to health emergencies caused by other highly-infectious outbreak-prone diseases. This document should be reviewed and updated at regular intervals to reflect new legislation, evidence and/or best practices as required, and be considered a living document.

## 1.2 Pandemic Influenza Plan – Why is it needed?

**Definition of a Pandemic:** A Pandemic is a global disease outbreak. An Influenza Pandemic occurs when a new human Influenza virus emerges for which there is little or no immunity in the population and begins to spread efficiently from person to person, causing serious illness, sometimes resulting in death. Influenza is currently the one true Pandemic disease, with the capacity to easily spread worldwide at a fast pace, facilitated by massive urbanization and air travel. Pandemics are unpredictable but recurring events that can put significant stress on health-care systems and on the wider economy.

**The potential socio-economic and health impact of Influenza Pandemics** can be catastrophic in its most severe form. Because of its potential to cause significant illness and death worldwide, experts believe that a global Influenza Pandemic will have a major negative impact on the global economy, including travel, trade, tourism, food, retail consumption and eventually, the financial markets and national security. Local impacts could also include increased lawlessness and implications for maintaining justice and peace, food shortages, lack of water and power and disruptions to communications.

**The importance of planning and preparedness:** The recurring and unpredictable nature of Influenza Pandemics makes them an important public health threat to prepare for. Effective planning and preparation are critical to help mitigate the risk and impact of a Pandemic, and to manage the response and recovery. Countries should therefore have multi-sectoral preparedness and response plans that outline their policies, strategies and operations to manage this whole-of-society emergency.

**Why Pandemic Influenza requires a different strategic approach to Ebola:** Influenza symptoms, spread and pathogenicity are very different from Ebola and other viral haemorrhagic fevers. Influenza transmission is through droplets made when people talk, cough or sneeze and by contaminated surfaces. Many patients are asymptomatic or have minor symptoms and recover promptly even without treatment. Both asymptomatic and symptomatic patients are contagious (one day before becoming symptomatic). On the other hand, Ebola is not spread through the air and is transmitted only through direct contact with bodily fluids of infected patients or contaminated materials, and only after the patient is symptomatic.

Influenza infects a large number of people but with only a limited number of severe cases (depending on the nature of the virus) and relatively low case/fatality rate (0.2-2%), whilst Ebola infects a relatively small number of people by direct contact, causing severe disease in most cases with a high case/fatality rate (average 50%). While all Ebola cases required hospitalization and intensive care, most Influenza cases can be treated at home and only a relatively small proportion of severe cases will require hospitalization. However, since many more will be infected with Influenza, a much larger number of people will require care and be off sick from work, overburdening health facilities during a Pandemic and causing problems with the continuity of many services. In addition, Pandemic Influenza is time limited. After a few waves the majority of the population will have acquired immunity and the new virus will continue to circulate as a regular seasonal flu virus. Ebola, on the contrary, infects relatively few people and if not contained properly, transmission can continue over a fairly long period of time, the DRC being an example of this.

The different modes of transmission translate in a quite different efficacy of public health measures like screening of suspected cases, use of PPE, isolation, quarantine, travel restrictions, etc. While these measures can be very effective in limiting and halting the spread of a VHF, they are much less effective in case of Influenza, as many infected people can spread the virus even if asymptomatic. Public health measures can slow down the progression of Influenza Pandemic in a population but cannot avoid it.

**A focus on Influenza also presents opportunities** to strengthen preparedness to manage other health threats. Although Pandemic Influenza is very different from a VHF, many of the core capacities needed to manage an Influenza Pandemic, in areas such as coordination, surveillance, laboratories, clinical management, preventive measures and risk communication, are common to the management of other public health emergencies. These are included in the core requirements of the International Health Regulations (IHR)<sup>1</sup>. Thus, maintaining a National Pandemic Influenza Plan as part of a multi-hazard public health emergency response strategy contributes to overall national preparedness and global health security. Sierra Leone has developed both an All Hazards Plan (PHIERP)<sup>2</sup> and a National Action Plan for Health Security (NAPHS)<sup>3</sup>, launched in December 2019 (Section 1.7).

## 1.3 How this Plan was developed

**Whole Society and One Health Approach:** This Plan has been developed with the One Health vision in mind: **“A Healthy Sierra Leone with people and animals co-existing in a safe environment, achieved through effective One Health collaboration”**. The One Health partners are the Ministry of Health and Sanitation (MOHS), Ministry of Agriculture and Forestry (MAF), The Environmental Protection Agency (EPA) and the Office of National Security (ONS). They have been instrumental in developing this plan in line with the One Health Mission ‘to create a resilient One Health system with efficient multi-sectoral coordination to prevent, detect and respond to emerging and re-emerging health threats to humans, animals and the environment’.

**An inclusive, informed and aligned approach:** The developed of the plan was informed by the significant contributions of participants who were interviewed as part of the Situation Analysis (Section 3) and those who participated in two large multi-agency workshops held in Spring 2019. These involved almost 130 people, from central and district levels (**Annex One**). In May 2019, components of the plan were further developed by a group of 5 representatives who attended the international PIP workshop led by WHO AFRO in Brazzaville. In July 2019, there was the opportunity for a wide number of organisations to comment on the plan components during the business continuity planning workshops, involving about 50 new people, bringing the total number of people involved to about 180. Two major drafts have been circulated to more than 70 people to gain feedback and raise awareness. Care has also been taken to align the plan with **current**

<sup>1</sup> International Health Regulations (IHR) 2005 <https://www.who.int/ihr/publications/9789241596664/en/>

<sup>2</sup> All Hazards Public Health Incident and Emergency Response Plan (PHIERP) December 2017

<sup>3</sup> National Action Plan for Health Security (NAPHS) (2018)

**plans and policies relating to public health emergencies in Sierra Leone** (Section 1.8), particularly the National Action Plan for Health Security.

**Informed by the latest international guidance:** The plan has utilised the latest WHO 2019 Pandemic Influenza Planning Guidance meant to support specifically the development of national plans under the PISP Framework. These include the WHO Pandemic Influenza Checklist<sup>4</sup>, The Pandemic Influenza Risk Management Document<sup>5</sup> and the WHO guidance for surveillance during an Influenza Pandemic<sup>6</sup>. The plan has also utilized existing Pandemic preparedness plans from a number of developed and developing countries as best practice guidance.

**Informed by a situation analysis and the NAPHS Plan:** The main sources of information used to inform the analysis (Section 3) were a desk review of the existing plans and guidelines, interviews and observations undertaken during assessment missions in November 2018 and January 2019, and discussions held before and after the missions. The findings were collated into the WHO checklist in a separate document. The workshops and the findings from the NAPHS process also contributed to the Situation Analysis. The NAPHS has subsequently been published and this plan is fully aligned with this overarching document.

## 1.4 Sierra Leone Overview

**The Republic of Sierra Leone**<sup>7</sup> is located on the west coast of Africa and covers an area of 71,740 km<sup>2</sup>. The Republic of Guinea borders it on the north and northeast, and the Republic of Liberia borders it on the east and southeast. On the west and southwest, the Atlantic Ocean extends for approximately 340 km. The country is divided into four distinct physical regions: the coastal swamp, the Sierra Leone Peninsula, the interior plains, and the interior plateau and mountain region. The Sierra Leone Peninsula, which is the Western Area and the site of the capital city of Freetown (population 1,050,301), is a region of thickly wooded mountains that run parallel to the sea for about 40 km. Other major cities are Kenema, Bo and Makeni.

**The population of Sierra Leone is estimated at around 7 million people in 2017**<sup>8</sup>, with an annual population growth of 3.2 percent. The country has a rural population of 59% and urban population of 41%. Sierra Leone, like the rest of West Africa, has been experiencing rapid urbanization for more than 50 years, as increasing numbers of people become permanently concentrated in its cities.<sup>9</sup> There are about 15 distinct ethnic groups reflecting a rich cultural diversity. The population is predominantly young with almost 46% under the age of 15 years, and only 4% aged over 65 years.<sup>10</sup> The working age population (15-64 yrs.) represent 55.6% of the total population with a literacy rate of 51.4% for persons above 10 years of age.

**Socio-Economic Context:** Sierra Leone is considered one of the poorest countries in the world and is ranked 179<sup>th</sup> out of 188 countries in the UN Human Development Index 2016<sup>11</sup>. Although significant progress has



<sup>4</sup> A checklist for Pandemic Influenza risk and impact management (update 2018): Building capacity for Pandemic response

<sup>5</sup> Pandemic Influenza Risk Management: A WHO guide to inform and harmonize national and international Pandemic preparedness and response. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.

<sup>6</sup> WHO guidance for surveillance during an Influenza Pandemic: 2017 update. Geneva: World Health Organization; 2017.

<sup>7</sup> Four References for section 1.4 <http://www.worldbank.org/en/country/sierraleone/overview>, <https://www.britannica.com/place/Sierra-Leone> <http://www.afro.who.int/countries/sierra-leone>, [https://en.wikipedia.org/wiki/Sierra\\_Leone](https://en.wikipedia.org/wiki/Sierra_Leone) and Sierra Leone Demographic Health Survey 2013

<sup>8</sup> Statistics Sierra Leone (2015) population projection

<sup>9</sup> Sierra Leone 2015 Population and Housing Census Thematic Report on Migration and Urbanization

<sup>10</sup> Statistics Sierra Leone and MOHS (2014). Demographic and Health Survey 2013

<sup>11</sup> [http://hdr.undp.org/sites/default/files/2016\\_human\\_development\\_report.pdf](http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf)

been made since the end of the civil war in 2002, the country was far from reaching the Millennium Development Goals by 2015. The population has generally poor access to clean water and sanitation with only about 40% of people in rural areas having access to an improved water source. The Sierra Leonean economy is predominantly driven by agriculture, which accounts for about half of the real gross domestic product (GDP). The service sector is about 34% of GDP, with manufacturing at only 2%. The mining sector accounted for less than 6% of GDP between 2001 and 2011 but this increased to 12% in 2012<sup>12</sup>. Coffee, cocoa, and fish are the major agricultural exports of the country. The performance of the Sierra Leonean economy has been declining since the post-independence so several government policies were aimed at improving the economy and quality of life, including the Agenda for Change, and the Agenda for Prosperity. The overall economy then grew at an annual average of 6% between 2007 and 2012 and it was noted that infrastructural development and social services were effective strategies to create jobs for youth, including the Cash for Work Programmes. The goal is to transform Sierra Leone into a middle-income country by 2035.

**Climate:** The country experiences two main seasons: the dry season, between November and May, characterized by the *harmattan* a hot, dry wind that blows from the Sahara and the wet/rainy season from May to November when rain falls almost daily. Conditions are generally hot and humid all year round. Mean monthly temperatures range from mid-20s C° to the low 30s C°.

**Political and administrative Structure:** Sierra Leone became independent from the UK on 27 April 1961. The current constitution was adopted in 1991, though it has been amended several times, the last revision being in 2017. Sierra Leone is a constitutional republic with a directly elected president and a parliament and held its fourth democratic elections on 7<sup>th</sup> March 2018. The country is administratively divided into five major regions: Northern Province, North Western Province, Southern Province, Eastern Province and the Western Area where the capital Freetown is located. The regions are further divided into sixteen districts, while the districts in turn are subdivided into 190 chiefdoms and sections, governed by traditional Paramount Chiefs and Section Chiefs respectively.

**Burden of Disease Analysis:** The top 10 causes of death in 2015 in Sierra Leone were malaria, lower respiratory tract infections, diarrhoeal diseases, Ebola<sup>13</sup>, haemoglobinopathies, cerebrovascular disease, ischemic heart disease, HIV/AIDs, meningitis, neonatal sepsis, neonatal preterm birth, and neonatal encephalopathy<sup>14</sup>. Overall life expectancy at birth is 50.1 years.<sup>15</sup> Although its incidence has decreased over the last years, Malaria<sup>16</sup> remains the most common cause of illness and death in the country, accounting for about 50% of outpatient visits and 38% of hospital admissions. Malaria accounts for about 41% of all hospital deaths among children aged under 5 years (and 27% adult deaths). Lower respiratory tract infections, malaria and diarrhoea combined are responsible for around 44% of all child deaths. Tuberculosis is already a leading cause of adult deaths and HIV prevalence (currently ~ 1.5%) is increasing. Non-communicable diseases (such as cardiovascular disease, stroke, cancer and mental ill health) are increasingly prevalent and remain under-recognised. The population has an extremely high prevalence of risk factors for non-communicable diseases such as tobacco smoking (nearly half of adult males) and hypertension (~42% adults), presenting a potential for a dual burden of disease<sup>4</sup>.



<sup>12</sup> Statistics Sierra Leone 2012

<sup>13</sup> Ebola as one of the top 10 causes will change as burden of disease figures are updated after the recent outbreak.

<sup>14</sup> <http://www.healthdata.org/sierra-leone>

<sup>15</sup> WHO Sierra Leone Country Profile. <http://www.who.int/countries/sle/en/>

<http://www.worldlifeexpectancy.com/sierra-leone-life-expectancy>

<sup>16</sup> [http://www.aho.afro.who.int/profiles\\_information/index.php/Sierra\\_Leone:Analytical\\_summary\\_-\\_Health\\_Status\\_and\\_Trends](http://www.aho.afro.who.int/profiles_information/index.php/Sierra_Leone:Analytical_summary_-_Health_Status_and_Trends)

**Sierra Leone has significant and urgent child and maternal health challenges:** The country has one of the highest child mortality rates in the world with 156 deaths per 1,000 live births in children under 5 years. Sierra Leone also has one of the highest malnutrition rates in the world with more than a third of children chronically malnourished; in 2010, 22 percent of children were underweight, 44 percent were stunted or had a low height for their age, and eight percent were wasted or had a low weight for their height. Despite its prevalence, malnutrition has only relatively recently come into focus as a concern as the number of underweight children has increased from 22% to 24 % from 2010 to 2017.<sup>17</sup> Malnutrition weakens the immune system and would contribute to increased mortality in children during an Influenza Pandemic. The country also has the highest maternal mortality rate in the world with 1,165 deaths per 100,000 live births, 6 times the global average.<sup>18</sup>

**Animal Health:** Animal husbandry is a key economic activity in the country, especially in the north of Sierra Leone. However, wildlife has largely been depleted, mainly as a result of encroachment into areas of natural vegetation. Animal health disease surveillance has now been strengthened and mass animal vaccination (e.g. for PPR, NCD) is periodically carried out. Animal health personnel work closely in partnership with human health, particularly at national level, but this increasingly at district level too, in the various public health endeavors that require a One Health approach. There is, however, a major constraint in as far as human resources for animal health are concerned. There is however the potential of both between CHWs and CAHW at local level to be trained and provide surge capacity in the case of a Pandemic.

#### **Health, Environmental, Political and Social Implications in response to an Outbreak:**

- The fragility of the health, social and economic sectors (due to poverty, illiteracy, lack of infrastructure and trained personnel) means that there is low community resilience when facing a health emergency
- The high levels of poverty make access to transport<sup>19</sup> and paying for health care very difficult, particularly as under the current policy everyone over 5 (apart from pregnant and breastfeeding women) should be paying out of pocket for care. This means that people are reluctant to seek help and turn to alternative community cures.
- The high level of illiteracy means that people often do not access health care appropriately or are able to follow prescriptions or guidelines to better health. They often leave health problems until it's almost too late and do not recognise the early signs of illness, leading to very sick people being brought to hospital. This could overburden health services during an infectious disease outbreak.
- The lack of mobility of the population and poor road network make access to secondary health care very difficult for many families, especially since Freetown is not easily accessed from all part of the country. Getting urgent supplies to a remote area can also be very problematic at certain times of year and some communities can only be reached by bike or boat.
- Being a post conflict country recently impacted by Ebola means that there are many NGOs, foreign governments, UN organisations and others aid agencies working in the country, which makes for a very complex working environment with a multiplicity of priorities and donor resources, driven by many agendas.
- The poor water, sanitation and electricity supplies have a direct impact on the health systems ability to function.
- Ebola has put a renewed world focus on the risk of outbreaks and the need for health systems to respond to outbreaks. Significant resources have been put into the health system at national and district level, to make the services more resistant to shocks and this is evident with increased number of personnel with specific surveillance and response roles.

<sup>17</sup> <https://borgenproject.org/malnutrition-in-sierra-leone/>

<sup>18</sup> Unicef statistics [http://www.unicef.org/infobycountry/sierraleone\\_statistics.html](http://www.unicef.org/infobycountry/sierraleone_statistics.html)

<sup>19</sup> [https://mohs-portal.net/wp-content/uploads/2017/10/MSF\\_Reducing-maternal-and-child-morbidity-and-mortality-in-Sierra-Leone\\_web.pdf](https://mohs-portal.net/wp-content/uploads/2017/10/MSF_Reducing-maternal-and-child-morbidity-and-mortality-in-Sierra-Leone_web.pdf)

- The Animal health system has not experienced the same level of development (in terms of increased numbers and improved capacity) as the health system in recent years. Hence, key staff, like District Livestock officers, who would be involved in a future response, are not trained.
- There is also an enhanced awareness of the vital role of communities in tackling and supporting public health improvements and in tackling outbreaks<sup>20</sup> so health services must continue to find new ways of engaging and working with the communities.
- For human health, regular availability of medical supplies, consumables reagents and fuel remain the biggest challenge; international donors and INGOs are often providing supplies for specific responses.

## 1.5 Overview of One Health Partners Structures and Workforce

### 1.5.1 The Health System: Ministry of Health and Sanitation

**Health sector mixed economy:** Sierra Leone's health service delivery system is diverse; comprising of Government, religious missions, local and international NGOs and the private sector. There are also public, private for profit, private non-profit and traditional medicine practices. The private health facilities operate under the authority of individual owners and/or boards of directors, mainly in urban areas.

**Leadership:** The Ministry of Health and Sanitation is responsible for overall policy direction and is organized into two main divisions at the central level: medical services and management services, led by the Chief Medical Officer (CMO) and the Health Minister.

**Districts:** At the district level, the same two-division approach is adopted; district health services and the district health management team (DHMT) are both under the leadership of District Medical Officer (DMO) while District Councils also hold some of the budget.

**Structure:** The public health delivery system comprises of three levels:

- **Primary Care** is provided by peripheral health units (PHUs) and delivered from over 1,300 peripheral health units (PHUs) at three basic levels:
  - Community Health Centre:(CHC) - in Chiefdom headquarter towns (10,000 to 20,000 population)
  - Community Health Posts (CHP) - in large villages/small town (5000 to 10,000 population)
  - Maternal and Child Health Posts (MCHP) generally located in villages (less than 5000 population) and typically covering 5/10 small villages nearby
- **Secondary Care** include 13 District Government referral hospitals, several public hospitals in Freetown and other private and mission hospitals in Freetown and across the country, and the mission hospitals in Kamakwie and Serabu. There are also NGO supported hospitals including the Masanga and the Bo private clinic and other new facilities such as Aspen in Freetown
- **Tertiary and Regional Care** are mainly concentrated in Freetown and the Western Area and include: PCMH (Maternity Hospital), Connaught, Ola During Children's, Lakka and Jui Hospital.

The provision of health care at all levels is underpinned by the Basic Package of Essential Health Services (2015-2020), which is a service specification for all levels of the health sector.

**Human Resources for Health** is a crucial component in delivering high quality, affordable and accessible health care services and the most important factor in the ability to respond during a Pandemic. However, in Sierra Leone there is chronic understaffing with persistent gaps in human resource capacity across all cadres

<sup>20</sup> Community matters – why outbreak responses need to integrate health promotion Ilona Kickbusch<sup>1</sup> and K. Srikanth Reddy  
<http://journals.sagepub.com/doi/pdf/10.1177/1757975915606833>

and health care levels. According to WHO, Sierra Leone has <1 physicians per 20,000 population. As at June 2016, MOHS<sup>21</sup> HRH briefing indicated that it employs 7,121 staff, of which 70% are clinical professionals who provide direct patient care for more than 7 million people. Most of the public sector health workforce provides services in Government facilities, with a small number posted in private facilities. The government health workforce is distributed across approximately 1,323 workstations, including hospitals, peripheral health units (PHUs), clinics and administrative offices. The health workforce in Sierra Leone is also made up of unsalaried workers, either supported by NGO stipends or solely by informal earnings, plus additional staff funded directly by the UN and INGOs. They are often only accountable to the organizations supporting them, which can also be problematic. The MOHS HR Directorate figures (2016) suggest that about 3,690 people are serving as health professionals providing patient services. The health workforce is managed and deployed centrally by the MOHS, so that they can roster staff to where they are most needed and balance the government and non-governmental staff as well as levels of skills and expertise.

**Health Financing**<sup>22</sup>: The per capita total expenditure on health services is approximately \$95 USD. The biggest contribution (76%) to this expenditure is from individual service seekers who pay for the user fees (out of pocket expenditure) while 16% is from the government and 13% comes from donors (excluding donor programme budgets to NGOs etc.). Expenditure on health as a percentage of total government expenditure is 10%, which is still significantly below the 15% target of the Abuja Declaration. The government is heavily reliant on donors and partner organizations for support of its health programs with funds flowing through budget support or directly to the Ministry and implementing partners.

**Health Equipment, Supplies and Infrastructure**: The overall supply chain and cold chain management has improved over recent years with significant donor support. However, the underdeveloped 'push' system of providing drugs and supplies to hospitals under the Free Health Care Initiative (FHCI) leads to under supply and this is currently being addressed. Also, the cost recovery system is very problematic leading to lack of drugs to treat those who do not fall under FHCI and this is compounded with fake medicines in circulation. Despite sustained investment in infrastructure since the implementation of FHCI in 2010, many health facilities do not have running water or electricity.

### 1.5.2 The Environmental Protection Agency (EPA)

**The EPA** is the national body that formulates national environmental policies and is in charge of coordination of all environmental management programs, enforcement and compliance to legislative proposals, standards and guidelines on the environment in accordance with the environmental protection act of Sierra Leone. The EPA ensures the integration of environmental concerns in overall national planning by developing modalities and maintaining linkages or partnerships with relevant government ministries, departments and agencies. The EPA also leads in creation of policy and legislation for regulation of environment management. The EPA has a national and regional structure but then works with city and district councils to deploy its role at that level.

### 1.5.3 The Office of National Security (ONS)

**The ONS** is the national mandated authority for disaster management, and oversees development of disaster risk reduction and disaster management in all ministries and sectors of the economy as set out in the Hyogo protocol and the Sendai framework. ONS works closely with the MoHS and other stakeholders during public health emergencies. It has a structure providing personnel at both national and district levels.

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<sup>21</sup> HRH Health Summit June 2016 Briefing ' Human Resources for Health in Sierra Leone'

<sup>22</sup> NAPHS



## 1.5.4 The Ministry of Agriculture and Forestry (MAF)

The **MAF** role associated with outbreaks mainly falls under the Livestock and Veterinary Services (LVS) Division. The LVS Division is in charge of both Livestock and Animal Health (AH) activities. At the central level, responsibilities are shared between two sub-directorates via the Deputy Director of Animal Health and the Deputy Director of Animal Production. However, at local levels (districts, posts), the same personnel carries out all these tasks (Senior Livestock Extension Officers, Livestock Extension Officers, Senior Livestock Inspectors, Livestock Inspectors and Livestock Assistants). This is of high importance when evaluating the number of people available on the field. Roughly, we have estimated that about 70% or less of work-time is devoted to animal health tasks at local levels. The main field workers are as follows:

1. Community Animal Health Workers (CAHWs) are present in chiefdom and village levels and have been given basic treatment skills to care for farm animals
2. District Livestock Officers (DLOs) and District Livestock Assistants are present at all chiefdom levels
3. District Veterinary Officers (DVOs) or District Livestock Officers (DLOs) are present at District level and have the skills to advice on the general care to be given to animals. They also send reports to the national Ministry after collecting data from the staff at Chiefdom levels, like CAHWs and DLAs

## 1.5.5 Availability of Medical Supplies and Consumables:

The centralized management of supplies for the health system uses a push system (i.e. based on what is available and fair distribution regardless of use or demand) and does not often take into consideration usage, for example when a hospital treats only children. For Animal health, the supply chain is virtually non-existent with FAO supporting much of the supply chain management.

### Workforce and System Implications in relation to an outbreak:

- Insufficient staffing levels are a key barrier to a resilient and responsive health system; this means that during normal times the health system is severely constrained
- Hospitals and PHUs are unable to manage their own workforce planning and do not hold the budget for human resources, by far the biggest hospital costs.
- The systems for patient referrals remain under-developed but are improving
- Free health care for the under 5s and pregnant women puts an additional burden on health facilities as these patients cannot be turned away. This is one of the reasons why facilities cannot manage demand nor are able to generate any income based on additional patients to support the costs of the extra care.
- The under developed 'push' system of providing drugs and supplies under Free Health Care to hospitals leads to under supply. This is particularly a problem when patients are being treated free of charge and without income to support care.

## 1.6 International Health Regulations: Implications & Compliance

The Government of Sierra Leone is party to the implementation of International Health Regulations (IHR 2005) which is a legal instrument that binds WHO member states to collaborate to prevent, protect against, control and respond to public health threats of international concern. Through IHR, countries, have agreed to build their capacities to detect, assess and report public health events. IHR implementation in Sierra Leone is mainly done through the National Action Plan for Health Security (NAPHS) 2018-2022. In accordance with paragraph 1 of Article 54 of the IHR, countries must report on IHR implementation to the World Health Assembly (WHA) and the World Health Organization (WHO) Executive Board. This is done through mandatory annual reports and voluntary joint external evaluation every 4-5 years.

## 1.7 Sierra Leone Strategies, Policies and Priorities for Health Emergencies

**General Health Sector Planning:** The MOHS initiated an inclusive process in 2017 to develop the *National Health Sector Strategic Plan (NHSSP) 2017-2021*. The NHSSP supports the One Health approach, which involves joint solutions to address and bridge human health, environmental health and animal health issues. *The Basic Package of Essential Health Services 2015-2020* also serves as a good baseline document when considering business continuity issues during an outbreak.

**A range of key plans and surveillance systems:** There have been several outbreak preparedness and response plans, policies and approaches developed since the EVD outbreak. This includes the development of the *All Hazards Public Health Incident and Emergency Response Plan (IEPR) 2017*, the *Sierra Leone National Action Plan for Health Security (NAPHS) (2018-22)* and the *Republic of Sierra Leone National One Health Strategic Plan 2019-2023*. A few disease specific response plans have also been developed, including the *National Ebola Virus Disease (EVD) Preparedness and Response Plan (2016)* and the *Cholera Multi-Year Multi-Sectoral Plan (2014)*.

**The One Health Approach:** Usually termed the One Health Platform, this initiative brings together many partners and is jointly led by four main government ministries: the MOHS, MAFS, ONS and EPA. The One Health Approach was agreed in 2017, with Ministries signing a Memorandums of Understanding (MOU) in June 2017. The official launch of *The Republic of Sierra Leone National One Health Strategic Plan 2019-2023*<sup>23</sup> took place on 3rd November 2018. This approach is starting to improve coordination between human and animal health, strengthen cross-border collaboration and initiatives, and develop community-based surveillance as well as contingency plans for the health sector and for the non-health sector.

To support the One Health Platform, a One Health governance structure is in place across the GoSL while, on an implementation level, there is a **One Health Technical Working Group (TWG)**<sup>24</sup>, chaired by the MOHS Directorate of Health Security and Emergencies (DHSE). This TWG is guiding the joint work of the Ministries and has acted as the steering group for the development of this Pandemic Influenza Strategic Plan. However, the development of this plan has gone beyond 'One Health' **to ensure that a Whole Society approach is taken** by engaging other Governmental sectors, Agencies, Institutions and essential services from the private sector that may be involved with Pandemic response, and ensure that they are contributing to the Strategic approach and whole society business continuity planning.

**The National Action Plan for Health Security (NAPHS):** This plan was developed in response to JEE recommendations to strengthen IHR core capacities. Costed at \$291m USD, it is recent (launched in December 2019), comprehensive and detailed. The Plan's objectives are all inclusive i.e. addressing prevention of disease outbreaks (including Zoonotic), capacity building both at national and regional levels for early detection and response to public health emergencies and other public health concerns. It has 19 thematic areas and fosters a multisectoral partnership for prevention, detection and response as well as looking at financial sustainability for the attainment of the national health Security.

**The All Hazards Public Health Incident and Emergency Response Plan (IEPR) 2017:** The All Hazards Plan is more generic and details how the MOHS responds to and recovers from any significant public health related incidents. It details generic outbreak response activities, roles and procedures. This plan was reviewed in October 2019.

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<sup>23</sup> Republic of Sierra Leone National One Health Strategic Plan (November 2018)

<sup>24</sup> Annex two: One Health Technical Working Group Invitation List

**Emergency frameworks and risk management approach:** At a broader emergency response level, the GoSL established in 2004 the National Disaster Management Department in the Office of National Security and adopted disaster risk reduction (DRR) as a national and local priority. A National Disaster Risk Management Policy and a National Disaster Risk Management Strategy and Action Plan have been developed. While focussing on natural and man-made disasters, the emergency response structure could be activated in case of a severe Pandemic with impact across all sectors.

**Influenza is a disease gaining increased priority:** A cross sectoral “All Hazards” vulnerability risk analysis and mapping (VRAM) took place in Makeni in November 2018 and included Influenza among the 10 potential priority diseases for further prioritisation for the next version of the IDSR. In addition, Sierra Leone participated in December 2018 in a West Africa wide disease priority exercise held in Senegal which included Influenza among the 7 priority diseases<sup>25</sup> alongside Anthrax, Rabies, Ebola and other Viral Haemorrhagic Fevers, Zoonotic Tuberculosis, Trypanosomiasis and Yellow Fever. However, the only Influenza plan available was the *Emergency preparedness and response action plan for the prevention and containment of avian and human Influenza (bird flu) in Sierra Leone (2006)*, which focused mainly on the agricultural sector and needs substantial revision being 13 years old, hence the significant need for an up to date Pandemic Influenza Plan in Sierra Leone.

## 1.8 Coordination and Communication

**The impact of Ebola on strengthening capacity:** In order to fully coordinate the response during the Ebola outbreak, the Government of Sierra Leone put in place the **National Ebola Response Centre (NERC)** and the **District Ebola Response Centres (DERCs)** at the national level and in each of the 14 districts. With bilateral and international help, the NERC’s and DERCs’ response proved to be quite successful in coordinating the response of various partners<sup>26</sup>. There was significant learning from managing the Ebola outbreak and new (post 2016) operational structures and capacities were built in the health system including the new Department of Health Security and Emergencies. This extended more broadly and influenced the development of the previously mentioned One Health Approach (Section 1.7).

**New Health Department and Operations Centre:** The NERC was redesigned into the **Emergency Operations Centre (EOC)** in 2016 and this is now led by a new **Department for Health Security and Emergencies** within the Ministry of Health and Sanitation based in a new facility in the western end of Freetown and co-located with several key agencies, including USA and China CDCs. There are weekly cross sectoral surveillance meetings at the EOC where all the partners meet and review the week’s surveillance data and respond to any specific emerging issues. There is also a Service Level Agreement (SLA) to coordinate partner activities under the One Health platform. However, dedicated staff is still needed for One Health Coordination at national and district levels. **The Department of Health Security and Emergencies has been designated as the national focal point (NFP)** for the oversight and implementation of the IHR regulations, resulting in easier coordination and 24/7 NFP availability. The further strengthening of IHR leadership for better coordination and communication across relevant sectors is being taken forward under the NAPHS Action Plan. **The proposed coordination mechanism in the event of a Pandemic is outlined in Annex Four and is taken from the NAPHS as this would be the structure used in the event of a Pandemic.** Further organisational changes to this relatively new structure are now planned to **create a national public health body.**

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<sup>25</sup> ONE HEALTH ZOO NOTIC PRIORITIZATION FOR MULTISECTORAL ENGAGEMENT IN THE ECONOMIC COMMUNITY OF WEST AFRICAN STATES (ECOWAS) REGIONAL WORKSHOP 7-10 December 2018 Dakar, Senegal

<sup>26</sup> Sierra Leone’s Response to the Ebola Outbreak Management Strategies and Key Responder Experiences, Ross et al. Chatham House, 2017.

## 1.9 Ethical, Legal and Funding Considerations

### 1.9.1 Legal Framework

According to the JEE 2017, legislation and several regulations and administrative documents that govern public health surveillance and response have been adopted in Sierra Leone. These are:

1. Public Health Ordinance Act, 1960 that empowers the Minister for Health and Sanitation, upon declaration of a public health emergency, to take wide ranging measures in support of the response and recovery from an epidemic. In the preparedness and response to a Pandemic Influenza, the Minister for Health and Sanitation will depend on the public health ordinance to institute certain public health measures e.g. mandatory screening at border crossings, limitations of overcrowding, limitation of littering etc.
2. The Animal Health Act also empowers the Director of Livestock, upon declaration of a public health emergency, to take wide ranging measures in support of the response and recovery from an epidemic.
3. Other Acts of Parliament, including The Radiation Protection Act, 2012, the Animal Disease Ordinance, 1949, the Environmental Protection Act, 2008, and the Food Safety Act, 2015.

The JEE recommendations included speeding up the review of the Public Health Ordinance and develop related policy guidelines; review other laws touching on the implementation of the IHR and develop their policy guidelines. The JEE also suggested assessing the Environmental Protection Act and MAF; improve, update or develop MOUs and other cross-border bilateral agreements to make them more comprehensive and, beyond EVD; improve intersectoral collaboration.

A detailed description of the Sierra Leone legal and policy framework for emergency response was also completed by the IFRC in 2009 as part of The International Disaster Response Laws (IDRL) study. It identified the following as the key gaps:

- International instruments which SL has signed to remain unimplemented and the key plans and policies remain in the draft stage
- Lack of expedited procedures for the entry of disaster relief personnel and goods
- Lack of a system for expedited registration of foreign nongovernmental organizations (NGOs)
- Cumbersome procedures with regards to duty waivers and duty-free concessions for relief consignments
- A recommendation that for a consolidation or further codification of disaster laws was made

Based on the IFRC report, the results of the learning from Ebola, and the findings of the JEE 2017, the Public Health Ordinance (1960) Act has been revised and finalized and it is anticipated to be enacted in 2019. Engagement with the Parliamentary Committee and civil society for enactment of revised Public Health Ordinance has begun and is part of the NAPHS Action Plan and this will be funded from REDISSE.

### 1.9.2 Ethical Considerations

The implementation of the Sierra Leone Pandemic Influenza Strategic Plan shall be equitable. Services will be provided equitably and will be available to all persons. All geographical regions and demographic groups will be given due consideration as the unfolding situation demands. During the response phase of a Pandemic Influenza outbreak, the Minister for Health and Sanitation will reserve the right to draw upon the powers conferred on him/her by the public health ordinance to curtail certain individual liberties, in the interest of public good. The implementation of this plan recognizes the right of patients and individuals that receive services from health care providers to privacy and confidentiality, as guaranteed in the MoHS policies on medical services. The implementation of this plan shall put into consideration the requirement for a

reasonable balance between the public good to be achieved and the degree of personal invasion. If the intervention is gratuitously onerous or unfair, it will overstep ethical boundaries. In principle, for the purposes of this PISP, the interests of the wider community will supersede those of individuals or groups. The principles of reciprocity shall apply. The plan implementation shall pursue relationships between parties that promote corresponding mutual trust.

### **1.9.3 Funding Considerations**

The constrained nature of the Sierra Leone Gross Domestic Product (GDP) limits domestic sources of funding, therefore approximately 90% of health emergency support is being provided by international partners. Following the 2001 Abuja Declaration Commitment,<sup>27</sup> the GoSL has increased GDP contribution to health to 11%, but still below the recommended 15%.

Recently, a resource mapping for implementation of IHR was conducted and the costs built into the NAPHS Action Plan. A Contingency emergency financing mechanism exists via REDISSE but accessing these funds is considered a slow process when there has been a need for contingency emergency funds, resulting in slow provision of funds for the facilities at the frontline. The NAPHS Action Plan intends to allocate some budgetary amounts to relevant ministries for IHR implementation, commencing in 2019, which could partially alleviate the funding situation. The rapid deployment of resources will be tested through exercises to improve swift allocation to facilities. In our assessment, the main challenge reported was access to the monetary resources required for fuel and logistical support plus access to the necessary equipment and supplies.

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<sup>27</sup> [https://www.who.int/healthsystems/publications/abuja\\_declaration/en/](https://www.who.int/healthsystems/publications/abuja_declaration/en/)

## 2. Influenza in Context (National & International)

### 2.1 Seasonal Influenza

**Seasonal Influenza** is the occurrence of acute viral infections, caused by Influenza viruses; these are easily transmitted from person to person and circulate globally causing annual epidemics during winter in temperate regions. Epidemics can result in significant morbidity and mortality and in decreased productivity due to employee absence from work. All age groups are affected by seasonal Influenza; however, those most at risk of complications or severe disease are children under 2 years of age, adults over 65 years of age, pregnant women and those with co-morbidities. These groups are usually targeted for yearly Influenza vaccination. Due to seasonal changes in antigenicity of the virus as a result of antigenic drift, Influenza vaccine compositions are revised annually and new vaccines are produced each year. The burden of seasonal Influenza in Sierra Leone is relatively unknown, but to date it has not been considered a disease to cause significant morbidity or mortality, although Pneumonia, which is one of the top three diseases causing infant mortality, could develop as a complication of Influenza.

### 2.2 Pandemic Influenza

**History of Influenza Pandemics:** In the last hundred years, four global Pandemics have occurred. The 1918 Pandemic (Influenza A/H1N1) infected an estimated 500 million and killed 50-100 million people worldwide. More recent Pandemics, although not quite as deadly, still resulted in significant morbidity and mortality. The 1957 Asian Flu Pandemic (Influenza A/H2N2) resulted in an estimated 2 million deaths globally with a case/fatality rate of 1/4000 and the milder 1968 Hong Kong flu Pandemic (Influenza A/H3N2) caused an estimated 1 million deaths. The most recent Pandemic occurred in 2009 (Influenza A[H1N1] pdm09). Unlike seasonal Influenza, Pandemic Influenza strains often cause severe disease among younger, healthy individuals.

**Table 1: Characteristics of the past four influenza pandemics**

Pandemic year of emergence and common name	Area of origin	Influenza A virus subtype (type of animal genetic introduction/recombination event)	Estimated reproductive number (34, 35)	Estimated case fatality	Estimated attributable excess mortality worldwide	Age groups most affected (36)
1918 "Spanish flu"	Unclear	H1N1 (unknown)	1.2–3.0	2–3% (37)	20–50 million	Young adults
1957–1958 "Asian flu"	Southern China	H2N2 (avian)	1.5	<0.2%	1–4 million	All age groups
1968–1969 "Hong Kong flu"	Southern China	H3N2 (avian)	1.3–1.6	<0.2%	1–4 million	All age groups
2009 -2010 "influenza A(H1N1) 2009"	North America	H1N1 (swine)	1.1–1.8 (38)	0.02% (39)	100 000–400 000 (40)	Children and young adults

**Aligning animal, human and environmental influences:** Influenza viruses that have caused Pandemics in the past have typically originated from animal Influenza viruses that have mutated to new forms able to infect and spread among humans, so-called zoonotic diseases. Close coordination between animal and human health sectors is needed to prevent or delay potential Influenza Pandemics, by detecting and controlling

these novel viruses in animal populations before they become capable of infecting and spreading among the human populations.

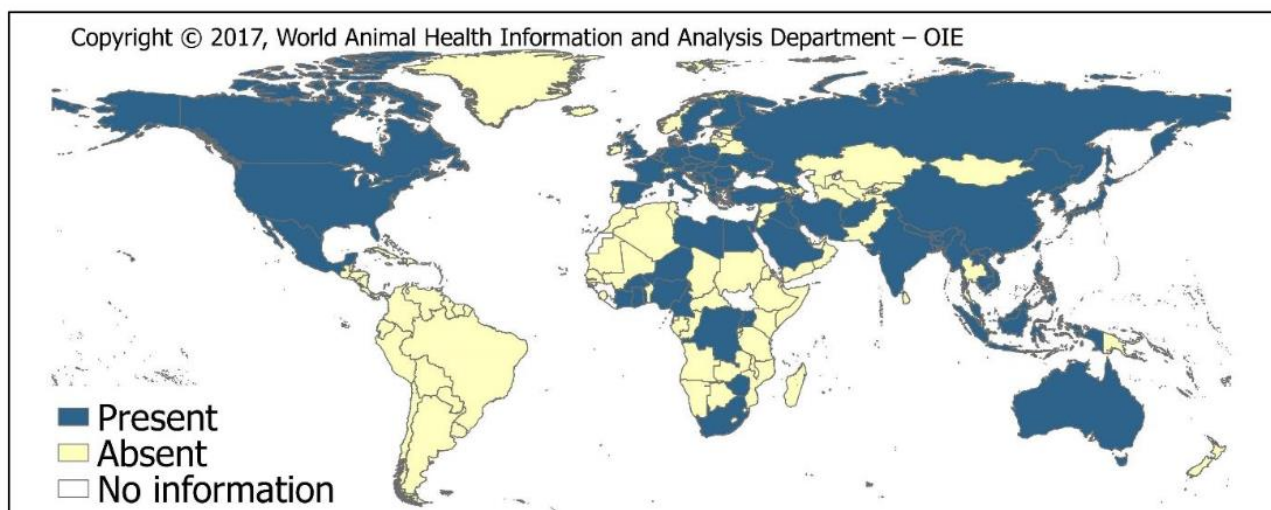
**The Threat of Avian Influenza nationally and internationally:** Avian Influenza (AI) is a highly contagious viral disease affecting several species of food producing birds (chickens, turkeys, quails, guinea fowl, etc.), as well as pet birds and wild birds. Occasionally mammals, including humans, may contract avian Influenza. Avian Influenza has captured the attention of the international community over the years, with outbreaks in poultry having serious consequences on both livelihoods and international trade in many countries. In addition, although most avian Influenza viruses do not infect humans, some strains, such as avian Influenza H5N1 and H7N9, are well known to the public because of their implication in serious and sometimes fatal infections in people.

There are many AI virus strains<sup>28</sup> (H5N1, H5N2, H5N8, H7N8, etc.) which are usually classified into two categories according to the severity of the disease in poultry:

1. **Low pathogenic** (LPAI) strains, which typically cause few or no clinical signs in poultry
2. **Highly pathogenic** (HPAI) strains, which can cause severe clinical signs and potentially high mortality rates among poultry.

The equivalent of a Pandemic in the animal populations is called a Panzootic, i.e. an outbreak of an infectious disease in animals that spreads across a large region or worldwide. Since 2013, we have observed two panzootics of Highly Pathogenic Avian Influenza (HPAI). The first started in 2004, peaked in 2006, and afterward the virus activity progressively decreased up to 2012. Since 2013, a second panzootic has been observed and is still ongoing. Between 2013 and 2018, HPAI has affected 68 countries and territories, with 7,122 outbreaks and a high number (12) of subtypes circulating.

As shown in the map below, between 2013 and 2018 all regions of the world were affected by HPAI outbreaks in domestic birds. The most affected regions were Asia, Africa and Europe. While no outbreak was reported in Sierra Leone, several countries in Central and West Africa have reported outbreaks of HPAI.



*Countries and territories affected at least once by HPAI outbreaks in domestic birds, January 2013-August 2018.*

Since 2013, HPAI outbreaks have resulted in the loss of approximately 122 million domestic birds worldwide (natural deaths and animals killed and disposed of), most of them (58%) in Asia. In Africa, more than 8

<sup>28</sup> <http://www.oie.int/en/animal-health-in-the-world/web-portal-on-avian-influenza/about-ai/>

million domestic birds were lost due to HPAI during the same period.<sup>29</sup> Avian Influenza normally spreads in birds but can also infect humans. Human infections are primarily acquired through direct contact with infected poultry or contaminated environments. Avian, swine and other zoonotic Influenza infections in humans may cause disease ranging from mild upper respiratory infection (fever and cough) to rapid progression to severe pneumonia, acute respiratory distress syndrome, shock and even death.

From January 2003 to 9 April 2019, there were 860 cases of human infection with avian Influenza A(H5N1) virus reported from 16 countries worldwide. Of these 860 cases, 454 were fatal (CFR of 53%). The last case was reported from Indonesia on 26 December 2017. Since 2013, a total of 1,568 laboratory-confirmed cases of human infection with avian Influenza A(H7N9) viruses, have been reported to WHO, with a CFR of 56%.<sup>30</sup>

While recently-identified avian Influenza viruses do not currently transmit easily from person to person, the ongoing circulation of these viruses in poultry is concerning, as these viruses cause severe disease in humans and have the potential to mutate to become more contagious between people.

**Pandemic strains:** While both Influenza A and B viruses cause seasonal outbreaks in humans, only Influenza A viruses have historically caused Pandemics. An Influenza Pandemic can only occur if there is efficient and sustained human to human transmission of a pathogenic Influenza subtype to which few people are immune. This leads to community wide outbreaks that can spread rapidly, both nationally and internationally. New Influenza viruses may arise through different mechanisms, including:

1. Mutation of an existing human virus (usually resulting in antigenic drift and unlikely to cause a Pandemic)
2. Mutation of an animal Influenza virus that acquires the capacity to infect and spread efficiently in the human population following the accidental infection of a human host (e.g. HPAI).
3. Re-assortment of viral strains that can infect a common host, leading to mutations enabling the spread in the human population of highly pathogenic animal strains. (e.g. Swine flu, since pigs can be infected by both human and avian flu viruses).

**International Guidelines:** The WHO Pandemic Influenza Preparedness (PIP) Framework brings together WHO Member States, industry, and other stakeholders to implement a global approach to Pandemic Influenza preparedness and response and encourage all countries to have their own national plans. This is because globally Influenza is considered the biggest true Pandemic threat. In 2019, the WHO AFRO region is supporting 14 countries in Africa (including Sierra Leone) to develop and implement PIPs. To this end, AFRO has recently developed new guidelines and tools for countries to follow in developing their plans in the context of existing outbreak response strategies and frameworks. This guidance has been built into this plan and the outputs from the international workshop in Brazzaville in May this year form part of the plan.

## 2.3 Pandemic Phases and Characteristics

### 2.3.1 Pandemic Characteristics

Every Influenza pandemic has its unique features. However, there are some common characteristics that have been observed from the last 4 pandemics and which can help in prevention and control strategies for future pandemics.<sup>31</sup> These include:

- Past influenza pandemics were characterized by a shift in the virus subtype

<sup>29</sup> [OIE Situation Report for Highly Pathogenic Avian Influenza](#), update 31/08/2018

<sup>30</sup> [WHO Avian and other zoonotic Influenza website](#)

<sup>31</sup> Miller MA, Viboud C, Balinska M, Simonsen L. The signature features of influenza pandemics--implications for policy. *N Engl J Med*. 2009 Jun 18;360(25):2595-8. doi: 10.1056/NEJMp0903906. Epub 2009 May 7.



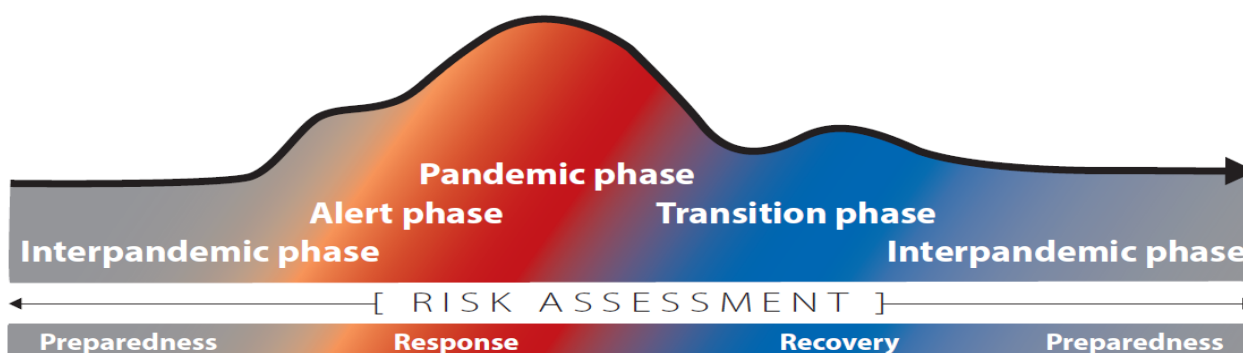
- Influenza pandemics have a shift of the highest death rates to younger populations as compared to the seasonal influenza epidemics where the elderly have the highest death rates. One possible explanation is partial immunity for the elderly due to past exposure
- There are successive pandemic waves during the period of each pandemic with each wave having a varying morbidity and mortality pattern. These waves could be due to adaptation of the virus to its new host, demographic or geographic variation, seasonality, and the overall immunity of the population
- Pandemics have higher transmissibility than that of seasonal influenza mainly because of high susceptibility of the population
- There are differences in pandemic impact in different geographic regions probably due to complex heterogeneity in the degree of immunity in local populations to the circulating influenza strains

### 2.3.2 WHO Pandemic Phases

The WHO Pandemic phases; **interPandemic**, **alert**, **Pandemic** and **transition**, describe the dynamic of the spread of a novel Influenza virus around the world, and are used to provide a high-level global view to assist with local risk assessments (see diagram below). Member States are encouraged to use national risk assessments, based on their own surveillance data, to inform Pandemic responses. This plan covers the period from preparedness during the interPandemic phase, detection of sustained human-to-human transmission during the alert phase, to the Pandemic phase and the transition phase. Surveillance guidance for the interPandemic phase and the early stages of the alert phase can be found in the WHO Manual for the laboratory diagnosis and virological surveillance of Influenza<sup>32</sup> and the Global epidemiological surveillance standards for Influenza<sup>33</sup>.

The WHO Pandemic Influenza phases reflect WHO’s risk assessment of the **global situation** regarding each Influenza virus with Pandemic potential infecting humans. Risk assessments will be continuous, starting with the time when a virus with Pandemic potential is identified. As the Pandemic evolves and more information is known about the Pandemic virus from virological, epidemiological and clinical data being collected, additional risk assessments will be performed and risk information updated. This information will inform the global view of the evolving Pandemic and guide the progression from one Pandemic phase to another. Of note is that individual countries may be in different phases at different times and should develop and perform regular risk assessments based on the local situation and circumstances as well as the global view.

#### The continuum of Pandemic phases\*



\*This continuum is according to a “global average” of cases, over time, based on continued risk assessment and consistent with the broader emergency risk management continuum.

<sup>32</sup> Manual for the laboratory diagnosis and virological surveillance of Influenza, WHO, 2011

<sup>33</sup> Global epidemiological surveillance standards for Influenza, WHO, 2013

The WHO global Pandemic phases are<sup>34</sup>:

<b>InterPandemic</b>	This is the period between Influenza Pandemics.	<b>RISK ASSESSMENT</b>
<b>Alert</b>	This is the phase when Influenza caused by a new subtype has been identified in humans. Increased vigilance and careful risk assessment, at local, national and global levels, are characteristic of this phase. If the risk assessments indicate that the new virus is not developing into a Pandemic strain, a de-escalation of activities towards those in the interPandemic phase may occur.	
<b>Pandemic</b>	This is the period of global spread of human Influenza caused by a new subtype based on global surveillance. Movement between the interPandemic, alert and Pandemic phases may occur quickly or gradually as indicated by the global risk assessment, principally based on virological, epidemiological and clinical data.	
<b>Transition</b>	As the assessed global risk reduces, de-escalation of global actions may occur, and reduction in response activities or movement towards <b>recovery</b> actions by countries may be appropriate, according to their own risk assessments.	
<b>InterPandemic</b>	This is the period between Influenza Pandemics.	

*\*WHO guidance and international standards are available that describe formats and how to conduct risk assessments<sup>35</sup>.*

These global phases will be used by WHO to communicate the global situation as a Pandemic evolves. They will be incorporated into IHR (2005) related communications to National IHR Focal Points, in Disease Outbreak News releases and various other public and media interactions, including through social media channels. Declaration of either a Pandemic or a Public Health Event of International Concern will be made by the WHO Director General based on risk assessment and expert evidence-based advice.

## 2.4 Sierra Leone Influenza Surveillance

**The position in Sierra Leone:** Influenza sentinel surveillance started in Sierra Leone in August 2011 and is one of the priority diseases for reporting in the country. However, there is only very limited Influenza surveillance. There are currently only 4 sentinel surveillance sites in Western Area Urban which include Ola During Children’s Hospital (SARI), Blue Shield Hospital (ILI & SARI), Jenner Wright Clinic (ILI) and Lumley Government Hospital (ILI & SARI). Influenza ‘due to a new sub type’ is part of the weekly disease surveillance and IDSR reporting.

**Influenza Like Illness (ILI)** - an acute respiratory infection with:

- measured fever of  $\geq 38\text{ C}^\circ$  and cough;
- with onset within the last 10 days.

**Severe Acute Respiratory Infection (SARI)** - an acute respiratory infection with:

- history of fever or measured fever of  $\geq 38\text{ C}^\circ$  and cough;
- with onset within the last 10 days and it requires hospitalization

**At the four sentinel sites**, data is collected for ILIs and SARIs, using the definitions in the box above. This data then contributes to both FluNet<sup>36</sup> and FluID<sup>37</sup>. The Data system is as follows:

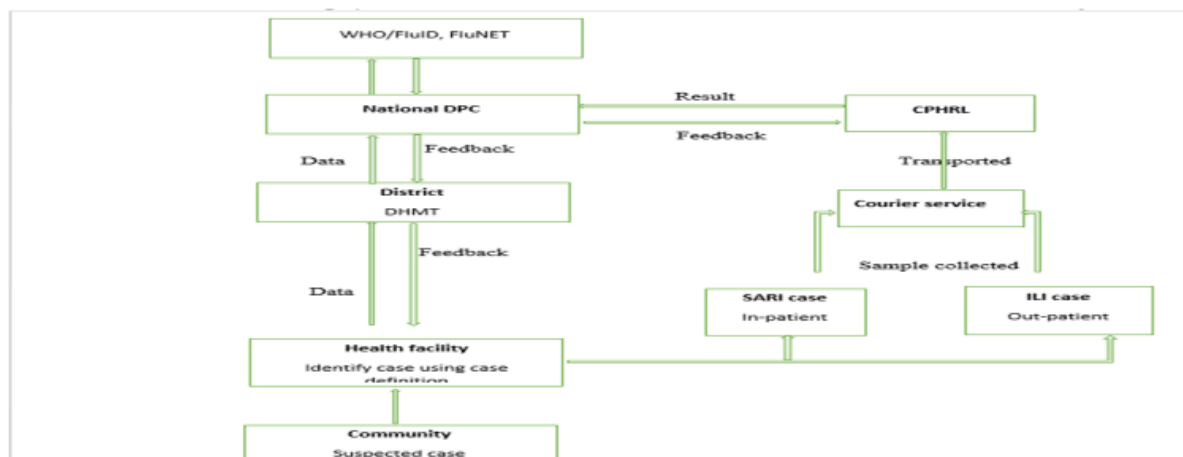
<sup>34</sup> Pandemic Influenza Risk Management Guidance

<sup>35</sup> Pandemic Influenza Risk Management Guidance section 4.2

<sup>36</sup> [https://www.who.int/Influenza/gisrs\\_laboratory/flunet/en/](https://www.who.int/Influenza/gisrs_laboratory/flunet/en/)

<sup>37</sup> [https://www.who.int/Influenza/surveillance\\_monitoring/fluid/en/](https://www.who.int/Influenza/surveillance_monitoring/fluid/en/)

## Flow chart for influenza sentinel surveillance system, Western Area Urban, Sierra Leone



The Summary of surveillance results in 2018 are as follows:

### Age group of Influenza samples analyzed in 2018, Sierra Leone (N=220)

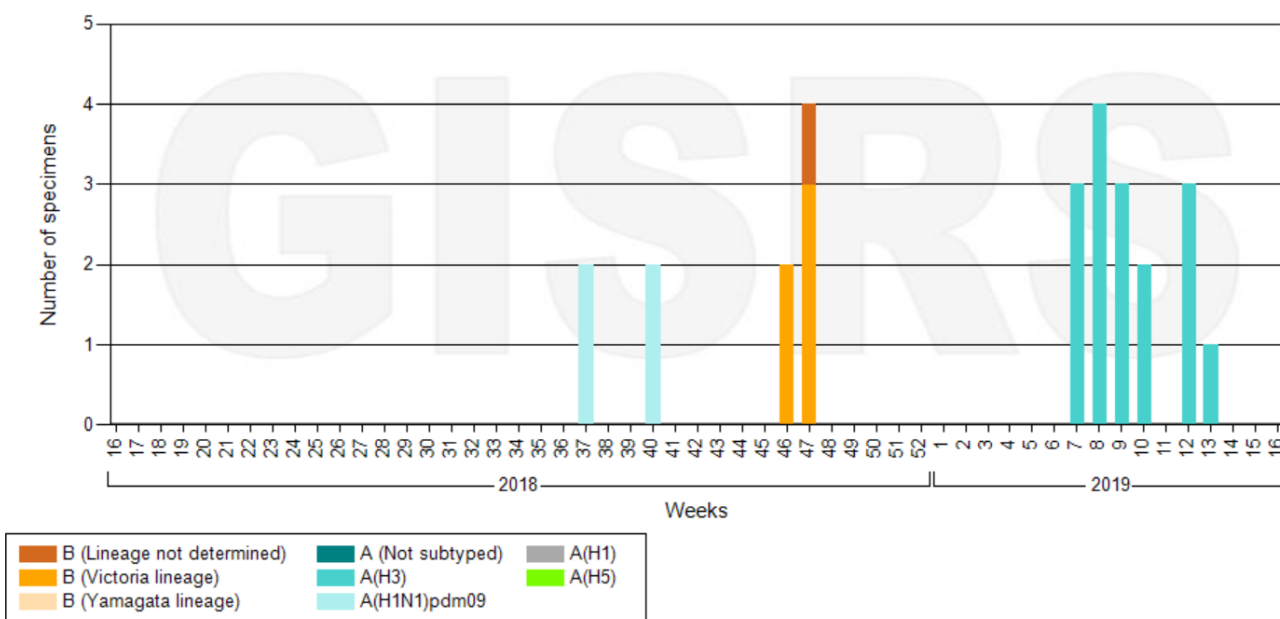
Age Group Distribution (Years)	Male	Female	Unknown Sex	Total
0-<2	71	79	2	152
2-<5	30	27	1	58
5- <15	2	0	0	2
15 -<50	0	0	0	0
50 < 65	0	0	0	0
≥65	0	0	0	0
Unknown Age Group	3	5	0	8
<b>Total</b>	<b>106</b>	<b>111</b>	<b>3</b>	<b>220</b>



**The 2018 data:** In 2018, more samples were collected on ILI (123) than SARI (89) and 8 were unknown. Laboratory surveillance on Influenza is more effective than the epidemiological surveillance. Lumley Government Hospital is the most consistent sentinel site for Influenza surveillance. The Sierra Leone data submitted is as follows:

## Sierra Leone

Number of specimens positive for influenza by subtype



Data source: FluNet ( [www.who.int/fluNet](http://www.who.int/fluNet) ), GISRS

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**Regional comparisons on surveillance data:** Across the virological surveillance in AFRO, 33 countries have the capacity for Influenza PCR, including Sierra Leone, and 26 Countries are regularly sharing Influenza data to FluNet, including Sierra Leone. 14 Countries have WHO recognized National Influenza Centres (NIC), but this does not include Sierra Leone. NICs collect virus specimens in their country and perform preliminary analysis. They ship representative clinical specimens and isolated viruses to WHO CCs for advanced antigenic and genetic analysis. There is a need to develop laboratory capacity so the country can be designated as a NIC. Currently, as part of Global Influenza Surveillance Response System (GISRS), the country send samples at least once every year to a World Health Organisation Collaborating Centre (WHO-CC) for further genetic and antigenic characterisation and vaccine production.

**The key achievements for sentinel surveillance are:** Availability of sentinel surveillance materials (Influenza protocols, SOPs, registers and data tools), installation of desktops plus epi info data-base for data entering and supplies of VTM tubes for specimen collection at sentinel sites. Sierra Leone have trained staffs on Influenza detection and diagnosis. Regular supportive supervision, mentorship and quarterly sentinel review meetings are also conducted.

**The key challenges are:** limited number of sentinel surveillance sites in Sierra Leone (only four sites), complexity in Influenza surveillance data analysis, few trained personnel (at all the sites, laboratory and surveillance), poor record keeping from most of the sites, untimely and incomplete weekly reporting from most of the sites, lack of consumables at the site (ODCH) and data inconsistency, hence consolidation difficult.

**Key improvements required:** Improved record keeping, timely completion of weekly reports, requirement for CPHRL to supply Lab reagents/kits and consumables to the sentinel sites and to have a clear Pandemic Preparedness Plan in place, expand the number of sites nationally after a review of effectiveness.

### 3. Situation Analysis

This situation analysis has been developed by using various sources of information as follows:

1. Group work during the plan development on the recent achievements and current challenges facing the country in terms of its current readiness to cope with an Influenza Pandemic in March 2019 (Section 3.1)
2. A situation analysis carried out by the consultants to support the development of this plan using the WHO checklist. There was a desk review of existing plans and assessments, including the JEE, held interviews and meeting and observed teams during two country missions. The findings were collated into the checklist in a separate document and a summary is presented in Section 3.2
3. A self-assessment undertaken by the Ministry of Health and Sanitation using the same checklist
4. The Summary of the NAPHS exercise (March 2019) of the current progress and continuing challenges

#### 3.1 Achievements and Challenges Analysis (March 2019)

This analysis comes from the participants at the March 2019 workshop. The summary below has been collated from a number of presentations plus group work based mainly on the Pandemic phases and key cross cutting themes and they each considered:

1. the recent top 10 key achievements and strengths that would assist in an Influenza Pandemic situation
2. the current top 10 challenges and constraints to overcome so that the country is better able to respond to an Influenza Pandemic

Preparing for a Pandemic Emergency	
Achievements/Strengths	Challenges/Constraints
<ol style="list-style-type: none"> <li>1. Directorate of Health Security and Emergency and One Health platform established</li> <li>2. One Health platform established in all the districts</li> <li>3. Political will and commitment</li> <li>4. Availability of validated sentinel surveillance protocol</li> <li>5. Robust surveillance system to detect and respond to outbreak</li> <li>6. Influenza testing now done in country (reagent available and effective laboratory)</li> <li>7. Strong institutional capacity especially human resources through trainings, development of guidelines and SOPs</li> <li>8. SOPs and data collection tools available at PoEs</li> <li>9. Multi-hazard response plan and the existence of Airport Public Health Emergency Preparedness Plan</li> </ol>	<ol style="list-style-type: none"> <li>1. Inadequate skilled personnel to address emergencies</li> <li>2. Delay in timely response to emergencies and outbreaks</li> <li>3. Inadequate supplies of drugs and consumables for emergency response</li> <li>4. Lack of updated Influenza Pandemic Preparedness Plan</li> <li>5. Inadequate support for sample collection and transportation to national reference laboratory</li> <li>6. Lack of standard structure in most of the PoEs</li> <li>7. Inadequate continuous training for emergency response</li> <li>8. One Health Platform not fully decentralised at district level</li> <li>9. Inadequate isolation units in some districts</li> <li>10. Bureaucracy in accessing contingency funds and inadequate funding for emergency preparedness</li> <li>11. Inadequate and ineffective WASH facilities</li> <li>12. Poor road network for hard to reach areas and riverline communities</li> </ol>
Surveillance and Response	
Achievements/Strengths	Challenges/Constraints
<ol style="list-style-type: none"> <li>1. IHR core capacities – NAPHS developed and JEE self-assessment conducted annually</li> <li>2. Increased capacity for lab diagnosis to support surveillance in humans – HR, equipment and reagents at CPHRL</li> <li>3. Lab capacity to confirm results at China CDC Jui</li> </ol>	<ol style="list-style-type: none"> <li>1. No capacity for lab diagnosis to support surveillance in animals</li> <li>2. Data collected at Point of Entry (PoE)s and animal health surveillance not harmonized in the national reporting system</li> <li>3. Not National Influenza Centre (NIC) yet</li> </ol>

<p>lab (surge capacity)</p> <ol style="list-style-type: none"> <li>4. Biosafety level 3 lab available at Jui in case of highly pathogenic avian Influenza</li> <li>5. Influenza Sentinel surveillance sites – currently 4 sites possibility to expand</li> <li>6. Improvement to the robustness of the surveillance system by better data collection, analysis and reporting at national and district level on a weekly basis</li> <li>7. Data being updated to FluNet and FluID</li> <li>8. Existing RRTs at national and district level under One Health platform</li> <li>9. District RRTs include DSO, Lab, Livestock officers/vet, ONS, logistics, clinician, IPC</li> <li>10. Isolation capacity available in some districts</li> <li>11. STAR conducted in 2016 and VRAM ongoing</li> <li>12. One Health work plan and training materials including Influenza</li> </ol>	<ol style="list-style-type: none"> <li>4. Biosafety, IPC, infrastructure and amenities at lab</li> <li>5. Need to expand sentinel sites to improve data being collected for SL</li> <li>6. No isolation capacity in some districts</li> <li>7. Screening tools at HCF not comprehensive to include flu symptoms</li> <li>8. No availability of validated tools for verification and monitoring Pandemic</li> <li>9. Lack of nationwide data on Influenza to identify risks</li> <li>10. Poor control and monitoring of livestock both in-country and across border (porous borders).</li> <li>11. Range of logistics problems including internet connectivity, communication equipment, fuel etc.</li> <li>12. Difficulty in specimen transportation from district to regional/national lab</li> </ol>
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### Communication and Coordination

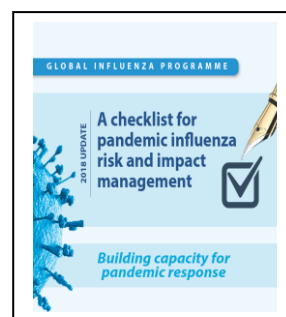
Achievements/Strengths	Challenges/Constraints
<ol style="list-style-type: none"> <li>1. Risk communication is very robust</li> <li>2. Technical expertise in risk communication available in ministry departments and agencies</li> <li>3. Production of Epi Bulletin</li> <li>4. SOPs for community engagement</li> <li>5. An established national EOC and DEOC established in all districts</li> <li>6. Administrative structure in place for Intersectoral collaboration at all levels (national to chiefdoms)</li> <li>7. Availability of technical support from partners</li> <li>8. Involvement of community stakeholders in developing bye-laws</li> <li>9. Regular EPRRG meetings</li> <li>10. Regular cross-border meetings</li> <li>11. Availability of rapid emergency response plan</li> <li>12. Increased awareness at all levels through social mobilization</li> </ol>	<ol style="list-style-type: none"> <li>1. Weak feedback mechanism</li> <li>2. Un-motivated CHWs &amp; CAHWs</li> <li>3. Inadequate human resources</li> <li>4. DEOC not functional due to lack of funding</li> <li>5. Lack of adequate members for the EPRRG Meeting</li> <li>6. Poor communication between MDAs</li> <li>7. Poor utilisation of SOPs</li> <li>8. Inadequate training for MDA staff</li> </ol>

### Health Services and Clinical Management

Achievements/Strengths	Challenges/Constraints
<ol style="list-style-type: none"> <li>1. Availability of infrastructure and plans to increase staff complement</li> <li>2. Presence of CHWs &amp; CAHWS in community</li> <li>3. Established IDSR</li> <li>4. Free health care services for vulnerable groups</li> <li>5. Government recognition and support knowledge capacity to manage Pandemic diseases (lesson learnt from Ebola) compared to the past</li> <li>6. IPC capacity/WASH</li> <li>7. Ambulance are now more available</li> <li>8. Availability of health services at all time</li> <li>9. District logistic officer and pharmacist</li> <li>10. Availability of isolation centres in most facilities</li> <li>11. Improvement in the referral system especially with the existence of national emergency medical services (NEMS)</li> </ol>	<ol style="list-style-type: none"> <li>1. Low health worker density (0.3/1000)</li> <li>2. Large proportion of staff are not on pay roll (i.e. volunteers) leading to instability</li> <li>3. Weak supply chain management system / cold chain</li> <li>4. Limited geographical and financial access to health facilities</li> <li>5. Limited infrastructure and supplies for isolation</li> <li>6. Low IPC compliance due to weak monitoring</li> <li>7. SOPs are not available for Influenza case management</li> <li>8. Lack of maintenance for WASH facilities</li> <li>9. Lack of intensive care facilities for Pandemic</li> <li>10. Limited laboratory services to diagnose cases</li> <li>11. Minimal involvement of private sector</li> <li>12. Functionality of existing isolation centres especially with utilities (light and running water)</li> <li>13. Lack of sustainable electricity at DHMT/Health facilities</li> </ol>

## 3.2 Situation Analysis Summary

Summarizing and reviewing the views expressed from different partners and from different sources has made the information provided more robust. Contributions from local colleagues and team members who have been previously involved in the Ebola response has been useful in bringing additional knowledge and insights to inform the findings. The summary of the key aspects of the analysis are themed and presented in this section.



### 3.2.1 Management: Structures, Coordination and Communication

- **Inter Government Coordination and One Health Approach:** Coordination is evident at both district and national levels. The creation of a new Directorate for Health Security and Emergencies (HSE), which hosts the IHR National Focal Point, has strengthened the national capacities for coordination of health responses. The HSE Directorate now has the capacity and mandate to coordinate IHR implementation, including oversight of the NAPHS and the Regional Disease Surveillance Systems Enhancement (REDISSE) project which were delayed by administrative bottlenecks. Formal coordination mechanisms and service level agreements have resulted in strong partnerships between government sectors and development partners for IHR implementation.
- The recent launch of the new **One Health Strategic Plan** in November 2018 and funding from USAID to support the rollout of this plan will keep the momentum going, together with the revitalising of the One Health Technical Working Group. **One Health Committees** have been established at the national and district levels. Strong coordination has been demonstrated by agreement by ministries on a priority zoonotic disease list. A zoonotic surveillance unit has been created in HSE.
- **Revision of Public Health Ordinance (1960):** a revised Public Health Bill (2019) has been finalized and is anticipated to be enacted by Parliament.
- **Collaboration:** There was evidence of working collaboratively, particularly for human and animal health at both district and national levels, but only in specific pillars e.g. surveillance and laboratory. Collaboration with stakeholders e.g. MDAs, UN Agencies, NGOs and Communities is in place but variable. The EPA nationally feel that they could be more involved and wish to undertake an organisational review to readjust their staff to be able to engage more fully. Also, involvement is very limited for plant health, which is under the environment pillar in the REDISSE project.
- **Risk Communication:** Strong multi-sectoral approach to community engagement, internal and partner communication and including the private sector. Anticipatory messages and operational research done in preparation for public health emergencies in terms of testing the messages. Media monitoring is in place to prevent and tackle misinformation. Weekly bulletins are being shared mainly on surveillance activities. The audience for this is mainly the health sector and could be usefully expanded.
- **Partner and stakeholder coordination:** There appears to be some joined up working at a policy and operational level. However, there is evidence of lack of partner coordination and duplication of funding in some areas. The consortium is in discussion with WHO and other partners working on RRTs to harmonize the work plans and avoid duplication on RRT strengthening as well as for Influenza planning.
- **Sustainable Domestic Financing:** Efforts needed to increase health spending to Abuja Declaration commitment (15%), and budget allocated for IHR implementation, currently 11% is allocated.

### 3.2.2 Strategy, Policies and Guidelines

- **Strategies and Policies:** The main policies and procedures expected are in place for generic responses as outlined in Section 1.8, however the Avian Influenza Plan from 2006 is outdated. As ever, the challenge is to ensure resources are available to implement the plans
- **SOPS/Guidelines:** Guidelines for response exist. These include the health facility set of guidelines and the main operational manual for RRTs. There is an EVD and a Cholera Plan but no specific SOPs for RRTs to use for specific diseases and no simplified SOPs are available for the teams to use in a crisis (handy to use flowcharts). The surveillance unit stated that they need further guidelines on contact-tracing, sample management and specimen handling. There are no SOPs to guide MAF, but they exist for the MOHS.
- **Business Continuity Plans:** there was no evidence to demonstrate that business continuity plans to be used in Pandemic were in place either for health facilities or any other essential services and this demonstrated the need for the business continuity planning to take place.

### 3.2.3 Human Resources

- **Numbers and roles:** Most health personnel appear to be available in the required roles at District and National level, when compared to the core personnel listed in the RRT Operational Manual. However, no surge capacity is available in the event of an outbreak. In the recent measles outbreak in Kambia, national staff had to leave their posts to assist, as additional capacity was no available in the district. However, other sectors are more constrained, especially Agriculture. The EPA have only national and regional presence and rely upon District and City council officers to collaborate with them locally. There are major human resources gaps for animal health at the district and national levels. The Districts Livestock Officers (DLOs) have huge remits, with usually only one person plus a couple of assistants per district, covering all animal health and welfare issues. The existing civil service does not include career categories or pathways for public health personnel including epidemiologists, biostatisticians, laboratory workers and animal health workers; this constrains workforce development.
- **Skills and capacity:** There are some very able and talented people across the One Health Partners, however, it is necessary to build individual and team capacity. Within the RRTs at district and at national level, there was a good level of knowledge and commitment to the principles and operations of IDSR. Many people (national and district) have a good grasp of what their role would be in a response and the general role and constitution of an RRT, the initial steps at the beginning of a potential threat, although they have virtually no documentation to support them in these roles. Key gaps are logistics skills and there are huge gaps in other partners, particularly Agriculture, with very few qualified veterinarians in the country.
- **Team working:** There is an evident lack of potential flexibility across team roles. People may need to undertake several different tasks and be flexible in a crisis. This will be assisted by the planned multi-disciplinary training mentioned above.
- **People training:** There is evidence of quite a lot of training having taken place and staff could describe the positive impact of the training. For example, people are using the materials from the trainings as guidelines. Multi-disciplinary/cross sectoral training and simulation exercises for RRTs is required due to both staff turnover and to expand RRTs to a One Health Approach and these are planned in 2019, together with SOP training.

### 3.2.4 Prevention

- **Infection control: for staff, patients and animals:** A National Infection Prevention and Control Unit (NIPCU) was created in 2015 following the EVD outbreak to ensure patient and health care worker safety and to standardize IPC practices. This included IPC committees in all health care facilities to monitor compliance with patient and healthcare worker safety protocols. It is however unclear how functional these committees are. Screening and isolation units were also established in all health facilities together with the construction of permanent screening and isolation units, although about 60% have not been



completed. However, IPC practices in animal health are very weak, almost non-existent. FAO are working with MAF to address this.

- **Community Prevention and Engagement:** The new CP3 programme managed by the Red Cross and being piloted in 2 districts, has the capacity to strengthen community preparedness (See Section 5). Breakthrough Action are supporting community engagement activities across the country.

### 3.2.5 Preparedness

- **Human and Animal Health IDSR:** Human health is much further ahead in terms of both human and financial resources, policies and procedures compared to animal health, which severely lacks capacity in terms of both numbers and skills (5 vets in the whole country), funding, as well as systems and processes.
- **Surveillance Reporting:** Weekly surveillance meetings held at EOC are attended by One Health and other supporting partners. There is a set number of diseases and activities reported upon (16 human diseases and other issues like animal bites) and this system is underpinned by weekly district reporting and using an electronic data collection system. In addition, there is a weekly bulletin sent to all partners. The IDSR system takes systematic weekly information from districts on the notifiable diseases with reported excellent (>95%) timeliness and completeness of reporting. A new electronic reporting system (eIDSR) has been rolled out in all districts, and now has >85% coverage of all government health facilities. Rapid response teams (RRT) have been able to respond to 95% of verified signals within 48 hours. However, the national Influenza surveillance system is extremely limited with poor reporting of Influenza like illnesses (ILIs), or pneumonia. Influenza laboratory surveillance is limited to the national laboratory system in Freetown. Surveillance systems in animal health are just being developed.
- **An intermediate Field Epidemiology Training Program (FETP)** has been created, complementing the existing frontline FETP program. One Health human resource capacity has been strengthened by participation of animal, environmental, and laboratory staff in the FETP. Country now has access to all levels of FETP (advanced FETP available in Ghana)
- **Community engagement** in cross-border surveillance is yielding results e.g. Kambia measles index case was reported through the system. Community surveillance systems are developing.
- **Laboratories - human health:** The human health laboratory capacity is generally well set up and well supported by international partners. Laboratory testing for viral haemorrhagic fever (VHF) has been established at the national and subnational levels. However, lack of regular electricity and running water at health facilities and laboratories create challenges for IPC/WASH, cold chain functioning, specimen storage and biosafety
- **Laboratories - Animal Health:** Animal health laboratory capacity lags behind human health with a partly built lab in Makeni, although FAO are working with MAF to complete the Laboratory. There are also some facilities at Njala University. An integrated specimen transportation and referral system has not been operationalized, delaying detection and clinical diagnosis for animal health.

### 3.2.6 Response

- **RRT structures:** These are in place both at the national and district level although functionality level varies. Having Emergency officers at the district level (e.g. Kambia) eases coordination during response.
- **Logistics:** There is a huge gap in logistics with the government relying on support from partners, for example in terms of vaccines, reagents, space, and logistics management. There is no funding set aside for emergency kits and out of date kits are not being replaced.
- **Funding for supplies, fuel and equipment:** This represents another huge gap for the RRTs and One Health Approach to function as expected. Access to the available funding e.g. REDISSE Zero Dollar Fund, is available but perceived as difficult to access, which in turn affect the functionality of the team when there is an outbreak.

- **Business continuity plans:** there is little evidence that these are in place for health or other sectors. This is recognised as a big gap by stakeholders and the support provided to develop these plans is welcomed.
- **Community Resilience Planning:** so far this is an area that has not received any attention for Pandemic Influenza.

## Part Two: The Strategic Direction (Where do we want to be in 2024?)

### 4. Effective Pandemic Management

#### 4.1 Risk Management and Severity Assessment

##### 4.1.1 National Risk Assessment

National risk assessment aims to determine the likelihood and consequences of events that impact on public health at national, subnational and local levels. It provides the basis for taking action to manage and reduce the negative consequences of risks to public health, evidence-based information for decision-making to manage and reduce the public health impact and facilitates the communication of risks and uncertainties to the public.

At global level, for every Influenza virus with Pandemic potential, WHO will conduct global risk assessments to inform decision-making for risk management. While WHO will communicate these global assessments and the uncertainties that surrounds them throughout the event, each Member State is strongly advised to assess in advance national risk related to Pandemic Influenza in the context of their local experience, resources and vulnerabilities. In addition, during a Pandemic, Member States are encouraged to conduct their own risk assessments, which will determine the timing, scale, emphasis, intensity and urgency of the actions required at their national and local levels.

**The Situation Analysis undertaken (Section 3.1) provides a ‘state in time’** in terms of assessing risk and has enabled this plan to be developed. However, risk assessment is a continuous process throughout the risk management continuum.

A risk assessment considers hazard, exposure and context coupled with risk characterization. **A hazard assessment** relevant to Pandemic Influenza includes: identifying Influenza viruses of concern; reviewing key virological and clinical information about each Influenza virus; and ranking them by Pandemic potential and possible consequences. **An exposure assessment** seeks to define the groups of individuals known to have been, or likely to be, exposed to an Influenza virus of concern and to delineate the susceptibility of these groups in terms of immunity and disease severity. **A context assessment** (situation analysis) is an evaluation of the environment in which the event takes place. It examines factors that affect risk, including: social, technological and scientific, economic, ethical, and policy and political factors.

##### 4.1.2 Assessment of Pandemic Severity

Gauging the severity of an Influenza Pandemic is an important consideration in planning for and responding to a Pandemic. Early information about severity can help support decision-making at global and country levels. As a Pandemic spreads, early assessments in countries first affected by human infection with a new Influenza subtype will inform the global community. However, each country’s context and Pandemic Influenza-related severity will differ, requiring careful evaluation not only of the data reported but the capacities, demographics and other features of the country in which the observations are made. In addition, continual severity assessments will be necessary over the course of a Pandemic since the accuracy and precision of severity-related information will change.

To be useful, the severity assessments should be done when public health decisions are needed. To that end, a risk assessment, incorporating severity, should provide as much information as possible to answer the following key questions about an emerging Pandemic:

- How rapidly are new cases accruing?
- What types of illnesses and complications are being seen?
- How many people will become ill?
- What groups of people (e.g. age groups or groups at risk of severe outcomes) will become severely ill?
- Is the virus sensitive to antiviral agents?
- What will be the impact on the health care sector, including such factors as health care utilization and impact on the health care work force?
- What will be the impact on other sectors, including assuring continuity of public and private services?

Operationally, these questions will help guide decisions regarding vaccine production and strategy for usage, antiviral use, mobilization of health care resources, school closures and other social distancing strategies. The data that answer each of these key questions will be considered in the context of three indicators:

**Transmissibility:** Reflects the ease of movement of the virus between individuals, communities and countries. The factors that will go into describing transmissibility include both virological factors and epidemiological observations.

**Seriousness of disease:** A Pandemic virus that has a high level of clinical severity can result in a disproportionate number of persons with serious or grave illness, some of whom will die in the absence of effective treatment or adequate clinical management. However, the severity or virulence of a virus will also depend on the presence of underlying medical conditions that predispose individuals to severe illness, as well as age. An infection is likely to be much more severe for some segments of a population than others and descriptions of the groups at risk will be part of this indicator.

**Impact:** If the health care sector and other critical essential services are impacted at a high level, they may not be able to accommodate the stress on their resources. The impact on the health sector will also be influenced by public concern and health care policies put in place in response to the event. As such, assessing impact will aid in understanding how these issues interact with inherent characteristics of the virus and the way it behaves.

**The severity assessments** must be flexible in order to accommodate unforeseen characteristics of the Pandemic as it evolves (e.g. a new indicator could be included or a known one excluded). Severity varies within a population owing to a variety of risk factors. Population risk factors in terms of community resilience have not been carefully studied. However, general health status, availability of resources, including health care services and medications, and cultural dynamics that affect transmission and care-seeking are likely to be relevant and will complicate comparisons between populations.

## 4.2 Planning Assumptions for a Pandemic

In order to plan effectively, we need to make certain assumptions based on effective risk assessment and utilising the knowledge we have from the previous Pandemics. Key Planning Assumptions based on these attack/severity rates have been developed locally, in line with the above assessment criteria as well comparing the planning assumptions with those from other developing countries (e.g., Nigeria):

1. **Unpredictable when and where:** The time and place of origin of the next Influenza Pandemic are

unknown. An Influenza Pandemic can begin at any time of the year and in any place in the world, but it is less likely that the Pandemic will originate from the African continent.

2. **Global Spread:** When a Pandemic Influenza virus emerges, its global spread is considered inevitable. The WHO Global Influenza Surveillance and Response System (GISRS) should ensure the early detection and warning to all member states, allowing time for Pandemic preparedness measures to be activated.
3. **Immunity:** Most people will have little or no immunity to a new Pandemic virus. Susceptibility will be universal among all population groups, affecting simultaneously multiple communities and populations groups.
4. **Modes of transmission:** Modes of virus transmission of Pandemic Influenza are expected to be similar to those of seasonal Influenza: via the large droplet (sneezing) or contact (either direct or indirect) route. The indirect route would seem less efficient. In a recent study<sup>38</sup>, no viable Influenza viruses were found on most surfaces after nine hours.
5. **Incubation:** The typical incubation period (interval between infection and onset of symptoms) for Influenza is approximately 1-3 days. Duration of infectiousness: about 5 days in adults and possibly longer in children.
6. **Viral shedding and the risk of transmission:** This occurs also during the incubation period and in asymptomatic cases. However, it will be greatest during the first 2 days of illness. Children usually shed the greatest amount of virus and therefore are likely to pose the greatest risk for transmission to others.
7. **Pandemic structure:** Multiple global Pandemic waves will likely occur, with each wave lasting from several weeks to a few months but with variations from country to country. In an affected community, multiple Pandemic outbreaks could occur, lasting about 6 to 8 weeks.
8. **Clinical Attack Rates for Sierra Leone:** The reported clinical Influenza attack rates in Pandemics of the last century are mainly between 25% and 35% but milder cases might not have been reported. The table below illustrates the estimated number of symptomatic cases expected in Sierra Leone during a Pandemic, based on either a 15% or 35% attack rate. Outcome estimates range from best case scenarios (e.g. Pandemics of 1957-58, 1967-68 and 2009-10) and worst-case scenario (Spanish Flu Pandemic of 1918).

Estimated Number of Pandemic Influenza Symptomatic Cases Sierra Leone - Population 7,848,641 (2019)		
Outcome	15% Attack Rate	35% Attack Rate
Symptomatic cases	1,177,296	2,746,903
Deaths (range from 0.25% <sup>1</sup> to 2.5% <sup>2</sup> )	2,943 - 29,432	6,867 - 68,672
Hospitalizations (range from 1% <sup>1</sup> to 10% <sup>2</sup> )	11,773 - 117,729	27,469 - 274,690
Intensive Care (ICU) (15% of Hospitalized)	1,765 - 17,659	4,120 - 41,203

1 = Best case scenario    2 = Worst-case scenario

9. **Increased hospitalizations, excess mortality and secondary complications:** These are expected to vary widely in different communities. The number of hospitalizations and deaths will depend on the virulence of the Pandemic virus. Death rates could be high, largely determined by four factors: the number of people who become infected, the virulence of the virus, the underlying characteristics and vulnerability of affected populations and the effectiveness of preventive measures.
10. **Risk groups:** For severe and fatal infection, risk groups will include infants, malnourished children, the elderly, pregnant women, and persons with compromised immune systems and/or chronic medical

<sup>38</sup> [Survival of Influenza A\(H1N1\) on Materials Found in Households: Implications for Infection Control](#)

conditions. In some Pandemics, young people were also at higher risk. Health care workers are also a high risk both from contracting Influenza from patients and also passing on the infection to other patients.

11. **Health Facilities:** Decisions would need to be made on the designation of health care facilities/wards for specific treatment and care for “severe” Influenza cases and to continue to treat the general population for non-flu like illnesses and for maternity care. There may also be a need for additional diagnostic and treatment facilities to be set up at short notice (surge capacity).
12. **Hospital impact:** A substantial percentage of the country population will require some form of medical care. Illness rates will be highest among school-aged children (about 40%) and decline with age. Among working adults, an average of 25% could become ill during a community outbreak.
13. **Care of patients:** Of those who become ill with a Pandemic Influenza virus, 50-60% will seek outpatient medical care, but due to the enormous demand for health resources, most infected persons will be treated at home. This will require families to provide in- home care for ill family members.
14. **Medical guidance:** Written guidance is needed to support the treatment and care at all health facilities plus support and guidance to families caring for their loved ones at home.
15. **Demand for Medicine and Supplies:** The national needs for Influenza vaccines, antiviral drugs, hospital beds, ventilators and other supplies is likely to outstrip supply. There will be a need to prioritise medicines and supplies to be fast tracked through the ports.
16. **Stock control:** There might be a system of buffer stock and supply in place at national, regional and district level as part of the preparedness planning but demand is likely to outstrip country buffer stocks.
17. **Prioritisation for vaccines and anti-viral drugs:** Difficult decisions will need to be made regarding who gets antiviral drugs and, eventually, vaccines. Once a Pandemic Influenza virus is identified and isolated, it will take at least six months to produce and distribute sufficient quantities of vaccine to effectively impact the Pandemic. Limited quantities of vaccines and antiviral drugs will be distributed across countries by the WHO and should be provided to priority groups based on WHO recommendations.
18. **Local Prioritisation:** Access to both anti-viral medications and Pandemic Influenza vaccine will be very limited in Sierra Leone. Populations groups providing essential services and prioritized for vaccination should be identified in advance, for example front line health workers, providers of water and power, police force and security personnel, etc.
19. **Isolation and Quarantine measures:** This approach can reduce transmission but not stop it since persons infected with the flu virus can “shed” the virus and transmit infection before the onset of symptoms. Asymptomatic or minimally symptomatic individuals can also transmit infection and develop immunity. Previously used models of care using ‘isolation units’ will not work as intended and are likely to be costly and ineffective as part of a response plan.
20. **Simple personal protective measures:** Measures such as regular handwashing, good respiratory hygiene and early self-isolation when developing a febrile illness are relatively straightforward to implement and are already recommended for even mild seasonal Influenza. These also have the advantage of empowering individuals and giving them useful advice at a difficult and worrying time.
21. **Shortage of supply:** During a severe “Pandemic wave”, local availability of food, health, fuel, and other “everyday” items could be limited by hoarding and Pandemic-related impacts on distribution and transportation systems.
22. **Potential for social unrest:** Lack of access to anti-viral medications and vaccines and perceptions about inequitable distribution is a potential cause of public concern, and even social unrest.
23. **Absenteeism:** Workplace absenteeism will depend on the attack rate and the severity of the Pandemic but may reach 40% during the peak weeks of an outbreak. Absenteeism may be due to illness, the need to care for ill family members, fear of infection and imposed public health measures (closing of schools, home working, reduction in meetings and mass gatherings.) Changes in business workplace rules, such as staff rotation or increased telecommuting, could reduce the spread of infection but may have

significant costs and be difficult to implement.

24. **International travel restrictions:** Border closures, entry restrictions, and the need to comply with certain travel advice could be enforced and might buy time in delaying the introduction of the virus but cannot stop the spread once virus has entered the country. These measures can also have an adverse effect by causing significant costs, disrupting trade and the movement of essential supplies and workers.
25. **Air travel:** Commercial air transportation will anyway be limited by flight cancellations due to airline crew availability, Pandemic-related infrastructure limitations and fiscal challenges. Flights to some countries may be completely unavailable.

## 4.3 Effective Systems and Capacity to Prevent, Prepare, Respond & Recover

**A reminder of the Vision:** The Republic of Sierra Leone and partners emerge from an Influenza Pandemic with minimal disease burden and socio-economic impacts to the local population and public and private critical services. All key stakeholders are capable of immediately resuming all aspects of pre-Pandemic operations and services and learning from the response strengthens and improves services for the longer term, making them more fit for purpose.

**Therefore, to deliver this vision, clarity is needed** in order to know what success looks like when able to effectively respond to a Pandemic. Therefore to provide this clarity, the following elements of a whole country response need to be in place for Sierra Leone to effectively respond:

### Prevent

- **Preventing Illness** in the Community (vaccination and non-pharmaceutical, community interventions)
- **One Health approach** to surveillance, particularly reducing the likelihood of animal to human transmission
- **Communication** and coordination mechanisms with **neighbouring countries** and with **all the relevant international agencies**
- Effective **Population and risk communications** and education systems

### Prepare

- Adequate **surveillance systems** and **laboratory capacity** for types of Influenza (testing and verification) including emergence of disease, risk and severity assessment in place
- Develop, maintain and **test plans** and procedures (case definitions, IPC etc.)
- **Effective leadership, coordination and communication mechanisms** in place with clear command and control systems
- **Available resources** that can be rapidly deployed for response;
- Clear and effective **legal, policy and ethical frameworks**
- **Border management systems** and travel restrictions systems in place and tested
- **Media management** is in place
- **Business Continuity Plans** are in place across sectors, ensuring the best whole society approach possible in the event of a Pandemic

### Respond

- **Health facilities fit for purpose** and adequate numbers of personnel trained, with the ability to surge capacity
- **HR and other surge capacity** for treatment of simple cases and triage/referral of severe cases.
- **Rapid response teams in place** at national and district level and able to surge capacity to manage the outbreak
- **Essential medicines, medical and non-medical supplies** stocked for initial response and systems in place for quick procurement

- **Excess mortality** management
- **Treatment and patient management protocols**, including IPC in place and staff trained and patient prioritisation
- Management of **vaccination and antiviral use** (when available)
- **Public health measures to delay the circulation of the virus**
- **Effective risk communication**
- **Continuous risk assessment** (national and local)
- **Business continuity planning** place for all essential sectors, including health and tested with live simulations
- **Community resilience plans** developed and operational

#### Recovery

- **Recovery** plans
- **Evaluation** and lessons learned
- **Testing and revising** plans
- **R&D** to improve services
- **Building back better**, via a Health Systems Strengthening Approach

The table below illustrates **Operational Pandemic Phases** with the triggers from moving between phases and the activities associated with each phase. This is taken directly from the latest WHO PISP guidance. Note that this is not an exact science and there will be repetition and overlap between phases.

Operational Pandemic Phases		
Prevention		
Preparedness		
Response	Standby	
	Action	Initial
		Targeted
	Stand-down	
Recovery		

The WHO Operational Framework for Pandemic Influenza Preparedness, Response and Recovery is attached as **Annex Six**.



Operational Pandemic Phases		Triggers for moving from one to another		Activities
Prevention				<ul style="list-style-type: none"> <li>Engage with animal sector on surveillance</li> <li>Communication with neighbouring countries</li> </ul>
Preparedness				<ul style="list-style-type: none"> <li>Develop, maintain and <b>test plans</b>;</li> <li><b>ensure resources are available</b> and can be rapidly deployed for response;</li> <li><b>continued surveillance for monitoring and investigating the emergence</b> of diseases with pandemic potential.</li> </ul>
Response	Standby*		<ul style="list-style-type: none"> <li>advice received from WHO of an outbreak outside national borders of sustained community transmission of a novel virus; or</li> <li>a warning of a potential influenza pandemic received from WHO; or</li> <li>alerts/IDSR reports received from a jurisdiction seeking assistance to manage severe seasonal influenza; or</li> <li>an indication from a national surveillance body of a trend in seasonal influenza which may overwhelm health systems.</li> </ul>	<ul style="list-style-type: none"> <li><b>preparation to move to the action stage</b>;</li> <li><b>identifying</b> and characterising the nature of the disease (if country capacity is available) and <b>performing risk assessment</b>;</li> <li>communications to <b>raise awareness</b> and <b>confirm governance</b> arrangements; and</li> <li><b>points of entry</b> activities.</li> </ul>
	Action	Initial	<ul style="list-style-type: none"> <li>advice that the first case has been detected in SIERRA LEONE; or</li> <li>advice that there is sustained community transmission of a novel influenza virus which has emerged in SIERRA LEONE; or</li> <li>a declaration by WHO of an influenza pandemic; or</li> <li>a request for assistance with seasonal influenza from a sub-national level.</li> </ul>	<ul style="list-style-type: none"> <li><b>preparing and supporting health system needs</b>;</li> <li><b>managing initial cases</b>;</li> <li><b>identifying</b> and characterising the nature of the disease within the SIERRA LEONE context;</li> <li>providing <b>information to support best practice health care</b> and to <b>empower the community and responders</b> to manage their own risk of exposure; and</li> <li>supporting effective <b>governance</b>.</li> </ul>
		Targeted	<p>This targeted action stage will commence when the information collected in previous stages such as clinical severity, transmissibility, epidemiology and antiviral resistance pattern of the virus are used to refine and focus pandemic response actions/measures. Measures should be regularly reviewed as risks assessments provide information on the evolution of the pandemic.</p> <p>Targeted measures will focus on:</p>	<p><b>Targeted Activities</b></p> <ul style="list-style-type: none"> <li>supporting and maintaining clinical management of cases and <b>quality care</b>;</li> <li>communications to inform communities; and</li> <li>providing a <b>coordinated, consistent and appropriate response</b>.</li> </ul>

			<ul style="list-style-type: none"> <li>• A flexible approach so that measures can be implemented in different geographical regions as needed based on risk assessment findings. Tailoring of response measures should be considered so that resources are efficiently utilized.</li> <li>• During this phase collection of core data from surveillance systems should inform response measures to be implemented.</li> <li>• Communications measures should continue to be timely and consistent to reflect information about the pandemic itself and the response measures implemented.</li> </ul>	
	Stand-down		<p>The purpose of the Stand-down stage is to manage the withdrawal of enhanced arrangements and transition to seasonal influenza systems and procedures.</p> <p>During this stage Individual activities/actions will be regularly assessed to determine if they are still required and stood down when they are no longer necessary for response.</p> <p>The <b>trigger</b> to move into the Stand-down stage is advice provided by the WHO that the pandemic has reached a level where it can be managed under seasonal influenza arrangements. Since risk and impact will not be homogenous when considering the national picture some activities may continue in specific geographical areas to support vulnerable populations.</p> <p>During this stage it is important to communicate that stakeholders will still have access to the support they need.</p>	<p><b>Stand-down activities</b></p> <ul style="list-style-type: none"> <li>• continuing to support <b>clinical management</b> of cases and <b>quality care</b>;</li> <li>• <b>discontinuing</b> activities if they are no longer required, based on the situation in the country as a whole or in different geographical regions; and</li> <li>• <b>transitioning</b> activities to seasonal arrangements;</li> <li>• maintaining surveillance activities to identify any further waves of the outbreak;</li> <li>• communications activities to outline the <b>return to normal</b> or seasonal activities; and</li> <li>• <b>evaluating</b> responses and <b>revising</b> plans and procedures.</li> </ul>
Recovery			<p>Robust recovery responses are required with a “Build Back Better” in mind.</p> <p>Recovery may differ throughout the country depending on the impact of the pandemic in different geographical regions and communities.</p>	

## 5. Critical Success Factors

**Development of the Critical Success Factors:** The success factors below are statements presented in the present tense, to hold true in 5 years' time and they are intended to be very specific and measurable, address the constraints that have been identified and contribute to delivering the vision. If these factors are met in the next 5 years, then Sierra Leone would significantly improve its preparedness for a Pandemic and also be better able to operate in a Pandemic situation. The success factors are intended to be a pragmatic mix of aspirational and realistic aims.

**Generating and theming the factors:** In order to develop the success factors, workshop participants were asked directly to state what **they would consider success to look like in the next five years**. The participants reviewed the 'Where are we now?' information collected through the various workshop exercises and presentations and also considered both the Pandemic phases and the functional areas of Pandemic preparedness and response. A total of 42 success factors were generated. Participants then voted on the factors using a maximum of 14 votes each. The numbers of votes are in the right-hand column below. The success factors were then themed, summarised and duplicates merged to produce a **final 29 success factors** as presented below in the themed areas below:

Theme 1. Human Resources	63/390
<p>1. <b>Adequate numbers and skills</b> in Human Resources available to respond to a Pandemic and enable the system to surge capacity at different times in different parts of the country, depending on the speed of spread:</p> <ul style="list-style-type: none"> <li>▪ At National and district level (including: Veterinary training up to master level. Lab scientist, up to BSc and MSc levels, PhD scientist, Virologist - Environmental science specialists &amp; ecologist, Logistician, Epidemiologist, Vaccinologist, Surveillance officers, IT technician, Risk communication specialists)</li> <li>▪ At Facility level (including: clinicians, Intensive Care Nurses, Clinicians and Bioengineers). Adequate numbers are measured in terms of compliance with the BPEHS.</li> <li>▪ Specific workforce planning is required to determine health workforce surge capacity levels for Pandemic Influenza</li> <li>▪ Localise some training programme for key staff (Lab scientist, Biochemist, Veterinary Officers, Parasitology, Entomologist, Biostatisticians, Environmental Scientist, Bioengineer, Vaccinologist, Quality Assurance Officer, ICT and medical Equipment Maintenance Officers, Architects,</li> <li>▪ Recruit lecturers from diaspora, south-south, VSO and international community and provide basic amenities to motivate them</li> <li>▪ Utilisation of required CHWs, and train CAHWs to support and consider other staff to train (see list from the Ebola response) in addition to current frontline health workers</li> </ul>	42
<p>2. <b>Trained RRTs:</b> Rapid Response Teams (RRTs) in every district are adequately trained using QI Approach and updated SOPs and using live simulations tests to update their skills, on a regular basis (at least annually)</p>	10
<p>3. <b>Stable workforce:</b> to ensure that the health system can respond to a Pandemic, with absorption of newly trained staff, career progression of staff in place, adequate terms and conditions to retain committed, motivated staff and reduce reliance on volunteers. Other sectors need to have similar arrangements in place.</p>	8
<p>3. <b>Induction package</b> in place for all new health workers on Pandemic Influenza and annual refresher training undertaken on potential outbreak threats</p>	3
Theme 2. Logistics and Supply	55/390
<p>5. <b>Supply chain:</b> Robust supply chain system that ensures availability of health commodities and equipment at national and district levels, with room for expansion of facilities for transportation and warehousing during outbreak response.</p>	38

6. <b>Cold Chain:</b> Adequate system of cold chain for handling vaccines at national and district levels during outbreak response	13
7. <b>Procurement and shipment of commodities:</b> During the alert phase of the Pandemic, timely utilization of the list of commodities required for stockpiling for early requisition/procurement/importation of health commodities and equipment	4

<b>Theme 3. Surveillance and Laboratory Capacity</b>	<b>100/390</b>
8. <b>Effective Sentinel Sites across the country:</b> Influenza sentinel sites established in all regions/district (sites agreed as appropriate), generating regular data and sharing nationally and with the international systems as required and with adequate, trained, resourced staff (including lab staff). The sentinel site will be able to provide at least monthly health education/risk communication to the stakeholders, patient and the general public on PISP and its public health importance.	59
9. <b>Specimen Transportation:</b> Effective and safe means of specimen transportation according to the IDSR specified guideline per disease condition	16
10 <b>Timely Lab reporting:</b> Feedback from reference laboratory to the surveillance and surveillance sent to referring districts on outcome of sample sent to the lab within 7 days (turnaround time)	11
11. <b>Comprehensive, integrated surveillance data coverage:</b> 80 % reporting of quality data from both public, faith based and private health facilities by 2024 and linking into animal health surveillance and community-based surveillance	8
12. <b>Functioning human and animal lab systems:</b> for testing Influenza regionally, appropriate and specific equipment for labs (human and animal) – based on the national laboratory protocols	5
13. <b>Increased international collaboration</b> with the involvement of national laboratories in the regional and global Influenza networks including the Global Influenza Surveillance & Response System (GISR) and establishment of a National Influenza Centre (NIC)	Added later

<b>Theme 4. Coordination and Communication (and Leadership)</b>	<b>37/390</b>
14. <b>Improved coordination</b> at districts and national level through existing structures at district (DEOC) and national (PHENEOC) levels.	18
15. <b>Coordination with international level</b> (IHR framework) with the strengthening of national IHR core capacities for the early detection and effective response to potential public health emergencies of international concern.	Added later
16. <b>One health platform</b> is decentralised and working at all the district in the country with every team comprising of the following: ONS, EPA, MAF, MOHS and other partners as deemed appropriate	11
17. <b>Monitoring progress:</b> Periodic (6 monthly) score card to monitor and evaluate the SL PISP plan is in place and JEE process also used to track success	8
18. <b>Risk communication and community awareness</b> to enable people at risk to take informed decisions to protect themselves and their loved ones by building trust, raise awareness, educate, reach agreement, and motivate individual action in response to health threats.	Added later

<b>Theme 5. Clinical Management and IPC</b>	<b>55/390</b>
19. <b>Severe case treatment capacity:</b> Contingency plans for the availability of adequate, functional and equipped additional structures or re-designated health facilities with triage, sufficient running water, electricity, beddings and functioning toilets, and emergency supplies etc.( as per WHO standard and with trained staff) This would include temporary accommodation.	24
20. <b>IPC:</b> A 100% functional IPC at all health facilities in the country by 2023 with quarterly/monthly monitoring activities on IPC in all health facilities using SIL/WHO checklist (National & District)	18
21. <b>Pandemic Influenza case management protocols/SOPs:</b> Competency based (multi-disciplinary) training and provision of clinical guidance and tools for all staff to treat Pandemic Influenza at all levels of health facilities and across One Health and other Partners as required.	13

<b>Theme 6. Border Management</b>	<b>36/390</b>
22. <b>More POEs in operation:</b> Construct and equip 6 additional functional POEs (2 Kailahun, 1 Pujehun, 1, Kenema, 2, Kono) to enhance cross border surveillance	36
23. <b>Existing PoEs</b> are strengthened to ensure they have adequate, tested systems in place to cope with an Influenza Pandemic	Added later









<b>Theme 7. Prevention</b>	<b>18/390</b>
24. <b>Effective community education and engagement:</b> Increased community awareness on early health care seeking behaviour through community sensitisation (using IEC, fact sheet, Develop and publicised IEC materials, jingles on Influenza Pandemic preparedness and response)	16
25. <b>Biosecurity:</b> Proper and adequate storage systems (established biobank and satellite biobank systems to hold 5000 samples)	2
26. Promotion of <b>simple individual preventive measures</b> (e.g. self-isolation, hand-washing, avoid handshake, avoid crowded places) in the general population.	Added later
27. <b>Prevention of animal to human transmission</b> by minimizing contact between susceptible and infected animals, increase compliance with hygiene measures and the use of PPE, keep the animal housing environment as clean and dry as possible.	Added later

<b>Theme 8. Business Continuity</b>	<b>26/390</b>
28. <b>Adequate infrastructure and finances in place</b> to enable the health system to carry on functioning in a Pandemic situation, for example, ambulances and transport availability, power and water, additional emergency buildings/infrastructure, emergency finances, annual budget for Pandemic Influenza activities	26
29. <b>Multi-sectoral business continuity plans</b> are developed and in place and continually reviewed so that all essential business and services across government and private sector are prepared	Added later

# Part Three: Making Strategy into a Reality (How do we get there in the next five years?)

## 6. The Eight Strategic Priorities

From the 29 success factors (Section 5) prioritized utilising the participant votes as described above, plus detailed discussion and debate, **eight strategic priorities emerged**. For each strategic priority, a **priority statement** was developed to describe what is to be achieved, and these descriptions were made as 'SMART' as possible. Finally, **high level activities** were assigned across the five years of the plan to clarify how the Strategic Plan will be delivered. The summary of the eight strategic priority areas is provided below and the detailed high-level five-year plans for each area are also attached as **Annex Seven**. Finally, the Executive summary outlines all priorities and key objectives for sharing externally.

SIERRA LEONE - SUMMARY STRATEGIC PRIORITY AREAS (OCT 2019 - SEPT 2024)	
	<p><b>Strategic Priority No.1: HUMAN RESOURCES:</b> By 2024, there is a <b>sufficient and competent integrated workforce</b> to detect and manage Influenza cases at <b>all levels, involving all One Health partners through training and continuous professional development</b>, including routine <b>supportive supervision and mentorship</b>, to ensure effective service delivery. Linked to Success Factors: 1 to 4</p>
<p><b>Strategic Priority No.2: LOGISTICS &amp; SUPPLY</b> By 2024, there is a <b>specified adequate supply chain and logistics system</b> (described in an SOP) that will ensure <b>commodities and equipment for response are sufficient and available</b> at national, district and local levels, without disruption. Linked to Success Factors: 5 to 7</p>	
	<p><b>Strategic Priority No.3: SURVEILLANCE &amp; LABORATORY SYSTEM:</b> By the end of 2024, there is an <b>integrated, robust surveillance and laboratory system</b> in order to promptly respond to Influenza Pandemics. Linked to Success Factors: 8 to 13</p>
<p><b>Strategic Priority No.4: COORDINATION &amp; COMMUNICATION:</b> By 2024, an <b>effective communication mechanism</b> is in place at national, districts and community levels <b>linking with One Health and</b> other partners, enabling effective risk communication, health education and community sensitization which engages the public to prevent and control outbreaks. Also a <b>coordination mechanism</b> is in place to avoid duplication of effort, mobilize resources, identify weaknesses and strengths and that is capable of instigating improvements. Linked to Success Factors 14 to 18</p>	
	<p><b>Strategic Priority No.5: CLINICAL MANAGEMENT &amp; IPC :</b> By 2024, patients with Pandemic Influenza disease condition can be <b>treated in most appropriate, timely, and safe manner</b> in the right place (at home or hospital) by having appropriate drugs and treatment guidelines, by competent trained and qualified health personnel. Linked to Success Factors: 19 to 21</p>
<p><b>Strategic Priority No.6: BORDER MANAGEMENT (POEs):</b> By 2024, Sierra Leone has a <b>well-structured border management system</b> in place that is capable of <b>screening, detecting, preventing and protecting</b> its citizens from an Influenza Pandemic in line with <b>IHR standards</b>. Linked to Success Factor: 22 to 23</p>	
	<p><b>Strategic Priority No.7: PREVENTION:</b> By 2024, <b>90%</b> of the national population are <b>aware of and can practice recommended preventive behaviours</b>. There is <b>sufficient capacity to mount effective immunization campaigns</b>. There are <b>effective One Health structures in Districts</b> to prevent disease transmission from animal to human population. Linked to Success Factor: 24 to 27</p>
<p><b>Strategic Priority No.8: BUSINESS CONTINUITY:</b> By 2024, Sierra Leone has well-structured Business Continuity plans in place both in the health system and across government and key business sectors for the management and maintenance of essential services and activities, together with the ability to develop to build community resilience, should an Influenza Pandemic occur. Linked to Success Factors: 28 and 29</p>	

## 7. Effective Whole Country Coordination

In order to respond effectively to a Pandemic Situation, there needs to be coordination and support across many sectors of government, the charitable and private sectors and with national and international organisations. This section covers:

- Key partner and stakeholder mapping of those involved in a range of preparedness activities
- Key partners directly associated with the outbreak response
- Partners who would need to be involved in business continuity planning to maintain essential services during a Pandemic.

### 7.1 Partner and Key Stakeholder Mapping (Preparedness and Response)

The partner landscape in support of strengthening Pandemic preparedness and response is complex. Some partners play a strategic role in supporting planning and coordination, others provide practical and logistic support, and some do both. **At national level** the picture is of mainly international organisations together with government playing key roles to support preparedness and strengthen systems and up-skill staff for response. Some NGOs are currently doing proactive work with communities, developing community engagement techniques and risk communication methodologies. **At district level** there are several NGOs and other organisations that have provided support during an outbreak but not in planning and preparedness. For example, the recent Measles outbreak in Kambia (2018/2019) was supported by a number of NGOs and international organisations.

#### The Key Government Players are:

Player	Role
Office of the President	High level leadership and political commitment needed in ensuring that ministries and state agencies meet their obligations in the PISP
Parliament	Support aspects of the PISP related to domestic resource allocation and legislation
Ministry of Health & Sanitation	Overall stewardship and management of the implementation, monitoring and evaluation of the PISP plan.
Ministry of Agriculture and Forestry	-MAF will co-chair with the MoHS the PISP initiatives that are synergistic with One Health platform themes. -MAF will exercise stewardship and management of implementation of the animal health centred objectives in the PISP. -MAF shall mobilize resources for implementation, monitoring and evaluation of any animal health component of the PISP. -MAF will take responsibility for investments in human resources, infrastructure, equipment, etc. necessary for attainment of animal health centred objectives in the PISP.
Ministry of Finance	-MoF will be responsible for the mobilization of in-country resources for implementation of the PISP including auditing and monitoring the efficiency and utilization of resources raised for PISP implementation
Ministry of Social Welfare, Gender and Children's Affairs	-Will partner with health sector in community disaster risk and vulnerability assessments. -Safeguarding the welfare of frontline health workers and surge staff during response to large scale health emergencies, including

	compensation for loss, injury, disability or death
Office of National Security (ONS)	-Coordination of various ministries, departments and agencies during planning and response to a Pandemic Influenza outbreak.
Pharmacy Regulatory Board	-Quality control of the donations and imports of medical commodities that are received during emergency response operations -Facilitating the prompt licensure of Influenza vaccine that may be needed during response.
Environment Protection Agency (EPA)	-Control of pollution and chemicals management during the implementation of PISP.

The partner organisations have been mapped into 4 areas and prioritised and details mapped in the table below. Additional key partner details are provided in **Annex Three**:

1. Government: ministries – an expanded version of the list above
2. Local and international NGOs
3. UN agencies and Donors
4. Private sector/companies

Government: ministries	Local and international NGOs	UN agencies and Donors	Private sector/companies
MOHS MAF Standard Bureau EPA, ONS, NPPA (all fall under office of the president) MOF MOE - ESSA, - EGTC MWR - SALWACO - GUMA Transport Ministry - SLRSA - SLRA - SLRMF Information & Communication - NATCOM - IMC MOD - Military Local Government	Save the Children International Red Cross Care International Helen Keller E Health Africa CUAMM MSF IMC Concern IRC PIH GOAL AFENET WHH World Vision Caritas Don Bosco CHASL Civil Society HELP SL Aberdeen Women Centre CCSL (council of churches) SLRCS Plan International Focus 1000 ICAP ACF Breakthrough Action	WHO UNICEF UNDP FAO - ECTAD Team (animal disease) Irish Aid Japanese Aid World Bank China Aid USAID DFID CDC – USA CDC – China CDC-Africa GIZ ADB	Telecommunication companies Betting Company Water production company Mining companies Agricultural companies Lebanese community (and other national committees e.g. Nigerian) Religious communities Insurance companies



## 7.2 Essential Services and Economic Sector Mapping (Business Continuity)

In order to effectively structure planning and development, we have grouped and mapped sectors for the purposes of supporting business continuity planning. The sectors have been mapped into three key areas as seen in the box below. More detail on each of the 3 areas, broken down into organisations, is provided in **Annex Five**.

<b>One health Platform:</b>	<b>National Security:</b>	<b>Economic:</b>
<ul style="list-style-type: none"><li>▪ Ministry of Health and Sanitation</li><li>▪ Animal Health</li><li>▪ Food security</li><li>▪ Water management</li><li>▪ Agriculture</li><li>▪ Environmental security</li><li>▪ Waste Management</li></ul>	<ul style="list-style-type: none"><li>▪ Civilian activities</li><li>▪ Legal activities</li><li>▪ Military activities</li><li>▪ National security</li><li>▪ Boarder control</li></ul>	<ul style="list-style-type: none"><li>▪ Energy</li><li>▪ Finance/ Banking</li><li>▪ Transport</li><li>▪ Communication</li><li>▪ Media</li></ul>

## 8. Governance and Performance Management

### 8.1 Governance, Oversight and Ensuring Progress

The One Health Technical Working Group, under the leadership of the Director of Health Security and Emergencies, will assume overall responsibility and will be ultimately accountable for the delivery of this plan. In addition, each of the 8 strategic priorities should have a leader (or Champion) to ensure that there is ownership and accountability for delivery. The Champion does not have to undertake all the actions under their priority area, but rather it is his/her role is to oversee and manage the activities required and to be held accountable by the One Health TWG for delivery. The suggested leads are in the box below and supporters should also be nominated to work on each key area:

Group	Area	Designation responsible
1	Human Resources	Director of Human Resources MoHS
2	Logistics and Supply	Director of Logistics and Supply MoHS
3	Surveillance and Laboratory System	Head of Surveillance DHSE
4	Coordination and Communication	Head of Communications DHSE
5	Clinical management & IPC	Head of IPC DHSE
6	Border Management (PoEs)	Head of POI CHSE
7	Prevention	Deputy Chief medical Officer (Public Health)
8	Business Continuity	Nominated lead from ONS

### 8.2 Risk Communication and Community Engagement

Effective strategies for health risk communication are essential for protecting public health in the event of Pandemic Influenza.<sup>39</sup> Communications must successfully instruct, inform, and motivate appropriate self-protective behaviour. The communications must also regularly update risk information, build trust in officials and dispel rumours. Ideally, Pandemic communications maximize the public's capacity to act as an effective partner by encouraging prevention, promoting containment, and fostering resilience and recovery. Also, communication processes can prepare the public to adapt to changing circumstances or uncertainty during an emerging Pandemic, educate public health planners about existing vulnerabilities and resources that affect Influenza risk for specific populations, create dialogue between potentially affected populations, and foster an environment of mutual trust.

Preparedness strategies must consider what may be asked and expected of individuals and communities at all stages of a Pandemic to guide communication planning. A Pandemic may require minimally disruptive actions (e.g., increasing hand washing), but other actions taken by authorities may be difficult, evoking strong emotions and cause significant concern and potentially social unrest (e.g., quarantines and school and public facility closures). It is therefore important to develop and adapt key public health messages which would form the basis of a risk communication plan plus work with communities on community resilience planning. These actions are covered in Strategic Priority Four of this Strategic Plan. The public health messages have been drafted below and in future they will be reviewed and adapted to suit the needs of the specific circumstances as they arise.

<sup>39</sup> <https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2009.162537> Effective Health Risk Communication About Pandemic Influenza for Vulnerable Populations (Oct 2009)

No.	7 Key Preventive Public Health Messages for an Influenza Pandemic (DRAFT)
1	<b>Affects everyone:</b> Flu can affect everyone at any time and can be spread by droplet and contact.
2	<b>Eat and drink:</b> If you or anyone else suspects flu, drink plenty of fluids and eat well.
3	<b>Get advice:</b> Report to the nearest Health Facility or call 117 when you have symptoms such as fever, cough, headache, generalised body pain and sore throat.
4	<b>Wash Hands:</b> Coughing and sneezing spreads infection regularly wash hands with soap or sanitizer.
5	<b>Use tissue:</b> Use disposable paper tissue to sneeze and blow your nose and sneeze away from other people. Do not of hand-kerchiefs and face cloths as they can spread flu.
6	<b>Avoid people:</b> If you have flu, avoid gatherings and over-crowded areas and stay at home to avoid contact with other people to reduce the spread
7	<b>Follow instructions:</b> The authorities will give guidance about schools, day-care and work attendance as sometimes organisations may be temporarily closed to avoid the spread of infection

## 8.3 Measuring Performance

There are various ways to measure performance of this plan.

- The JEE can be used to assess progress in Pandemic preparedness and additional PPP indicators could also be identified
- The WHO checklist is also a way for measuring success
- A simulation exercise could be considered for assessing the performance of the system.

In addition, key performance indicators (KPIs) that are directly related to this plan Strategic Objectives are summarised below. For each KPI, there would need to be a data source identified with baseline data available and measurable targets set for the duration of the plan. This information is in **Annex Seven** under each of the Strategic Objectives.

### Key Performance Indicators

No.	Strategic Priority	Key Performance Indicators (KPIs)
1	Human Resources	- Proportion of health facilities with sufficient and competent workforce - Number of health and non-health personnel trained in Pandemic preparedness and response - Percentage of district RRTs trained in Pandemic preparedness, detection and response.
2	Logistics and Supply	- Adequate supply chain and logistics systems are in place and response capacities have been tested
3	Surveillance and Laboratory System	- Percentage of regions/districts with established Influenza sentinel and laboratory surveillance -NIC has been established - Percentage of regions/districts with established avian flu surveillance sites
4	Coordination and Communication	- An effective communication mechanism is in place Proportion of districts with an established and functioning One Health Platform. - An effective response coordination mechanism is in place
5	Clinical management & IPC	- Percentage of health facilities with readily available treatment guidelines of severe Influenza disease. - Percentage of health facilities with sufficient stock of essential drugs and PPE
6	Border Management	Proportion of PoEs that meet established standards for Influenza screening, prevention and control.
7	Prevention	- System in place for the transportation, warehousing and prioritised vaccine distribution Percentage of the population that is aware of basic measures for Influenza prevention and home-based treatment. - number of health personnel health educators, media and communication specialist trained in risk communication
8	Business Continuity	- Proportion of identified essential public and private services that have developed and tested business continuity plans in case of Pandemics. - Number of private businesses that have developed and tested business continuity plans for responding to Influenza Pandemics.

# Annexes

## Annex One: The Participants in Developing this Plan

The first table lists approximately 127 people (including from 2 districts) who gave their time to be interviewed as part of the development process or took part in the development workshops, or both, during the period from November 2018 to April 2019:

Participants from MoHS (approximately 80 people including Districts)			
Dr Amara Jambai	Dr TT Samba	Dr Mohamed Vandi	Dr Alfredo Moosa
Musa Feika	Mukeh Fanbulleh	Christina Fortune	Dr Lynda Farma-Grant
Dr. Donald S. Grant	Dr. Daniel Lavalie	Sumaila M. Tejan	Lily Kainwo
Dr Mamud I. Kamara	Dr Gregory Foray	Aminata T. Koroma	Musa D. Sheriff
Osman Barrie	Melvin Conteh	Jeffery K. Morison	Festus U. Amara
Dr. Maclean Sannoh	Andrew Charles	Ansumana Kamara	Kadijatu N. Kamara
Dr. Osaiwo Kanu	Dr. Fanny F. Koroma	Dr Daniel A. H. Cooper	Dr. Isaac Sesay
Christiana Kallon	Princess Marah	Saffa Gbonie	Dr Mohamed Kanneh
Musa M. Feika	Theophilus Nyuma	Sahr Amara Moriba	Daniel Kamara
Dr. Foday Sesay	Sheriff Conteh	Bockarie Sesay	Mohamed Kutubu
Mohamed Bah	Dr Ansumana Sillah	F Francis Koroma,	Iddrissa Owen Brima
Mohamed K Koroma	Sorie B. Conteh	Bockarie Ansumana	Francis Foday
Jatu Abdulai	Jack Lansana	Doris Harding	Margaret Mannah
Harold Thomas	Wesen Konteh	Allan Campbell	Beatrice Benjamin
Aminata T. Koroma	Ramatu E. Ngauja	Fatmata B D Jalloh	Kadijatu N Kamara
Kambia DHMT and local One Health Partners		Kenema DHMT and local One Health Partners	
Participants from MAF (6)			
Osman J D Kamara	Dr. Amara Leno	Niccolo Neriggi	Mohamed Bangura
Dr Tejan Jalloh	Raymonda Johnson		
Participants from EPA (2)			
Lovetta Juana	Hamidu D. Mansaray		
Participants from ONS (4)			
John V Rogers	Sabiatsu Bakar	Umaru Menjor Sesay	Joseph Bunting Graden
Participants from Development Partners (36)			
Participant	Organisation	Participant	Organisation
Shiyong Wang	World Bank	Musa Saidu	IHPAU
Kofi Amponsah	World Bank	Alhassan Bampia	IHPAU
Dr. Charles Njuguna	WHO	Dr Gang Wang	China CDC
Dr. Wilson Gachari	WHO	Esther D. Ngegba	China CDC

Victor Caulker	WHO	Dr. Luu Wei	China CDC
Philomena Rafferty	WHO	Dr Kan Biao	China CDC
Anna Maruta	WHO	Dr.Hu Yu	China CDC
Gerald Shambira	WHO Consultant	Brigette Gleason	US CDC
Dr James Benn	WHO	Tushar Singh	US CDC
Alexander Chimbaru	WHO	Reinhard Kaiser	US CDC
Robert Musoke	WHO	Sandi A. Genda	US CDC
Claudette Amuzu	WHO	Marta Guerra	US CDC
Jonathon Greene	WHO	Gladys Anyo	US CDC
Klaere Heyden	GIZ	Mr Ysuhiro Tsumura	WFP
Monica Dea	USAID	Dr Germain Bobo	FAO
Magnus Lahai	Sierra Leone Red Cross	Austin Bitek	FAO
Gassimu Mansaray	Sierra Leone Red Cross	Nantina Noelina	FAO
Mustapha Alpha	UNICEF	Tina Dickenson	Breakthrough Action
<b>Participants from Other Organisations (5)</b>			
<b>Participant</b>	<b>Organisation</b>	<b>Participant</b>	<b>Organisation</b>
Dr Clifford Kamara	Independent consultant (One Health Plan)	Betty Sam	Liverpool School of Tropical medicine
Roland Suluku	Njala Univeristy	Dr Sarian Kamara	Retired DCMO
Regina Bash-Taqi	Institute for Development		

**The second table** is a list of all of the 30 organisations who gave further comment on the plan as part of the Business Continuity initial workshops in July 2019 and this involved 74 people. There is a small cross over from the list above of about 20 people, but this ensured that at least another 50 people were involved in the planning process.

**Venue: Hill Valley - Organisations Participated in the PISP BCP workshops 8th - 12th July 2019**

No	Name of Organization	No. of Participants
1	Ministry of Health and Sanitation (MoHS)	11
2	CDC China	3
3	Integrated Health Projects Administration Units (IHPAU)	3
4	Njala University	1
5	Sierra Leone Red Cross Society	1
6	National Water Resources Management Agency (NWARMA)	2
7	TAC	1
8	Environmental Protection Agency - Sierra Leone (EPA-SL)	3
9	Ministry Agriculture and Forestry (MAF - VET, EPI)	10
10	Office of National Security (ONS)	2
11	SUCCESS RUTH LEIGH (HSS/SLA)	1

12	The World Bank	2
13	Institute of Public Administration and Management (IPAM) university	1
14	Military Hospital (34)	1
15	National Tourism and Cultural Affairs (NTCA)	4
16	Ministry of Sports-Sierra Leone (MoS-SL)	4
17	Baptism Conventional Sierra Leone (BCSL)	1
18	Ministry of Social Welfare Genda and Children Affairs (MSWGCA)	2
19	National Tele Communication (NATCOM)	3
20	SIERRATEL Limited	2
21	Ministry of Education (MoE)	3
22	AFRICELL Sierra Leone Limited	1
23	Kenema District Council (KEN. D.C.)	2
24	Liverpool School of Tropical Medicine	1
25	Western Area Rural District Council (WARDC)	2
26	Makeni City Council (MCC)	2
27	Bo District Council (BDC)	2
28	John Bobson Taylor - MOS/NSA	1
29	CUAMM NEMS (National Ambulance Service)	1
30	Kailahun District Council (KDC)	1

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Technical Team			
Name	Role	Phone	Mail
Carole Green	Team leader	+44 7968956950	<a href="mailto:carolergreen@gmail.com">carolergreen@gmail.com</a>
Dr Stefano Lazzari	Senior Technical Expert	+41 79 9123529	<a href="mailto:lazzarist@gmail.com">lazzarist@gmail.com</a>
Nathalie Maroun	Technical Expert: Pandemic Preparedness Planning Non-Health	+ 33 6 07 86 18 89	<a href="mailto:natalie.maroun@heiderich.fr">natalie.maroun@heiderich.fr</a>
Aruna Bangura	Technical Expert – Logistics	+23276701977	<a href="mailto:arunasbangura@gmail.com">arunasbangura@gmail.com</a>

## Annex Two: One Health Technical Working Group Invitation List (Jan 2019)

Name	Organisation	Email Address
Mohamed Bangura		banguramohamed754@gmail.com,
Christiana Conteh	IPC Lead MOHS	christy.conteh@yahoo.com,
KR Kreiger	US Government	kriegerKR@state.gov,
Amara Leno	MAF	lenoamara87@yahoo.fr,
Nantima Neolima	FAO	neolima.nanhma@fao.org,
Raymond Alpha	Red Cross Sierra Leone	raymond.alpha@yahoo.com,
Dr Sam Kanu	Surveillance Lead MOHS	samjokanu@yahoo.com,
Thomas Aapore	Int. Federation of Red Cross	Thomas.AAPORE@ifrc.org,
Alpha Augustin Kombo		augustinkalpha@gmail.com
James Bangura		banguraj@gmail.com
Brima Samai		brima10samai@gmail.com
Claudette Amuzu	WHO	amuzuc@who.int
Clifford Kamara	Independent consultant	cliffkamara@gmail.com
Doris Harding	Head of Labs MOHS	dorisharding@yahoo.com
Fatima Bakarr- Sesay		fatimabakarr.sesay@gmail.com
Florence Max- Macarthy	DHSE MOHS	auntyflo2@gmail.com
Germain Bobo	Director FAO	Germain.Bobo@fao.org
Harold Thomas	Comms Lead DHSE MOHS	haroldthomas2007@yahoo.com
Tejan Jalloh	Head of Animal Health MAF	Jallohtejan770@yahoo.com
James S. Fofanah	CD Breakthrough Action	james@jhuccpsl.org
James Squire		jmssquire@yahoo.com
Joseph Graden	POE lead ONS	jbuntinggraden@gmail.com
Lovetta Juanah	Deputy Director EPA	yattamomoh2004@yahoo.co.uk
Hamidu Mansaray	Research Officer EPA	mansarayhamidu@yahoo.com>,
Michael Alusine N'Dolie	WHO	ndolien@who.int
Dr Mohamed A Vandj	Director of DHSE MOHS	mohamedavandi69@yahoo.com
Momoh Lavahun		fongay@yahoo.com
Momoh Jah Jabbie	Breakthrough Action	momohjah@jhuccpsl.org
Mukeh K Fahnbulleh	Programme Manager DHSE	mukeh.phemanager16@gmail.com
Musa Matin Feika	Admin Manager DHSE	mmfeika1978@gmail.com
Dr Alfredo Moosa	Deputy Director DHSE MOHS	drajmoosa@gmail.com
Patrick Lansana	MOHS	patlanssix@gmail.com
Raymonda Johnson	Plant Health MAF	raymonda.johnson@yahoo.com
Robert MUSOKE	WHO	musoker@who.int
Sahr Gborie		srgborie@gmail.com
Sahr Simeon Gbandeh		sagbandeh@gmail.com
Tesfai Tseggai	FAO	tesfai.tseggai@fao.org
Tina Dickenson	Breakthrough Action	tina@jhuccpsl.org
Wilson GACHARI	WHO	gachariw@who.int
O'bai Conteh		obai.conteh@sl.ehealthafrica.org
Tamba Ngongou		tngongs@gmail.com
Austine Bikek	FAO	Austine.Bitek@fao.org
Magnus Lahai	Red Cross SL	mlahai@sierraleoneredcross.org
Vicram Daramy		daramyvicramy66@gmail.com
M Kolipha Kamara	US Global supply chain	mkolipha-kamara@ghsc-psm.org
Ansumana Sheka	CDC	kse8@cdc.gov
Manie Bangura		maniebangura@gmail.com
Duraman Conateh	GIZ	<duraman.conateh@giz.de
Kadija Tunabiek		kadijatunabiek@yahoo.com
Aminata Kamara	MOHS	aminata_krm@yahoo.com
Dr TT Samba	DCMO MOHS	ttsamba@yahoo.com

## Annex Three: Partner Roles and Functions Before and During a Pandemic

This annex maps the current known stakeholders, partners and governments agencies and details what they currently do plus what roles they MAY take during a Pandemic:

Dept./ Org	Role prior to and during a response	Provision of Resources	Importance
<b>1. Government: Ministries</b>			
MOHS	Health system delivery, high quality health services and health security	Human and financial, drugs and medical supplies and equipment, infrastructure.	1*
MAF	Formulate agricultural development policies	Human, financial, planting materials, land and machinery, livestock Provision of food/feed and protection of the agricultural land. Prevention of animal diseases and forest protection.	1*
Standard Bureau	Standards, e.g. food quality	Provision of guidance	3
EPA, ONS, NPPA (under office of the president)	Creating and enforcing a strict regulatory framework for environmental regulation.	Human and technical expertise. Safeguard and protect the environment and human lives	1
MOF	Prepare annual fiscal budget and issue adequate regulation for its execution. Manage Govt. financial assets.	Financial. Save and direct the uses of government funds	1*
MOE - ESSA, - EGTC	To formulate and implement policies and projects, likewise provide oversight functions across the entire energy supply chain.	Electricity/light provision.	1*
MWR - SALWACO - GUMA	To plan, develop, distribute, and manage optimum use of water resources.	Provision of water. It is needed for life to exist	1*
Transport Ministry - SLRSA - SLRA - SLRMF	Responsible for transportation within the country. Developing govt. transportation policies.	Human resource expertise. Overseeing road safety, civil aviation, and maritime transport.	1
Information & Comms - NATCOM - IMC	Information gathering, management and dissemination. Regulation of mobile telecommunications companies.	Human and technical expertise. Ensure quality dissemination of information.	1*
MOD - Military	Formulate, implement, monitor & evaluate strategic defence priorities	Human and technical expertise. Provide security	1
Local Government		Human and technical	1*
<b>2. Local and international NGOs</b>			
Save the Children	Logistic support, social mobilization	Financial & material	1



International Red Cross	Healthcare services (emergency/relief)	Human, financial, material, infrastructure	1
Care International	Relief & emergency response	Medical supplies, food	2
Helen Keller	Technical advice, research	Expertise, financial	2
E Health Africa	Technical advice	Expertise, financial	1
CUAMM	Case management	Human, material	1
MSF	Case management, logistical support	Human, medical supplies	1
IMC	Healthcare services, technical & logistic support, emergency response	Human, medical supplies	1
Concern	Adolescent health and WASH, Research	Expertise, materials	3
IRC	Relief, technical support	Medical supplies	2
PIH	Emergency response	Human (already working closely with MOHS to establish a centre of excellence)	1
GOAL	Emergency response, child protection, WASH	Human, material	2
AFENET	Capacity building in epidemiology	Technical	2
WHH			2
World Vision			2
Caritas			2
Don Bosco			2
CHASL	Social mobilization, relief (Also support Christian hospitals across the country)	Technical advice, material,	1
Civil Society	Social mobilization	Human resources	1
HELP SL	Social mobilization	Technical	3
Aberdeen Women Centre	Healthcare services, case management	Medical supplies, human	2
CCSL (council of churches)	Relief	Material	3
SLRCS	Emergency response	Expertise	1
Plan International	Relief, logistical support, child protection, emergency response	Material, human	1
Focus 1000	Child protection, case management	Material, human	2
ICAP	Research, IPC, health systems strengthening	Expertise	3
ACF	Relief, WASH, risk management	Material, expertise	2
Breakthrough Action	Community engagement	Technical support on comms	1
<b>3. UN and bilateral development agencies</b>			
WHO	Technical, logistical, and financial support	Expertise, equipment, finance	1
UNICEF & UNDP	Funding, logistics, and technical support	Finances, equipment, expertise, support	1
FAO - ECTAD Team (animal disease)	Same as above	Same as above	1
Irish Aid	Funding	Financial	3
Japanese Aid	Same as above	Same as above	3

World Bank	Funding, technical support	Finance, expertise	1
China Aid	Funding, technical and logistical support	Finance, equipment and expertise	1
USAID	Funding, logistical, and technical	Finance, equipment, and expertise	1
DFID	Funding, logistics, and technical support	Finance, equipment, and expertise	2
CDC – USA	Same as above	Same as above	1
CDC – China	Same as above	Same as above	1
CDC-Africa	Same as above	Same as above	1
GIZ	Same as above	Same as above	2
ADB	Finance	Logistics	2
<b>4. Private sector/companies</b>			
Telecommunication companies	Disseminate health messages, IPC sensitization messages	Money, food and non-food items Limit the transmission disease. Active role in information dissemination during Pandemic	1
Betting Companies	Donation	Money, food and non-food items Give government additional support	3
Water production company	Donations	Food and non-food items Keep supplying water	1
Mining companies	Donations	Money, equipment, refurbishment/renovation of buildings Give government additional support.	2
Agricultural companies	Donations	Food items	1
International businesses & communities living in SL	Donations	Money, non-food items	2
Religious communities	Donation, help in linking children to their parents, adoption of children, psychosocial support to children who lost their parents.	Food and non-food items, housing	1
Insurance companies	Donations	Money	2

Key: 1=critical; 2=highly desirable/really needed; 3=helping/useful)

Note these ratings were generated from the workshops and will change over time.

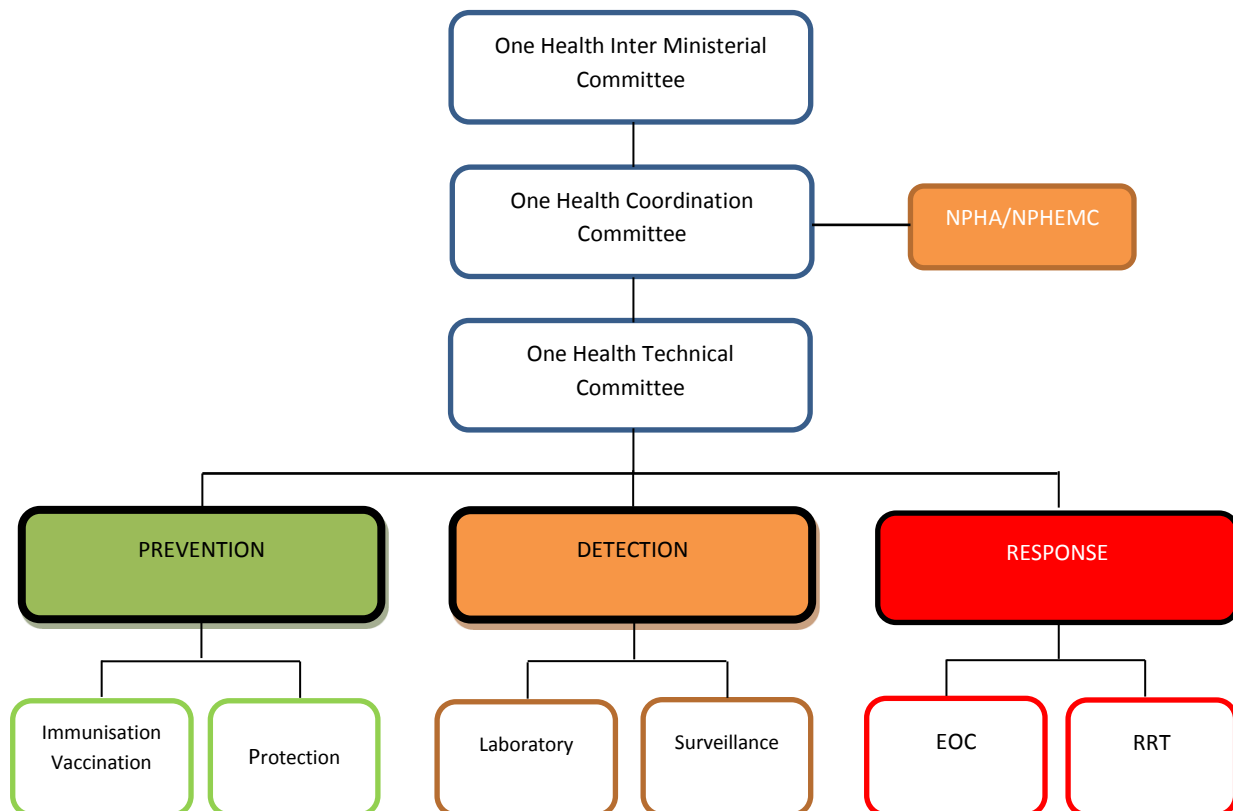
## Annex Four: Coordination During a Response

**Coordination of Pandemic response -roles and responsibilities:** Coordination of influenza pandemic response will be done through the National One Health Platform (NOHP) structure as described in the National One Health Strategic Plan (2019 – 2023). The One Health Coordination Committee (OHCC) provides overall leadership and policy guidance on all issues related to One Health and will therefore play the key role in responding to any influenza pandemic. It is co-chaired by the Chief Medical Officer and the Chief Agricultural Officer. The OHCC will work closely with the National Public Health Agency (NPHA) and the National Public Health Emergency Committee (NPHEMC) and will advise the One Health Inter Ministerial Committee that will be key in resource mobilization.

The membership of the OHCC includes senior directors from MoHS and MDA’s such as MAF, EPA and ONS as well as key development partners such as WHO, FAO, US CDC, USAID, China CDC, Public Health England, among others. The OHCC provides leadership to the Technical Working Groups (TWGs) under the broad areas of prevention, detection and response. The OHCC committee will advise on the specific technical subcommittees that will be in operation in responding to an influenza pandemic but these may include: Surveillance, Case management, Infection Prevention and Control, Laboratory, Communication, Social mobilisation ,Data management, Monitoring and Evaluation among others.

The response of the pandemic will be coordinated within the well-established national Public Health Emergency Operation Centre (EOC) which uses the Incident Management System (IMS). A full description of this coordination mechanism is provided in the recently published National Action Plan for Health Security (NAPHS).

Sierra Leone National One Health Platform (NOHP) Structure



## Annex Five: Essential Services and Economic Sector Mapping

### 1. One Health Platform

Area	Public	Private	International/ NGO
<b>Food and Agriculture</b>	<ul style="list-style-type: none"> <li>The Ministry of Agriculture and Forestry (MAF)</li> <li>Ministry of Health and Sanitation</li> <li>National Food Security Committee (Ministerial Policy Committee (MPC), Technical Committee (TC), Ministerial Policy Committee)</li> <li>Ministry of Fisheries and Marine Resources</li> </ul>	<ul style="list-style-type: none"> <li>Sierra Fishing company</li> <li>SOCFIN</li> <li>Rice: west African Rice Company</li> <li>Pineapple: DOLE</li> <li>Coffee: Theo Broma</li> <li>Supermarkets: Monoprix / Saint Mary's etc.</li> </ul>	<ul style="list-style-type: none"> <li>USAID</li> <li>FAO</li> </ul>
<b>Water Management</b>	<ul style="list-style-type: none"> <li>Ministry of Water Resources</li> <li>Sierra Leone Water Company</li> <li>District Environmental Health Officers</li> <li>National Water Resources Board</li> </ul>	<ul style="list-style-type: none"> <li>Graft water</li> <li>Shankerads</li> </ul>	<ul style="list-style-type: none"> <li>African Ministers' Council on Water</li> </ul>
<b>Environment</b>	<ul style="list-style-type: none"> <li>MAF</li> <li>Ministry of Fisheries and Marine Resources</li> <li>Environment Protection Agency Sierra Leone</li> <li>Ministry of Health and Sanitation</li> </ul>		
<b>Waste Management</b>	<ul style="list-style-type: none"> <li>MOHS</li> <li>Freetown Waste Management</li> </ul>	<ul style="list-style-type: none"> <li>Masada Waste Management</li> </ul>	
<b>Animal Health</b>	<ul style="list-style-type: none"> <li>MAF</li> <li>Community Animal Health Workers (CAHWs)</li> <li>Emergency Centre for Transboundary Animal Diseases (ECTAD)</li> <li>Livestock and Veterinary Services in MAF</li> </ul>	<ul style="list-style-type: none"> <li>Vet in Freetown</li> </ul>	<ul style="list-style-type: none"> <li>FAO</li> <li>USAID</li> </ul>

## 2. National Security

Area	Public	Private	International/ NGO
<b>Civilian activities</b>	<ul style="list-style-type: none"> <li>• Ministry of Internal Affairs</li> <li>• Ministry of Primary and Secondary Education</li> <li>• Ministry of Tourism and Cultural Affairs</li> <li>• Ministry of Political and Public Affairs</li> <li>• Ministry of Sports</li> <li>• Ministry of Youth Affairs</li> <li>• Ministry of Social Welfare, Gender and Children's Affairs</li> </ul>	<ul style="list-style-type: none"> <li>• Rising Academy</li> <li>• Educaid</li> </ul>	
<b>Legal activities</b>	<ul style="list-style-type: none"> <li>• Minister of Justice</li> <li>• Judicial and Legal Service Commission (JLSC)</li> </ul>		
<b>Military activities</b>	<ul style="list-style-type: none"> <li>• Ministry of Defence and National Security</li> <li>• Republic of Sierra Leone Armed Forces (RSLAF)</li> </ul>		
<b>National security</b>	<ul style="list-style-type: none"> <li>• Ministry of Internal Affairs</li> <li>• The Sierra Leone Police (SLP)</li> <li>• Office of National Security</li> </ul>	<ul style="list-style-type: none"> <li>• G4S</li> <li>• FSL</li> <li>• SSGI</li> </ul>	
<b>Border control</b>	<ul style="list-style-type: none"> <li>• Border Security Department at the Office of National Security</li> <li>• Sierra Leone Ports Authority</li> <li>• Sierra Leone Airports Authority</li> </ul>	<ul style="list-style-type: none"> <li>• Westminster security</li> </ul>	

### 3. Economic Sector

Area	Public	Private	International/ NGO
<b>Energy</b>	<ul style="list-style-type: none"> <li>Ministry of Energy</li> <li>Electricity Distribution and Supply Authority EDSA</li> <li>Electricity Generation and Transmission Company (EGTC)</li> <li>Sierra Leone Electricity &amp; Water Regulatory Commission</li> <li>Guma Water Company</li> </ul>	<ul style="list-style-type: none"> <li>Agreco (generators)</li> </ul>	
<b>Finance/ Banks</b>	<ul style="list-style-type: none"> <li>Ministry of Finance</li> <li>The Bank of Sierra Leone</li> <li>National Revenue Authority (NRA)</li> <li>Audit Service Sierra Leone (ASSL)</li> </ul>	<ul style="list-style-type: none"> <li>Guaranty trust bank</li> </ul>	
<b>Transport</b>	<ul style="list-style-type: none"> <li>Ministry of Transportation and Aviation</li> <li>Sierra Leone Civil Aviation Authority (SLCAA)</li> <li>The Sierra Leone Roads Authority (SLRA)</li> <li>The Ministry of Works, Housing and Infrastructure (MOWHI)</li> </ul>	<ul style="list-style-type: none"> <li>Bolloré Transport &amp; Logistics</li> <li>Boat handling (nectar)</li> </ul>	
<b>Communication</b>	<ul style="list-style-type: none"> <li>Ministry of Information and Communication</li> <li>National Telecommunication Commission</li> </ul>	<ul style="list-style-type: none"> <li>Orange (SL) Limited</li> <li>Lintel (SL) Limited</li> <li>SIERRATEL</li> <li>AFCOM (SL) Limited: internet service provider</li> <li>Onlime (SL) Limited ISP</li> <li>Iptel:</li> <li>Atlas Communications</li> <li>Media: AYV</li> <li>Alfricell</li> <li>Radio stations</li> </ul>	

## Annex Six: WHO Operational Framework for Pandemic Influenza Preparedness, Response and Recovery

Operational Pandemic Phases		
Prevention		
Preparedness		
Response	Standby	
	Action	Initial
		Targeted
	Stand-down	
Recovery		

### PREPAREDNESS

FUNCTIONAL AREAS	ACTIVITIES
<b>RESOURCES</b>	
HR	<ul style="list-style-type: none"> <li>-Orient MoHS and MAF staff on pandemic influenza by including a module on pandemic influenza in EPI &amp; IDSR trainings</li> <li>-Conduct annual pandemic influenza table top exercises at DHMTs and major hospitals</li> <li>-Conduct bi-annual pandemic influenza simulation exercises for national level health managers and national RRTs, DHMTs and district RRTs</li> <li>-Develop a plan for surge capacity</li> </ul>
Stockpiles: PPE, Antivirals etc.	<ul style="list-style-type: none"> <li>-Develop a concept note for medical countermeasures required for pandemic influenza and seek expert guidance</li> <li>- Prepare a list of items required for stockpiling</li> <li>-Estimate quantities of items that may be needed for stockpiling e.g. of PPE, Tamiflu, VTM, Lab reagents</li> <li>-Identify warehousing space for use if need be</li> </ul>
Vaccine	<ul style="list-style-type: none"> <li>-Develop a vaccine a deployment plan</li> <li>-Have an updated vaccine request form with WHO HQ</li> </ul>
<b>HEALTH INTERVENTIONS</b>	
Public health management (NPI)	Develop SOPs for the following non-pharmaceutical interventions: Hand hygiene, Workplace closures , Respiratory etiquette, Workplace measures , Face masks, Avoiding crowding , Surface and object cleaning , Travel advice, Other environmental measures, Entry and exit screening , Contact tracing , Internal travel restrictions, Isolation of sick individuals , Border closure, Quarantine of exposed individuals, Risk communication and School closures.
Clinical management	-Every hospital & DHMT to carry out annual CME on clinical management of influenza for clinicians
IPC	-Include pandemic influenza considerations in regular IPC trainings and periodic IPC assessments

Managing deaths	-Incorporate mass fatalities management in disaster management trainings
Vaccination (regulatory processes and microplanning)	-Develop and test a national development and deployment plan for pandemic influenza vaccine -Develop and update the pandemic influenza vaccine request form and submit to WHO HQ
<b>INVESTIGATION</b>	
Surveillance and Risk Assessment (investigation and assessment, analysis of data, information for action)	-Sustain influenza surveillance through: support for influenza sentinel surveillance through provision of resources for specimen collection and transportation, quarterly supportive supervision of sites, quarterly review meetings -Sustain regular collection, analysis and reporting of lab and epidemiological data on influenza. -Ensure completeness and timeliness in FLUID and FLUNET reporting for Sierra Leone -Annual training on influenza for health workers in influenza sentinel surveillance sites
Laboratory capacity	-Sustain capacity of influenza lab activities through provision of VTM, reagents, PPE, testing algorithms -Train a second influenza laboratory staff -Quality assurance for influenza lab
<b>COMMUNICATION and COORDINATION</b>	
Public communication	-Include risk communication in the curriculum of health workers on basic training -Identify communication goals in relation to pandemic influenza -Determine the key messages that will be carried in the public communication to target certain audience segments -Identify the materials and channels of communication that will be needed for effective public communication in regard to a pandemic influenza outbreak -Develop a pandemic influenza risk communication plan
Response communications/sharing of information	-Basic messaging about influenza -Insure formally appointed emergency operation structures (PHEMC, DEOC)
<b>POINTS OF ENTRY</b>	
Communication	-Assess PoE capacity to communicate with health authorities
Liaison	-Regional level public health collaborations
<b>RESEARCH</b>	-
<b>BUSINESS CONTINUITY</b>	-alert the whole system about what disruption to expect in case of an outbreak and encourage the development of business continuity planning across sectors



## RESPONSE: STANDBY

FUNCTIONAL AREAS	ACTIONS
<b>RESOURCES</b>	
HR	<ul style="list-style-type: none"> <li>-Conduct scheduled refresher trainings for MoHS and MAF staff on pandemic influenza</li> <li>-Conduct monthly pandemic influenza table top exercises at DHMTs and major hospitals</li> <li>- Conduct pandemic influenza simulation exercises as agreed for national level health managers, national RRTs, DHMTs and district RRTs to skill up as they stand by for the response</li> </ul>
Stockpiles: PPE, Antivirals etc.	<ul style="list-style-type: none"> <li>- Update list of items required for stockpiling</li> <li>-Estimate quantities items that may be needed for stockpiling e.g. of PPE, Tamiflu, VTM, Lab reagents</li> <li>-make verifiable arrangements for warehousing and distribution of commodities and equipment, especially last mile logistics.</li> <li>-Initiate procurement of PPE, Tamiflu, VTM, Lab reagents</li> <li>-Identify additional warehousing space</li> </ul>
Vaccine	<ul style="list-style-type: none"> <li>-Review the vaccine deployment plan and update it as necessary</li> <li>-Review updated vaccine request form with HQ</li> </ul>
<b>HEALTH INTERVENTIONS</b>	
Public health management (NPI)	<ul style="list-style-type: none"> <li>-Train various sections of society on the following non-pharmaceutical interventions: Hand hygiene, Workplace closures, Respiratory etiquette, Workplace measures, Face masks, Avoiding crowding, Surface and object cleaning, Travel advice, Other environmental measures, Entry and exit screening, Contact tracing, Internal travel restriction, Isolation of sick individuals, Border closure, Quarantine of exposed individuals, Risk communication and School closures.</li> <li>-Provide hand sanitizers, hand washing facilities at strategic positions e.g. hand sanitizers in public service vehicles, hand washing facilities at entries to main buildings</li> </ul>
Clinical management	<ul style="list-style-type: none"> <li>-Hospitals and DHMT to carry out monthly CME on clinical management of influenza for clinicians; specifically, to cover diagnosis of ILI and SARI, Tamiflu dosages, influenza vaccine handling and administration, IPC, isolation, laboratory specimen collection, the non-pharmaceutical interventions</li> <li>-Train clinical staff on ventilator use and management of SARI</li> <li>-Plan for expansion of treatment sites</li> </ul>
IPC	<ul style="list-style-type: none"> <li>-Conduct IPC trainings at major hospitals with a focus on pandemic influenza</li> <li>-Preposition IPC items at major hospitals and DHMTs</li> <li>-Reinforce IPC measures in main hospitals through intensification of supervision visits and issuance of updated check-lists for IPC supervision</li> </ul>
Managing deaths	<ul style="list-style-type: none"> <li>-Conduct mass fatalities management trainings for municipal staff</li> <li>-Identify possible sites for cemeteries</li> </ul>
Vaccination	<ul style="list-style-type: none"> <li>-Update the pandemic influenza vaccine request form with the support of WHO HQ</li> <li>-Prepare microplan for possible mass vaccination</li> </ul>

	-Address regulatory processes with the pharmacy board e.g. licensure of new influenza vaccine
<b>INVESTIGATION</b>	
Surveillance and Risk Assessment (investigation and assessment, analysis of data, information for action)	<ul style="list-style-type: none"> <li>-Intensify influenza surveillance through: through provision of resources for specimen collection and transportation, quarterly supportive supervision of sites, quarterly review meeting</li> <li>-Intensify regular collection, analysis and reporting of lab and epidemiological data on influenza.</li> <li>-Ensure completeness and timeliness in FLUID and FLUNET reporting</li> <li>-Develop standard case definition for the outbreak; Train, Print &amp; distribute standard case definition</li> </ul>
Laboratory capacity	<ul style="list-style-type: none"> <li>-Step up the capacity of influenza lab activities through; more staffing, more freezing capacity, more commodities, more VTM, more reagents, and more PPE,</li> <li>-Revise the influenza lab testing algorithms</li> <li>-Provide external experts for technical assistance to the influenza laboratory staff</li> <li>-Seek more quality assurance for influenza lab in view of the new strain</li> <li>-Create capacity in other labs to test for influenza</li> </ul>
<b>COMMUNICATION and COORDINATION</b>	
Public communication	<ul style="list-style-type: none"> <li>-Review communication goals in relation to the unfolding epidemic</li> <li>-Adjust, as necessary, the key messages that will be carried in the public communication</li> <li>-Develop the materials communication that will be needed for effective public communication</li> <li>-Review the pandemic influenza risk communication plan, convert it into an action plan</li> <li>-Designate individuals to serve the roles of spokespersons</li> <li>-Have a contacts list for emergency communication team</li> </ul>
Response communications/sharing of information	<ul style="list-style-type: none"> <li>- facilitate emergency operation structures to meet frequently, engage them in contingency planning</li> <li>- Regular communication in alert changes, resources mobilisation for coordination activities, virtual communication (Social media and CUG's),</li> </ul>
<b>POINTS OF ENTRY</b>	
Communication	-Equip PoEs to communicate with health authorities
Liaison	-Convene regional level public health meeting i.e. Mano River Union
<b>RESEARCH</b>	
<b>BUSINESS CONTINUITY</b>	
	-alert the whole system about what disruption to expect in case of an outbreak

## ACTION – INITIAL

FUNCTIONAL AREAS	ACTIVITIES
<b>RESOURCES</b>	
HR	<ul style="list-style-type: none"> <li>-Conduct response oriented trainings for MoHS and MAF staff on pandemic influenza</li> <li>-Conduct monthly pandemic influenza table top exercises at unaffected DHMTs and major hospitals</li> <li>-Seek technical staff from WHO</li> </ul>
Stockpiles: PPE, Antivirals etc.	<ul style="list-style-type: none"> <li>-Update the estimate quantities items needed for response</li> <li>-sustain arrangements for last mile logistics.</li> <li>-Identify additional warehousing space as need be</li> </ul>
Vaccine	<ul style="list-style-type: none"> <li>-Implement vaccine a deployment plan</li> <li>-Have an updated vaccine request form with HQ</li> <li>-Review target population in view of new information</li> </ul>
<b>HEALTH INTERVENTIONS</b>	
Public health management (NPI)	<ul style="list-style-type: none"> <li>-Intensify the implementation of the following non-pharmaceutical interventions as widely as possible, utilizing all opportunities possible: Hand hygiene, Workplace closures, Respiratory etiquette, Workplace measures, Face masks, Avoiding crowding, Surface and object cleaning, Travel advice, Other environmental measures, Entry and exit screening, Contact tracing, Internal travel restriction, Isolation of sick individuals, Border closure, Quarantine of exposed individuals, Risk communication and School closures.</li> <li>-Avail hand sanitizers, hand washing facilities and face masks at as many locations as possible.</li> </ul>
Clinical management	<ul style="list-style-type: none"> <li>-Hospitals and DHMT to carry out weekly CME on clinical management of influenza for clinicians; specifically, to cover diagnosis of ILI and SARI, Tamiflu dosages, influenza vaccine handling and administration, IPC, isolation, laboratory specimen collection, the non-pharmaceutical interventions</li> <li>-Continuously determine the burden of SARI</li> <li>-Continuously assess the need for isolation facilities</li> <li>-Consider the need to expand or reduce temporary treatment centres</li> </ul>
IPC	<ul style="list-style-type: none"> <li>-Conduct IPC trainings at major hospitals with a focus on pandemic influenza</li> <li>-Assess the availability of IPC items at major hospitals and DHMTs and make necessary action e.g. re-distribution</li> <li>-Reinforce IPC measures in main hospitals</li> </ul>
Managing deaths	<ul style="list-style-type: none"> <li>-Designate possible sites for cemeteries</li> </ul>
Vaccination	<ul style="list-style-type: none"> <li>-Identify priority groups for initial vaccination in line with global guidance</li> <li>Identify the target population for mass influenza vaccination, if/when vaccines available</li> <li>-Immunize the target population</li> </ul>

<b>INVESTIGATION</b>	
Surveillance and Risk Assessment (investigation and assessment, analysis of data, information for action)	<ul style="list-style-type: none"> <li>-Intensify influenza surveillance, including active case search for SARI</li> <li>-Intensify collection, analysis and reporting of lab and epidemiological data on influenza.</li> <li>-Ensure completeness and timeliness in FLUID and FLUNET reporting</li> <li>-Refresher Training on standard case definition for influenza</li> <li>-Active case search for SARI</li> </ul>
Laboratory capacity	<ul style="list-style-type: none"> <li>-Step up the capacity of influenza lab activities through as necessary</li> <li>-Revise the influenza lab testing algorithms</li> <li>-Provide external experts for technical assistance to the influenza laboratory staff as necessary</li> <li>-Seek more quality assurance for influenza lab in view of the new strain</li> <li>-Create capacity in other labs to test for influenza</li> </ul>
<b>COMMUNICATION and COORDINATION</b>	
Public communication	<ul style="list-style-type: none"> <li>-Review communication goals in relation to the unfolding epidemic</li> <li>-Adjust, as necessary, the key messages that will be carried in the public communication</li> <li>-Distribute the materials communication that will be needed for effective public communication</li> <li>-Activate the pandemic influenza risk communication action plan</li> <li>-Designate individuals to serve the roles of spokespersons</li> <li>-Identify media and communication resources i.e. outlets to use</li> <li>-Prepare for the 1<sup>st</sup> announcement</li> <li>-Create an opportunity for public to get information as necessary</li> <li>-Establish procedures for updates in public information, including sitreps.</li> <li>-Prepare talking points for</li> <li>-Monitor the flow of information and public response and take action as necessary</li> </ul>
Response communications/sharing of information	<ul style="list-style-type: none"> <li>-Orient and activate relevant emergency operation structures for effective response</li> <li>-Advising the national authorities on state of emergency declaration or not</li> <li>-Kick Start one health approach, regular consultation with chamber of commerce HDP, ONS, SLANGO</li> </ul>
<b>POINTS OF ENTRY</b>	
Communication	Ensure POEs have the required systems in place and test them, communicate the role of POEs to the public
Liaison	
<b>RESEARCH</b>	
<b>BUSINESS CONTINUITY</b>	-alert the whole system about what disruption to expect in case of an outbreak

## ACTION – TARGETED

FUNCTIONAL AREAS	ACTIVITIES
<b>RESOURCES</b>	
HR	<ul style="list-style-type: none"> <li>-Conduct response oriented trainings for MoHS and MAF staff on pandemic influenza</li> <li>-Conduct regular pandemic influenza table top exercises at unaffected DHMTs &amp; major hospitals</li> <li>-Seek technical staff from WHO</li> <li>-Utilize staff from affected districts to prepare yet to be affected districts</li> </ul>
Stockpiles: PPE, Antivirals etc.	<ul style="list-style-type: none"> <li>-Update the estimate quantities items needed for response</li> <li>-sustain arrangements for last mile logistics.</li> <li>-Identify additional warehousing space as need be</li> </ul>
Vaccine	<ul style="list-style-type: none"> <li>-Implement vaccine a deployment plan</li> </ul>
<b>HEALTH INTERVENTIONS</b>	
Public health management (NPI)	<ul style="list-style-type: none"> <li>-Intensify the implementation of the following non-pharmaceutical interventions as widely as possible, utilizing all opportunities possible: Hand hygiene, Workplace closures, Respiratory etiquette, Workplace measures, Face masks, Avoiding crowding, Surface and object cleaning, Travel advice, Other environmental measures, Entry and exit screening, Contact tracing, Internal travel restriction, Isolation of sick individuals, Border closure, Quarantine of exposed individuals, Risk communication and School closures.</li> <li>-Avail hand sanitizers, hand washing facilities and face masks at as many locations as possible.</li> </ul>
Clinical management	<ul style="list-style-type: none"> <li>-Carry out CME on clinical management of influenza for clinicians on a need basis i.e. areas that where there are gaps</li> <li>-Continuously determine the burden of SARI</li> <li>-Continuously assess the need for isolation facilities</li> </ul>
IPC	<ul style="list-style-type: none"> <li>-Continuously assess the availability of IPC items at major hospitals and DHMTs &amp; make necessary action e.g. re-distribution</li> <li>-Reinforce IPC measures in main hospitals and at temporary treatment centres</li> </ul>
Managing deaths	<ul style="list-style-type: none"> <li>-Designate possible sites for cemeteries</li> </ul>
Vaccination	<ul style="list-style-type: none"> <li>-Expand the target population for mass influenza vaccination</li> <li>-Continue to immunize</li> </ul>
<b>INVESTIGATION</b>	
Surveillance and Risk Assessment (investigation and assessment, analysis of data, information for action)	<ul style="list-style-type: none"> <li>-Intensify influenza surveillance, including active case search for SARI</li> <li>-Intensify collection, analysis and reporting of lab and epidemiological data on influenza.</li> <li>-Ensure completeness and timeliness in FLUID and FLUNET reporting</li> <li>-Refresher Training on standard case definition for influenza</li> </ul>
Laboratory capacity	<ul style="list-style-type: none"> <li>-Step up the capacity of influenza lab activities through as necessary</li> </ul>

	<ul style="list-style-type: none"> <li>-Revise the influenza lab testing algorithms</li> <li>-Provide external experts for technical assistance to the influenza laboratory staff as necessary</li> <li>-Seek more quality assurance for influenza lab in view of the new strain</li> <li>-Create capacity in other labs to test for influenza</li> </ul>
<b>COMMUNICATION and COORDINATION</b>	
Public communication	<ul style="list-style-type: none"> <li>-Adjust, as necessary, the key messages that will be carried in the public communication</li> <li>-Distribute the materials communication that will be needed for effective public communication</li> <li>-Follow the established procedures for updates in public information, including sitreps.</li> <li>-Monitor the flow of information and public response and take action as necessary</li> </ul>
Response communications/sharing of information	
<b>POINTS OF ENTRY</b>	
Communication	
Liaison	
<b>RESEARCH</b>	
<b>BUSINESS CONTINUITY</b>	Implement Business Continuity Plans in key sectors, implement Community resilience Plans

## STAND-DOWN

FUNCTIONAL AREAS	ACTIVITIES
<b>RESOURCES</b>	
HR	<ul style="list-style-type: none"> <li>-Seek technical staff from WHO</li> <li>-Utilize staff from affected districts to prepare yet to be affected districts</li> <li>Resume bi-annual pandemic influenza simulation exercises for national level health managers, national RRTs, DHMTs and district RRTs</li> </ul>
Stockpiles: PPE, Antivirals etc.	<ul style="list-style-type: none"> <li>-Review estimate quantities of items needed for response</li> <li>-Withdraw supplies that may not be utilized, bring to a central location</li> </ul>
Vaccine	<ul style="list-style-type: none"> <li>-Review vaccine needs with a view to offering the balances for redistribution to other countries</li> </ul>
<b>HEALTH INTERVENTIONS</b>	
Public health management (NPI)	<ul style="list-style-type: none"> <li>-end the 'extreme measures' employed as non-pharmaceutical interventions; e.g. Workplace closures, Internal travel restriction, Border closure, communication and School closures.</li> <li>-scale down on the 'moderate measures' employed as non-pharmaceutical interventions. workplace measures, Face masks, Avoiding crowding,</li> <li>-scale down on hand sanitizers, hand washing facilities and face masks, only at a few locations.</li> </ul>
Clinical management	<ul style="list-style-type: none"> <li>-decommission some of the temporary treatment centres</li> </ul>
IPC	<ul style="list-style-type: none"> <li>-Mop up excess IPC items at various sites and return to storage</li> <li>-Sustain IPC measures in main hospitals</li> </ul>
Managing deaths	<ul style="list-style-type: none"> <li>-decommission cemetery sites</li> </ul>
Vaccination	<ul style="list-style-type: none"> <li>-Return unused vaccines to WHO for possible re-distribution to other countries as the need may be</li> </ul>
<b>INVESTIGATION</b>	
Surveillance and Risk Assessment (investigation and assessment, analysis)	<ul style="list-style-type: none"> <li>-Continue influenza surveillance: regular collection, analysis &amp; reporting of lab &amp; epidemiological data on influenza.</li> <li>-Ensure completeness and timeliness in FLUID and FLUNET reporting for Sierra Leone</li> </ul>
Laboratory capacity	<ul style="list-style-type: none"> <li>-Step down the capacity of influenza lab activities as necessary</li> <li>-Scale down on external experts for technical assistance to the influenza laboratory</li> </ul>
<b>COMMUNICATION and COORDINATION</b>	
Public communication Response communications/sharing of info	<ul style="list-style-type: none"> <li>-Retrieve for storage the communication materials that remain unutilized</li> <li>-Updates the public on the de-escalation and the coming to an end of the threat</li> </ul>
<b>POINTS OF ENTRY</b>	
Communication and Li	
Liaison	
<b>RESEARCH</b>	
<b>BUSINESS CONTINUITY</b>	

## Annex Seven: The Strategic Priorities and Objectives

<b>Strategic Priority No.1: HUMAN RESOURCES</b>			
<p><b>'SMART' Priority Statement:</b> By 2024, there is a <b>sufficient and competent integrated workforce</b> to detect and manage Influenza cases at <b>all levels, involving all One Health partners</b> through <b>training and continuous professional development</b>, including routine <b>supportive supervision and mentorship</b>, to ensure effective service delivery.</p> <p><b>Linked to Success Factors: 1 to 4</b></p>			
<b>SMART Objective</b>	<b>Year 1 (by December 2020)</b>	<b>Years 2 and 3 (by December 2022)</b>	<b>Years 4 and 5 (by December 2024)</b>
<p>1.1 <b>At least 90% of current volunteer staff will be recruited onto the government payroll</b> to increase the number of trained human, animal and environmental health staff in the respective technical areas to improve service delivery of frontline workers.</p>	<ul style="list-style-type: none"> <li>Registration and verification of all volunteer staff in MoHS, MAF, and EPA</li> <li>Advocate for recruitment of 25% of all volunteer staff by GoSL</li> <li>Assessment of all staff on Influenza case detection and management (Not realistic) so we are recommending the assessment of staff under surge and recruit new ones as appropriate</li> <li>Lobby for review of scheme of service to include posts of key recommended staff</li> </ul>	<ul style="list-style-type: none"> <li>Approval of at least 50% of all volunteer staff as government employees</li> <li>Training of relevant health workers, CHWs and CAHWs on standard case definition and community-based surveillance</li> <li>Facilitate motivation of CHWs and CAHWs</li> </ul>	<ul style="list-style-type: none"> <li>Suitable and qualified staff on Influenza management will be employed as required</li> <li>Scheme of service reviewed and updated</li> <li>There will be appropriate distribution of staff at health facilities using indicators and research findings</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
90% of current volunteer staff have been recruited in government payroll	<ul style="list-style-type: none"> <li>% of volunteers recruited</li> <li>Number of volunteers trained</li> </ul>	<ul style="list-style-type: none"> <li>HRH database</li> </ul>	
<b>SMART Objective</b>	<b>Year 1 (by December 2020)</b>	<b>Years 2 and 3 (by December 2022)</b>	<b>Years 4 and 5 (by December 2024)</b>
<p>1.2 Improve the staff terms and conditions and the work environment by providing the required working materials, policies and data collection tools to improve staff retention (human, animal and environmental health) retention.</p>	<ul style="list-style-type: none"> <li>All facilities will have updated reporting tools for Influenza</li> <li>Facilitate the availability of basic amenities at the health facilities (internet, Tablets, Server, electricity, WASH facilities)</li> </ul>	<ul style="list-style-type: none"> <li>Improve staff recruitment process,</li> <li>Introduce Award system for performing facilities and districts</li> <li>Implementation of staff</li> </ul>	<ul style="list-style-type: none"> <li>Facilitate the smooth running and timely payment of NASSIT benefit to retired personnel</li> <li>Staff will benefit from medical insurance scheme</li> </ul>



		appraisal system <ul style="list-style-type: none"> <li>• There will be timely approval of annual leave and its package</li> <li>• Timely payment of staff allowances in terms of outbreak and emergency response</li> </ul>	
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
Staff attrition reduced by 50%	<ul style="list-style-type: none"> <li>• % of staff leaving their positions</li> </ul>	<ul style="list-style-type: none"> <li>• HRH database</li> </ul>	
<b>SMART Objective</b>	<b>Year 1 (by December 2020)</b>	<b>Years 2 and 3 (by December 2022)</b>	<b>Years 4 and 5 (by December 2024)</b>
1.3 All appropriate One Health staff will have the capacity in Influenza case detection, investigation and reporting using the updated SOPs and guidelines to enhance rapid response.	<ul style="list-style-type: none"> <li>• Develop SOPs and guidelines on Pandemic Influenza case detection and management</li> <li>• Validation, print and distributed SOPs</li> </ul>	<ul style="list-style-type: none"> <li>• SOPs and guidelines will be available at all facilities by the end of 2020</li> <li>• Train all healthcare workers on the use of the SOPs</li> <li>• All staff will be using the available SOPs for Influenza detection and management</li> <li>• Conduct regular (quarterly) continuous supportive supervision and mentoring</li> <li>• Conduct annual refreshers trainings</li> </ul>	<ul style="list-style-type: none"> <li>• All staff will be able to report suspected Influenza cases</li> <li>• Appropriate data or surveillance system will be maintained and available for Influenza</li> <li>• Ensure adherence to policies, guidelines and SoPs</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
All healthcare workers trained in Influenza case detection, investigation and reporting	<ul style="list-style-type: none"> <li>• % of health care workers trained</li> </ul>	Training reports	

<b>Strategic Priority No.2: LOGISTICS &amp; SUPPLY</b>			
<b>'SMART' Priority Statement:</b> By 2024, there is a <b>specified adequate supply chain and logistics system</b> (described in an SOP) that will ensure <b>commodities and equipment for response are sufficient and available</b> at national, district and local levels, without disruption.			
<b>Linked to Success Factors: 5 to 7</b>			
<b>SMART Objective</b>	<b>Year 1 (by December 2020)</b>	<b>Years 2 and 3 (by December 2022)</b>	<b>Years 4 and 5 (by December 2024)</b>
2.1 A fund of \$ 1m USD available from domestic resources that can be quickly mobilized and utilized for commodities, equipment, transport, human labour costs and warehousing as soon the threat of Pandemic is declared.	<ul style="list-style-type: none"> <li>formal correspondence with MOF on the financial implication of Pandemic Influenza preparedness</li> </ul>	<ul style="list-style-type: none"> <li>Present estimates of financial needs to MOF to be included into the annual fiscal planning cycle.</li> </ul>	<ul style="list-style-type: none"> <li>Present estimates of financial needs to MOF to be included into the annual fiscal planning cycle.</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
A budget line is available in the government budget with a yearly allocation of \$1 m for outbreak response	<ul style="list-style-type: none"> <li>Budget line available</li> <li>Funding made available every year</li> </ul>	<ul style="list-style-type: none"> <li>Government approved budget</li> </ul>	
<b>SMART Objective</b>	<b>Year 1 (by December 2020)</b>	<b>Years 2 and 3 (by December 2022)</b>	<b>Years 4 and 5 (by December 2024)</b>
2.2 Establish an efficient Supply Chain scheme (SCM) to ensure the optimization of available resources.	<ul style="list-style-type: none"> <li>Assess the existing supply chain system. To determine HR needs for an efficient supply chain system. (procurement officers, store-keepers IT officer et).</li> <li>To assess existing material need for an efficient supply chain system and the material for Pandemic Influenza management.</li> <li>Link this objective with the current medical counter measures initiative</li> </ul>	<ul style="list-style-type: none"> <li>Recruit/train /deploy the right personnel based on needs identified during HR assessment</li> <li>Construct/rent/renovate wares houses based on identified needs during the assessment.</li> <li>Strengthen transportation system based on gaps/needs identified during assessment.</li> </ul>	<ul style="list-style-type: none"> <li>Construct/rent/renovate wares houses based on identified needs during the assessment.</li> <li>Strengthen transportation system based on gaps needs identified during assessment.</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
SCM strengthened to efficiently support outbreak response	<ul style="list-style-type: none"> <li>Report from the need assessment available</li> <li>% of gaps addressed to strengthen the system</li> </ul>	<ul style="list-style-type: none"> <li>SCM monitoring tool</li> </ul>	

SMART Objective	Year 1 (by December 2020)	Years 2 and 3 (by December 2022)	Years 4 and 5 (by December 2024)
2.3 Ensure procurement of the required quantity and specification of commodities and equipment for outbreak response	<ul style="list-style-type: none"> <li>Develop a list of commodities and equipment to be stockpiled as part of Pandemic Influenza preparedness</li> </ul>	<ul style="list-style-type: none"> <li>Conduct an assessment to determine the quantity and specification of medical and non-medical supplies needed for a specific period (3 months) for Pandemic Influenza management.</li> <li>Procure based on the identified need during the assessment</li> <li>Distribute the supplies to warehouses and facilities at the right time.</li> </ul>	<ul style="list-style-type: none"> <li>Procure based on the identified need during the assessment</li> <li>Distribute the supplies to warehouses and facilities at the right time.</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
Supplies required for 3 months response to Influenza Pandemic are identified and stockpiles are available	<ul style="list-style-type: none"> <li>List of basic commodities and equipment is finalized</li> <li>Quantities required for 3 months response are procured and deployed</li> </ul>	<ul style="list-style-type: none"> <li>Central and peripheral inventories</li> </ul>	

### Strategic Priority No.3: SURVEILLANCE & LABORATORY SYSTEM

**'SMART' Priority Statement:** By the end of 2024, there is an **integrated, robust surveillance and laboratory system** in order to promptly respond to Influenza Pandemics.

**Linked to Success Factors: 8 to 13**

SMART Objective	Year 1 (by December 2020)	Years 2 and 3 (by December 2022)	Years 4 and 5 (by December 2024)
3.1 Improve functional public health and animal laboratories system in terms of capacity building, accreditation, WASH, internet, electricity supply and bio-security (CPHRL)	<ul style="list-style-type: none"> <li>assessment of gap in laboratories for animal and human testing capacity (skill, reagents and equipment)</li> <li>assess human capacity, WASH, Internet, electricity and bio-security</li> <li>Develop report and share with all Ministries Department and Agencies</li> </ul>	<ul style="list-style-type: none"> <li>Develop guidelines and SOPs (WHO/OIE standards)</li> <li>Conduct trainings for both livestock and veterinary services division laboratory staff and human health laboratory staff</li> <li>Provide internet, WASH, and electricity facilities in laboratories</li> <li>Set up standard bio-security measures in laboratories</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate laboratory capacity for accreditation</li> <li>Gain accreditation</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
Public health and animal laboratory capacities for diagnosis and epidemiological surveillance of diseases with epidemic potential are available in SL.	<ul style="list-style-type: none"> <li>Assessment of existing capacities and gaps are completed.</li> <li>Guidelines and SOPs finalized and distributed</li> <li>% of laboratories with minimum requirements (internet, WASH, electricity)</li> </ul>	Periodic laboratory assessments	
SMART Objective	Year 1 (by December 2020)	Years 2 and 3 (by December 2022)	Years 4 and 5 (by December 2024)
3.2 Integrate active and passive human and animal health surveillance systems in the context of One Health by developing the reporting tools and platform and improving human resource expertise	<ul style="list-style-type: none"> <li>Assess both human and animal health surveillance system in terms of staff, reporting tools mobility and surveillance structure</li> <li>Develop reporting tools and</li> </ul>	<ul style="list-style-type: none"> <li>Conduct trainings for both health and livestock workers (all levels)</li> <li>Conduct Supportive Supervision and mentorship on a quarterly basis</li> </ul>	<ul style="list-style-type: none"> <li>Conduct refreshers training for both animal and human health workers at all levels</li> <li>Integrate both human and animal reporting on a single platform (DHIS2)</li> </ul>

	<ul style="list-style-type: none"> <li>platform</li> <li>Develop training guidelines for both animal and human at all levels</li> </ul>	<ul style="list-style-type: none"> <li>Provide mobility support for animal and human workers to enhance prompt response</li> <li>Conduct quarterly review meetings</li> </ul>	<ul style="list-style-type: none"> <li>Reporting on the one health platform (DHIS2)</li> <li>Conduct evaluation of the integrated surveillance system</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
<b>Increased functional integration of human and animal health surveillance</b>	<ul style="list-style-type: none"> <li>Guidelines on integrated surveillance available</li> <li>% of staff trained in integrated surveillance</li> <li>Publication of integrated surveillance reports</li> </ul>		
<b>SMART Objective</b>	<b>Year 1 (by December 2020)</b>	<b>Years 2 and 3 (by December 2022)</b>	<b>Years 4 and 5 (by December 2024)</b>
3.3 Improve regional laboratory capacities to confirm Influenza Pandemic in both human and animal. Trained technical personal that can conduct advance tests in both animals and human health (Kenema, Bo and Teko laboratories to level 3)	<ul style="list-style-type: none"> <li>Assess regional laboratory capacities in-terms of skills, equipment's, reagents, and testing for animal and human</li> <li>Assess WASH, electricity, internet, bio-security capacity in the regional laboratories</li> </ul>	<ul style="list-style-type: none"> <li>Develop guidelines and SOPs (WHO standards)</li> <li>Conduct trainings for both animal and human health laboratory staff</li> <li>Provide internet, WASH, and electricity facilities in laboratories</li> <li>Install bio-security measures to meet standards to bio-safety Level 3</li> <li>Provide Mobility for sample collection and transportation</li> <li>Conduct quarterly supportive supervision and mentorship</li> <li>Provide incentives for laboratory staff</li> </ul>	<ul style="list-style-type: none"> <li>Conduct refresher training on emergency response lab. staff</li> <li>Develop recommendation for government to recruit additional laboratory staff</li> <li>Evaluate regional labs. Capacity and documentation for upgrading to bio-safety level 3.</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
Laboratory capacities available to support Pandemic Influenza surveillance and response activities	<ul style="list-style-type: none"> <li>No. of laboratories performing Influenza diagnostics</li> <li>No. of staff trained</li> </ul>	Laboratory periodic assessments	

SMART Objective	Year 1 (by December 2020)	Years 2 and 3 (by December 2022)	Years 4 and 5 (by December 2024)
3.4 Establishment of Influenza sentinel sites in regional and district hospitals (public and private) in all 16 districts.	<ul style="list-style-type: none"> <li>Assess all Public &amp; Private hospital capacities in-terms of staff and patient flow to conduct sentinel surveillance</li> <li>Update reporting tools and guidelines for sentinel surveillance</li> </ul>	<ul style="list-style-type: none"> <li>Training of staff on Influenza sentinel surveillance</li> <li>Provide data collection tools, computers and specimen kits and consumables</li> <li>Provide fuel and allowance for collection and transportation of specimen</li> <li>Conduct quarterly review meetings</li> <li>Conduct monthly district supportive supervision to all reporting sites (DSO)</li> <li>Conduct quarterly supportive supervision to all reporting sites (NSOs)</li> <li>Integrate reporting system into the FLUNET and FLUID</li> </ul>	<ul style="list-style-type: none"> <li>Conduct in-process evaluation</li> <li>Conduct refresher training for staff</li> <li>Conduct final evaluation for reporting</li> <li>Plan to expand sentinel sites to Community Health Centres at chiefdom level</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
All districts participating regularly in Influenza sentinel site surveillance	<ul style="list-style-type: none"> <li>N. of districts participating</li> <li>% of reports received in time</li> </ul>	IDSR	

## Strategic Priority No.4: COORDINATION & COMMUNICATION

**'SMART' Priority Statement:** By 2024, an **effective communication mechanism** is in place at national, districts and community levels **linking with One Health** and other partners, enabling effective risk communication, health education and community sensitization which engages the public to prevent and control outbreaks. Also a **coordination mechanism** is in place to avoid duplication of effort, mobilize resources, identify weaknesses and strengths and that is capable of instigating improvements.

**Linked to Success Factors 14 to 18**

SMART Objective	Year 1 (by December 2020)	Years 2 and 3 (by December 2022)	Years 4 and 5 (by December 2024)
<b>COMMUNICATION</b> 4.1 Effectively engage the public to raise awareness of Pandemic Influenza and what to do in emergency by 2024	<ul style="list-style-type: none"> <li>Ensure that communication teams from the one health sectors are part of National Influenza planning group</li> <li>Map key stakeholders (NGOs, INGOs, CBO, CSO, Human / animal health workers, farmers, media, women, youths, teachers, trader union, driver union, bike riders, religious group, traditional leaders and healers etc.)</li> <li>Hold workshops with key stakeholders, traditional and community leaders, to brainstorm ideas for awareness raising activities</li> <li>Advocacy meeting with key stakeholders/ decision makers such as traditional and community leaders to get them to own the process</li> </ul>	<ul style="list-style-type: none"> <li>Continue advocacy meeting with key stakeholders/ decision makers such as traditional and community leaders to get them to own the process</li> <li>Develop communication plan and materials</li> <li>Conduct Community sensitization and awareness raising campaign through using/engaging the various communication channels (radio, TV, loudspeakers, IEC materials, text messages, social media)</li> <li>Conduct focus group discussion in various places such school, market place, hospitals, communities</li> </ul>	<ul style="list-style-type: none"> <li>Continue conduct Community sensitization and awareness raising campaign using the various communication channels ( radio, TV, loud speakers, IEC materials, text messages, social media)</li> <li>Conduct focus group discussion in various places such school, market places, hospitals, communities etc.</li> <li>Conduct Knowledge Attitude and Practice (KAP) survey</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
<b>Increased awareness in the population about seasonal and Pandemic Influenza</b>	<ul style="list-style-type: none"> <li>% of respondents listing correctly Influenza mode of transmission and simple preventive measures</li> <li></li> </ul>	Population surveys	

SMART Objective	Year 1 (by December 2020)	Years 2 and 3 (by December 2022)	Years 4 and 5 (by December 2024)
4.2 Communication mechanisms in place for risk communication to ensure that the public can work together with the Government to manage an Influenza Pandemic by 2024	<ul style="list-style-type: none"> <li>Develop communication strategies based the WHO outbreak guidelines (including messaging, factsheet, training manuals, SOPs, checklists) and linking with the one health platform</li> </ul>	<ul style="list-style-type: none"> <li>Conduct TOT for communication officers (Human and animal health) on risk factors and communication on containing Pandemic</li> <li>Training for key stakeholders</li> <li>Create communication platform (WhatsApp, CUG, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Refresher training</li> <li>Conduct KAP survey using a validated tool</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
A national risk communication strategy is available and implemented through trained personnel	<ul style="list-style-type: none"> <li>Risk communication strategy finalized and approved</li> <li>% of staff trained in risk communication for Pandemic Influenza</li> </ul>		
SMART Objective	Year 1 (by December 2020)	Years 2 and 3 (by December 2022)	Years 4 and 5 (by December 2024)
4.3 Ensure that the current cross-governmental coordination mechanisms are periodically reviewed to ensure that they are robust enough to respond to and Influenza Pandemic by 2024  (Note: there is a current mechanism in place as part of the NAPHS that will be periodically tested and reviewed)	<ul style="list-style-type: none"> <li>Reviewing the current cross-government coordination mechanism</li> <li><i>Ensure that policies, procedures and explicit agreements are in place to respond collectively</i></li> <li><i>Make recommendation for improvement</i></li> </ul>	<ul style="list-style-type: none"> <li>Start to implement recommendations</li> <li>Conducting regular coordination meeting to get feedbacks</li> </ul>	<ul style="list-style-type: none"> <li>Conclude implementation of the recommendations</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
Pandemic Influenza national response coordination mechanisms reviewed and upgraded to better respond to a Pandemic situation	<ul style="list-style-type: none"> <li>Existing coordination mechanisms reviewed, and TORs/SOPs modified (if required.)</li> </ul>		



**Strategic Priority No.5: CLINICAL MANAGEMENT & IPC**

**'SMART' Priority Statement:** By 2024, patients with Pandemic Influenza disease condition can be **treated in most appropriate, timely, and safe manner** in the right place (at home or hospital) by having appropriate drugs and treatment guidelines, by competent trained and qualified health personnel.  
**Linked to Success Factors: 19 to 21**

SMART Objective	Year 1 (by December 2020)	Years 2 and 3 (by December 2022)	Years 4 and 5 (by December 2024)
5.1 Strengthen existing protocols on IPC including, Hand hygiene, availability of clean water, soap, hand sanitizer, hand washing protocols with the training of all appropriate staff	<ul style="list-style-type: none"> <li>Develop treatment protocols</li> <li>Review the existing IPC protocols capturing the Influenza transmission chain</li> <li>Ensure power and running water facilities availability at prioritise health care facilities</li> <li>Regular supply of IPC commodities</li> <li>Test IPC reviewed protocols testing (simex).</li> </ul>	<ul style="list-style-type: none"> <li>Mentoring and coaching of IPC focal persons on IPC guidelines and Protocols</li> <li>Conduct radio/TV WASH education.</li> <li>Develop and print flyers and posters on handwashing practices</li> <li>Develop and print flyers and posters on airborne diseases control</li> </ul>	<ul style="list-style-type: none"> <li>Conduct training on IPC compliance</li> <li>Conduct impact assessment on the adapted IPC protocols of Influenza</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
Ensure that protocols on IPC include basic tools and practices to reduce the risk of Influenza transmission	<ul style="list-style-type: none"> <li>IPC protocols updated</li> <li>% of staff trained in IPC</li> </ul>		
SMART Objective	Year 1 (by December 2020)	Years 2 and 3 (by December 2022)	Years 4 and 5 (by December 2024)
5.2 Clear case definitions developed for Influenza that can be applied in all Health facilities to meet the IDSR guidelines.	<ul style="list-style-type: none"> <li>Develop background information of Influenza virus disease</li> <li>Spell out clearly the signs and symptoms of Influenza virus infection</li> <li>Conduct awareness-raising campaigns on the signs and symptoms Influenza virus infection</li> <li>Training of health care workers on the use of the case definition of Influenza virus infection</li> </ul>	<ul style="list-style-type: none"> <li>Organise social mobilisation awareness campaign on Influenza virus infection</li> <li>Assess compliance of the existing case definition of Influenza virus infection</li> </ul>	<ul style="list-style-type: none"> <li>Ensure compliance of case definition by health care workers</li> </ul>

Target 2024	Outcome indicators	Data source	
Updated case definitions for ILIs and SARIs are available and disseminated, and staff are trained	<ul style="list-style-type: none"> <li>Revised case definitions are available</li> <li>% of staff trained in case definition</li> </ul>		
SMART Objective	Year 1 (by December 2020)	Years 2 and 3 (by December 2022)	Years 4 and 5 (by December 2024)
5.3 Strengthen screening so that all patients presenting to any facility with flu-like symptoms must be screened for Influenza	<ul style="list-style-type: none"> <li>Develop standard checklist for Influenza viral disease</li> <li>Train triage nurses on the use of checklist</li> <li>Improve on the existing triage structure/equipment in all health care facilities</li> </ul>	<ul style="list-style-type: none"> <li>Ensure effective and proper screening of all patient to prevent missing cases of Influenza</li> </ul>	<ul style="list-style-type: none"> <li>Ensure effective monitoring of triage to prevent missing Influenza cases</li> </ul>
Target 2024	Outcome indicators	Data source	
Triage criteria for severe cases are defined and staff are trained	<ul style="list-style-type: none"> <li>Triage criteria are available</li> <li>% of staff trained</li> </ul>		
SMART Objective	Year 1 (by December 2020)	Years 2 and 3 (by December 2022)	Years 4 and 5 (by December 2024)
5.4 Standard clinical guidelines/treatment protocols to be available and utilized by all clinicians in all healthcare facilities.	<ul style="list-style-type: none"> <li>Develop treatment guideline for Influenza in line with WHO treatment protocols</li> </ul>	By December 2022 <ul style="list-style-type: none"> <li>Train health care clinicians on the developed protocols</li> </ul>	By December 2024 <ul style="list-style-type: none"> <li>Print and distribute the treatment protocols</li> <li>Enhance compliance by health workers of the protocols</li> </ul>
Target 2024	Outcome indicators	Data source	
Standard clinical guidelines for diagnosis and treatment of Influenza are available and used in all health facilities	<ul style="list-style-type: none"> <li>Standard treatment guidelines are developed and disseminated</li> <li>% of facilities where treatment guidelines are readily available</li> <li>% of staff trained</li> </ul>	<ul style="list-style-type: none"> <li>Health facilities supervisory visits and monitoring surveys</li> </ul>	

**Strategic Priority No.6: BORDER MANAGEMENT (POEs)**

**'SMART' Priority Statement:** By 2024, Sierra Leone has a **well-structured border management system** in place that is capable of **screening, detecting, preventing and protecting** its citizens from an Influenza Pandemic in line with IHR standards.

**Linked to Success Factor: 22 to 23**

SMART Objective	Year 1 (by December 2020)	Years 2 and 3 (by December 2022)	Years 4 and 5 (by December 2024)
6.1 Improve the capacity of existing PoEs to detect and respond to Influenza Pandemic through training and equipping of border control staff.	<ul style="list-style-type: none"> <li>Train all PoE staff on Influenza Pandemic preparedness and response.</li> <li>Provide logistical supplies such as Office equipment (8 tables, 8 chairs, 4 Printers, 4 laptop computers, A4 paper), mobility (4 vehicles &amp; 8 motorbikes) and medical supplies (PPEs, Vaccines, Yellow fever cards, First Aid kits, Thermometers, Wheel chairs, Stretchers).</li> <li>Provide support for quarterly monitoring and supervision of all PoE activities in 8 districts.</li> </ul>	<ul style="list-style-type: none"> <li>Refresher training of all PoE staff on Influenza Pandemic preparedness and response, IDSR and IHR.</li> <li>Provide medical supplies (PPEs, Vaccines, Yellow fever cards, First Aid kits, Thermometers, Wheel chairs, Stretchers).</li> <li>Advance training of 4 PoE staff in border management and Surveillance.</li> <li>Provide support for quarterly monitoring and supervision of all PoE activities in 8 districts.</li> </ul>	<ul style="list-style-type: none"> <li>Provide medical supplies (PPEs, Vaccines, Yellow fever cards, First Aid kits, Thermometers, Wheel chairs, Stretchers).</li> <li>Refresher training of all PoE staff on Influenza Pandemic preparedness and response, IDSR and IHR.</li> <li>Provide support for quarterly monitoring and supervision of all PoE activities in 8 districts.</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
All existing PoE will have received guidelines and training on Pandemic Influenza preparedness and response and have the required facilities and supplies to implement them in case of a Pandemic	<ul style="list-style-type: none"> <li>% of PoE with readily available guidelines</li> <li>% of staff trained</li> <li>% of PoE with the minimum required equipment and supplies</li> </ul>	<ul style="list-style-type: none"> <li>JEE</li> <li>PoE supervisory visits and monitoring surveys</li> </ul>	
SMART Objective	Year 1 (by December 2020)	Years 2 and 3 (by December 2022)	Years 4 and 5 (by December 2024)
6.2 Establish standard structures at the major crossing points with high traffic flow of animals, humans and goods to screen, detect, prevent and protect against Pandemic Influenza	<ul style="list-style-type: none"> <li>Identify and select sites for the construction of PoE structures in the five Districts</li> <li>Develop and finalize standard PoE construction plan for the five Districts</li> </ul>	<ul style="list-style-type: none"> <li>Construct eight standard PoE structures in the five Districts.</li> <li>Provide office equipment for eight PoEs</li> <li>Provide mobility for five districts (5 vehicles and 16 motorbikes)</li> </ul>	<ul style="list-style-type: none"> <li>Provide logistics and medical supplies for eight PoEs</li> <li>Refresher training of PoE staff in five Districts on Influenza preparedness and response, IDSR and IHR.</li> </ul>

Suggested locations: Kailahun (2), Pujehun(2), Kenema(2), Bombali (1) and Kono (1)		<ul style="list-style-type: none"> <li>• Provide logistics and medical supplies for eight PoEs</li> <li>• Handover of the eight PoEs to Government</li> <li>• Train and deploy PoE staff in the five Districts for Influenza preparedness and response, IDSR and IHR.</li> </ul>	
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
Identify major crossing points where screening will be required and provide the required training and support (logistic and medical supplies)	<ul style="list-style-type: none"> <li>• % of crossing points identified that have received training and support</li> </ul>		
<b>SMART Objective</b>	<b>Year 1 (by December 2020)</b>	<b>Years 2 and 3 (by December 2022)</b>	<b>Years 4 and 5 (by December 2024)</b>
6.3 Strengthen the use of the electronic database management systems at border crossing points to enhance proper planning and prompt public health actions.	<ul style="list-style-type: none"> <li>• Train PoE staff on electronic reporting system for 12 PoEs in 8 districts.</li> <li>• Provide laptops computers and iPads for electronic reporting in 8 districts (12 PoEs).</li> <li>• Provide Internet facility (Modems and MIFI) for reporting in 8 districts (12 PoEs).</li> <li>• Provide monthly subscription for the provision of Internet connectivity for 12 PoEs in 8 Districts.</li> </ul>	<ul style="list-style-type: none"> <li>• Provide monthly subscription for Internet connectivity for 12 PoEs in eight districts.</li> <li>• Refresher training of PoE staff on electronic reporting and data management system.</li> </ul>	<ul style="list-style-type: none"> <li>• Provide monthly subscription for Internet connectivity at 8 districts (12 PoEs).</li> <li>• Refresher training of PoE staff on electronic reporting system in 8 districts (12 PoEs).</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
All identified PoE are participating the electronic reporting system	<ul style="list-style-type: none"> <li>• % of identified PoE are participating the electronic reporting system</li> </ul>	<ul style="list-style-type: none"> <li>• JEE</li> <li>• PoE supervisory reports</li> </ul>	

<b>SMART Objective</b>	<b>Year 1 (by December 2020)</b>	<b>Years 2 and 3 (by December 2022)</b>	<b>Years 4 and 5 (by December 2024)</b>
6.4 Establish effective communication and collaboration systems at the border crossing points amongst neighbouring border countries and other agencies.	<ul style="list-style-type: none"> <li>• Provide support for monthly coordination and collaboration meetings at the PoEs for 8 districts.</li> <li>• Provide support for quarterly coordination and collaboration meetings with neighbouring counterparts for 8 districts.</li> </ul>	<ul style="list-style-type: none"> <li>• Provide support for monthly coordination and collaboration meetings at the PoEs for 8 districts.</li> <li>• Provide support for quarterly coordination and collaboration meetings with neighbouring counterparts for 8 districts.</li> </ul>	<ul style="list-style-type: none"> <li>• Provide support for monthly coordination and collaboration meetings at the PoEs for 8 districts.</li> <li>• Provide support for quarterly coordination and collaboration meetings with neighbouring counterparts for 8 districts.</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
Effective communication, collaboration and coordination with neighbouring countries and other agencies is established and functional.	<ul style="list-style-type: none"> <li>• N. of meeting with neighbouring counterparts</li> <li>• N. of meetings with agencies and partners</li> </ul>		

## Strategic Priority No.7: PREVENTION

**'SMART' Priority Statement:** By 2024, **90%** of the national population are **aware of and can practice recommended preventive behaviours**. There is **sufficient capacity to mount effective immunization campaigns**. There are **effective One Health structures in Districts** to prevent disease transmission from animal to human population.

**Linked to Success Factor:24 to 27**

SMART Objective	Year 1 (by December 2020)	Years 2 and 3 (by December 2022)	Years 4 and 5 (by December 2024)
7.1 Effective Flu vaccine delivery: Ensure effective preparations for sourcing, procurement, transportation, warehousing and prioritised distribution of flu vaccines	<ul style="list-style-type: none"> <li>System in specified</li> </ul>	<ul style="list-style-type: none"> <li>System in place</li> </ul>	
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
There is a procedure and system agreed in advance for the distribution of vaccines according the to the agreed priorities	<ul style="list-style-type: none"> <li>System in place for transportation, warehousing and prioritised distribution of the flu vaccine</li> </ul>		
SMART Objective	Year 1 (by December 2020)	Years 2 and 3 (by December 2022)	Years 4 and 5 (by December 2024)
7.2 Ensure 90% of the population have knowledge of common ways of transmission of Pandemic Influenza and can consistently demonstrate recommended preventive behaviours	<ul style="list-style-type: none"> <li>Develop advocacy plan for Pandemic Influenza and market it to stakeholders to create awareness and identify champions for behaviour change to reduce risk of PI</li> <li>Develop communication strategic plan for PI prevention and response and market it to stakeholders</li> <li>Develop and disseminate IEC materials in local vernacular languages on methods of transmission (such as social distancing, respiratory etiquette, hand hygiene, and household ventilation), symptoms, signs of PI and preventive behaviours</li> </ul>	<p>By December 2021</p> <ul style="list-style-type: none"> <li>Conduct training of health workers in IPC and Pandemic Influenza integrating PI in health promotion messaging at health facility level</li> <li>Conduct community sensitisation activities- radio shows, SMS, etc.</li> <li>Pandemic Influenza is fully integrated in supportive supervision</li> </ul> <p>By December 2022</p> <ul style="list-style-type: none"> <li>Health worker routinely to provide PI messages at health facilities and during outreach</li> <li>Conduct community and health facility KAP survey on PI awareness and prevalence of preventive behavioural practices</li> </ul>	<p>By December 2023</p> <ul style="list-style-type: none"> <li>Conduct health facility assessment to assess readiness of facilities for PI and compliance with IPC guidelines</li> <li>Review communication strategic plan based on findings of the KAP survey</li> <li>Pandemic Influenza to be fully integrated in supportive supervision</li> <li>Health worker routinely provide PI messages at health facilities and during outreach</li> </ul> <p>By December 2024</p> <ul style="list-style-type: none"> <li>Knowledge and practices related to PI is integrated in periodic surveys e.g. DHS</li> </ul>

<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
90% of the population can identify correctly Influenzas mode of transmission and basic preventive measures	<ul style="list-style-type: none"> <li>• % of people surveyed who can name correctly Influenza mode of transmission and at least three basic preventive measures</li> </ul>	<ul style="list-style-type: none"> <li>• Population survey</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
<b>SMART Objective</b>	<b>Year 1 (by December 2020)</b>	<b>Years 2 and 3 (by December 2022)</b>	<b>Years 4 and 5 (by December 2024)</b>
7.3 EPI to have trained personnel and cold chain capability to mount effective immunization campaigns for Pandemic Influenza (when vaccine available)	<ul style="list-style-type: none"> <li>• Identify and compute the potential high risk groups and health workers involved in direct clinical contact with patients, and those staff required to maintain essential functions who anticipate close contact with potentially ill people and target them for vaccination</li> <li>• Develop/adapt guidelines for EPI immunization</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct micro-planning for all vaccination logistics including cold chain facilities, vaccine delivery and distribution, human resource needs, waste handling, social mob.</li> <li>• Conduct EPI refresher trainings that integrate PI</li> <li>• National and district level conducts routine Integrated EPI supportive supervision that include PI</li> </ul>	<ul style="list-style-type: none"> <li>• National and district level conduct routine Integrated EPI supportive supervision that include PI</li> <li>• All PHUS maintain cold chain at facility level and outreach</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
Plans and collaborative activities are developed to ensure rapid and effective distribution of Pandemic Influenza vaccine to the priority groups when available.	<ul style="list-style-type: none"> <li>• Operational plans for Pandemic Influenza vaccine procurement, storage and distribution have been developed with EPI and partners</li> </ul>		
<b>SMART Objective</b>	<b>Year 1 (by December 2020)</b>	<b>Years 2 and 3 (by December 2022)</b>	<b>Years 4 and 5 (by December 2024)</b>
7.4 Provision of a single active district coordination structure to coordinate activities to detect and prevent disease transmission	<ul style="list-style-type: none"> <li>• Review of the TORs of one health district subcommittee to include PI prevention</li> <li>• Review district plans to harmonize activities between one health players for Pandemic Influenza</li> <li>• Estimate and mobilize resource</li> </ul>	<ul style="list-style-type: none"> <li>• One Health District subcommittee conduct quarterly one health coordination meetings including PI</li> <li>• One Health district subcommittee conduct quarterly combined one health field supervisory visits</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct quarterly one health coordination meetings</li> <li>• One health district subcommittee conduct quarterly combined one health field supervisory visits</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
A Pandemic Influenza preparedness and response coordination structure is available in all districts	<ul style="list-style-type: none"> <li>• % of districts with an established and functional Pandemic Influenza preparedness and response coordination structure</li> </ul>		

<b>Strategic Priority No.8: BUSINESS CONTINUITY</b>			
<p><b>'SMART' Priority Statement</b> By 2024, Sierra Leone has well-structured Business Continuity plans in place both in the health system and across government and key business sectors for the management and maintenance of essential services and activities, together with the ability to develop to build community resilience, should an Influenza Pandemic occur.</p> <p><b>Linked to Success Factors: 28 and 29</b></p>			
<b>SMART Objective</b>	<b>Year 1 (by December 2020)</b>	<b>Years 2 and 3 (by December 2022)</b>	<b>Years 4 and 5 (by December 2024)</b>
8.1 90% of health care services and other essential services and businesses have business continuity plans in place to continue operations in the event of Pandemic Influenza	<ul style="list-style-type: none"> <li>Develop business continuity plan template for health services and implement in 30% of all facilities</li> <li>Develop and roll out business continuity plans for the wider essential services (see Section 7.2)</li> </ul>	By December 2022 <ul style="list-style-type: none"> <li>60% of health services have business continuity plans in place</li> <li>50% of essential business and services (as per list in Section 7.2) have basic business continuity plans</li> </ul>	By December 2024 <ul style="list-style-type: none"> <li>90% of health services have business continuity plans in place and tested annually</li> <li>90% of essential business and services (as per list in Section 7.2) have basic business continuity plans</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
Standard business continuity plan templates are available for all essential public and private services that could be affected by absenteeism during a Pandemic	<ul style="list-style-type: none"> <li>% of required business continuity plans templates available</li> <li>No. of critical national services, including health that have developed Pandemic Influenza preparedness and response plans</li> </ul>		
<b>SMART Objective</b>	<b>Year 1 (by December 2020)</b>	<b>Years 2 and 3 (by December 2022)</b>	<b>Years 4 and 5 (by December 2024)</b>
8.2 75% of communities have resilience plans in place to use in the event of Pandemic Influenza	<ul style="list-style-type: none"> <li>Develop a community resilience planning template for use by District councils, and other local actors, supported by government and partners, and agree targeted populations</li> </ul>	By December 2022 <ul style="list-style-type: none"> <li>30% of targeted populations have community resilience plans in place</li> </ul>	By December 2024 <ul style="list-style-type: none"> <li>75% of targeted populations have community resilience plans in place</li> </ul>
<b>Target 2024</b>	<b>Outcome indicators</b>	<b>Data source</b>	
Standard community resilience plan templates are available for communities to use	<ul style="list-style-type: none"> <li>% of community resilience plans available</li> <li>% of community resilience plans tested</li> </ul>		



## Document coordinated and facilitated by a partnership of:

Health Focus GmbH  
Friedrich Ebert Str. 33  
14469 Potsdam  
Germany

T +49-331-2000 70  
F +49-331-2000 710  
E [info@health-focus.de](mailto:info@health-focus.de)  
W [www.health-focus.de](http://www.health-focus.de)

ManoCap Advisory  
Spur Loop  
Freetown  
Sierra Leone  
[www.manocap.com](http://www.manocap.com)