



Republic of Liberia

# Investment Plan for Building a Resilient Health System in Liberia

2015 to 2021

*in response to the Ebola virus disease outbreak of 2014 – 2015*





## Foreword

The Ebola virus disease (EVD) outbreak of 2014 and 2015 has led to serious challenges to the social and economic fabric of the people of Liberia. Our people have suffered pain, economic ruin and death as a result of an outbreak that was not of their own making. All Liberians have been affected by this epidemic, either directly through illness or death of family or friends or indirectly through inability to access health services and the social and economic losses resulting from the slowdown of our economy. We have come together to say: NEVER AGAIN shall we be affected in such a way.

As the outbreak wanes, we recognize the extensive efforts needed to get to and sustain zero EVD cases on the one hand and the need to transition our efforts towards restoration of normalcy that will not be what we knew, but rather one that has incorporated the lessons learnt during the outbreak. We have therefore taken lessons and recommendations from various assessments undertaken by the Ministry of Health and our partners in WHO, UNDP and USAID, among others, to map out how we as a country can stamp out the last embers of this epidemic, transition towards restoration of health services and rebuild our health system in a resilient manner such that it can effectively deliver services and manage similar shocks in the future.

Our goal is to build a resilient health system which restores the gains lost due to the EVD crisis and provides health security for the people of Liberia by reducing risks due to epidemics and other health threats and accelerates progress towards universal health coverage by improving access to safe and quality health services. We aim to ensure for Liberia, access to safe and quality health services, a robust health emergency risk management system, and an enabling environment that restores trust in the government's ability to provide services.

The priority health system investments identified in this plan that we have agreed upon, together with our partners, represent the best path towards building a strong and resilient health system that is able to serve Liberians. It provides clear guidance and focus to those willing and able to support the rebuilding of our health system so that we can achieve our goals of stamping out this and similar outbreaks from our society.

It is my hope that all of us interested in helping the people of Liberia rebuild their health system are able to channel our resources and focus around the priorities we have identified here. By working together, we will overcome this, and any other challenges

Her Excellency ELLEN JOHNSON SIRLEAF  
PRESIDENT OF THE REPUBLIC OF LIBERIA

## **Preface and acknowledgements**

This Investment Plan for Building a Resilient Health System in Liberia represents our collective effort arising from the experience of the devastating Ebola virus disease outbreak of 2014 and 2015. It highlights the government's priorities in rebuilding the health system to ensure it has the capacity, not only to provide the expected essential health services for the people of Liberia, but also to identify, and appropriately respond to future health threats of whatever form.

This Investment Plan is complementary to the National Health Plan (2011-2011). It focuses on the priority health system actions that need to be accomplished for the overall attainment of the health goals of Liberians. By achieving the goals set out in this Investment Plan, the vision and targets of the National Health Plan shall be achieved.

The Investment Plan represents the government's priorities; its elaboration has been led from the highest levels of the health sector. I acknowledge the leadership of our three Deputy Ministers – Yah M. Zolia, Deputy Minister for Planning, Research and Development, Bernice T. Dahn, Deputy Minister for Health Services and Chief Medical Officer, and Matthew Flomo, Deputy Minister for Administration – in leading the elaboration of this plan. I also recognize the valuable input from the technical teams, led by our Assistant Minister C. Sanford Wesseh, and the health financing secretariat team. Special thanks goes to the thematic group team leads assigned during this process for their hard work; Luke Bawo, Benedict C. Harris, Miatta Gbanya, Joseph Jimmy, Louise T. Mapleh, Vera Mussah, and Sarkoh Sayde.

We acknowledge the valuable inputs and guidance provided by the oversight teams including the Health Sector Coordinating Committee members. We also acknowledge the guidance and inputs from the Presidential Advisory Council on Ebola (PACE). Specifically, we appreciate the detailed, valuable and constructive guidance from Emmanuel Dolo, head of the PACE secretariat, and Deborah Malac, the United States Ambassador to Liberia, together with all the other members of the PACE who spent valuable time reviewing and providing feedback as the plan was developed.

Finally, I want to thank the development partners that provided technical assistance and support in the elaboration of this plan. Special thanks go to the WHO Representative, Alex Gasasira and his Deputy Emmanuel O. Musa for coordinating the technical support needed in the elaboration of the plan. Thanks go to the teams from USAID, CDC, UNFPA, UNICEF, UNMEER and the other agencies that took time to provide technical input into the design and focus of this plan.

Walter T. Gwenigale

MINISTER OF HEALTH

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## Abbreviations

AfDB	African Development Bank
AU	African Union
BEmOC	Basic Emergency Obstetric Care
BPHS	Basic Package of Health Services
CBIS	Community Based Information System
CEmOC	Comprehensive Emergency Obstetric Care
DfID	Department for International Development
DHIS	District Health Information System
EPHS	Essential Package of Health Services
EU	European Union
EVD	Ebola virus disease
EWARN	Early Warning and Alert Response Network
FMIS	Financial Management Information System
GAVI	Global Alliance for Vaccines and Immunization
GF	Global Fund
GoL	Government of Liberia
HFU	Health Financing Unit
HIV	Human Immunodeficiency Virus
HMIS	Health Management and Information System
HRH	Human Resources for Health
HSCC	Health Sector Coordinating Committee
IDB	Islamic Development Bank
IDSR	Integrated Disease Surveillance and Response
iHRIS	Integrated Human Resource Information System
IPC	Infection Prevention and Control
LHPS	Liberia Health and Population Survey
LMHRA	Liberia Medicines and Health Products Regulatory Authority
LMIS	Logistics Management and Information System
M&E	Monitoring and Evaluation
MAL	Malaria
MDG	Millennium Development Goal
MFDP	Ministry of Finance and Development Planning
MOH	Ministry of Health
NGO	Non-Governmental Organization
OOP	Out of Pocket
OPD	Outpatient Department
RN	Registered Nurse
TB	Tuberculosis
THE	Total Health Expenditure
UK	United Kingdom
UNHCR	United Nations High Commission for Refugees
UNMEER	United Nations Mission for Ebola Emergency Response
USAID	United States Agency for International Development
USD	United States Dollars
UN	United Nations
UNICEF	United Nations Children's Fund
UNMEER	United Nations Mission for Ebola Emergency Response
WAHO	West African Health Organization
WB	World Bank
WFP	World Food Program
WHO	World Health Organization

# EXECUTIVE SUMMARY

## Background

The Ebola Virus Disease (EVD) outbreak began in March 2014, and has had a devastating impact on the health system, the population at large and the Liberian economy. The health system was ill equipped to effectively respond to the epidemic with the necessary occupational health and safety and infection prevention and control (IPC) measures for safe and effective health services. As a result, health workers suffered a 30 times higher risk of infection compared to the general population. As of 8 April 2015, a total of 372 health workers had been infected, of whom 184 died. Pre-existing structural vulnerabilities included inadequate and poorly motivated health workers, insufficient and unsuitable infrastructure and equipment, weak supply chains and poor quality of care. This led to disruptions in the delivery of routine health services with health facility closures, fears and refusal of health workers to provide routine health services, and community distrust and fears. Coverage of life-saving maternal and child health interventions, in particular, declined dramatically. As the outbreak wanes, there is a need to rebuild the health system in a manner that restructures it, to ensure that it never again fails to respond effectively to similar threats. This Investment Plan for Building a Resilient Health System in Liberia, which complements the National Health Policy and Plan (2011-2021), is aimed at providing guidance towards this.

## Goal and Objectives

This Investment Plan aims to improve the health status of the Liberian population through **building a resilient health system** that contributes to the achievement of equitable health outcomes described in the National Health Policy and Plan. To this effect, it does not only restore the gains lost due to the EVD crisis, but also provides health security for the people of Liberia by reducing risks due to epidemics and other health threats, accelerates progress towards universal health coverage by **improving access to safe and quality health services**, and narrows the equity gap for the most vulnerable populations. Its specific objectives are to ensure for Liberia:

1. Universal access to safe and quality services through improved capacity of the health network for provision of safe, quality Essential Packages of Health Services.
2. A robust Health Emergency Risk Management System through building public health capacity for prevention, preparedness, alert and response for disease outbreaks and other health threats.
3. An enabling environment that restores trust in the health authorities' ability to provide services through community engagement in service delivery and utilization, improved leadership, governance and accountability at all levels.

The Investment Plan is designed to build on the "Getting to Zero" plan focused on rapidly ending the EVD outbreak, and the transition plan focused on restoring essential health services, repairing urgent health system vulnerabilities and transitioning response resources to recovery needs.

## High Priority Investment Areas

To achieve these objectives, the key investments in the Investment Plan will include:

- A. Build a fit-for-purpose productive and motivated health workforce that equitably and optimally delivers quality services, with priorities to:**
  - i. Implement an emergency hiring and management plan to place up to 4,132 government health workers onto the government's payroll (payroll clean up, rapid upskilling, redeployment).
  - ii. Accelerate sustainable needs-based recruitment and reduce attrition to address maldistribution of health workers and community health volunteers in underserved areas.
  - iii. Build innovative strategies to improve health worker motivation, accountability and performance.
  - iv. Ensure needs-based quality, efficient and effective health workforce production aligned to health sector needs at all levels of the system.
  - v. Evidence and needs based health workforce planning, management and development.
- B. Re-engineer the health infrastructure to conform to the population's needs for health services, with priorities to:**
  - i. Decommission Ebola Treatment Units and Community Care Centres and reposition them to health facilities.
  - ii. Extend existing facility infrastructure to ensure they are appropriate for epidemic management (e.g. triage).

- iii. Ensure all facilities have functional utilities (i.e. water, power).
- iv. Revise and implement infrastructure policy and standards to include triaging and isolation units.
- v. Establish robust management and maintenance systems for facilities, fleet and equipment and strengthen referral/transport network.
- vi. Accelerate completion of 17 unfinished health facilities.
- vii. Construct new required health facilities guided by norms.
- viii. Remodel all health facilities to ensure they have required physical infrastructure and utilities.
- ix. Upgrade three existing county hospitals to regional hospitals and 12 clinics to health centres.
- x. Restore and strengthen blood bank facilities and five regional laboratories.
- xi. Build adequate warehouse capacity for National Drug Service at national and county level.

**C. Strengthen epidemic preparedness, surveillance and response, including the expansion of the established surveillance and early warning and response system to ensure it is comprehensive enough to detect and respond to future health threats with priorities to:**

- i. Establish a National Public Health Institute including a Public Health Capacity Building Centre and an Emergency Operations Centre as core structures for the stewardship and implementation of the International Health Regulations 2005.c
- ii. Establish integrated surveillance, early warning and response structures full functional capacity.
- iii. Set up comprehensive surveillance integrated data reporting and action frameworks.
- iv. Improve capacity for public health laboratories and establish a bio-bank.

These three “big ticket” priorities will be complemented by scaling up additional system strategies to:

- a) Build adequate capacity for management of essential medicines and supplies at all levels.
- b) Restore and enhance service delivery systems to ensure quality of care for patients and a safe working environment for health staff.
- c) Strengthen the health information, research, and communication systems.
- d) Build on the strengthened community engagement to ensure households are continually aware of health threats, are practising appropriate healthy and health seeking behaviours.
- e) Expand capacity for leadership and governance to ensure effective guidance of health actions.
- f) Establish sustainable health financing systems that will ensure efficiency and equity in use of health resources.

**Cross-border collaboration**

Potential cross-border priority interventions include the surveillance and early warning system focusing on the Public Health Institute, Public Health Capacity Building Centre and Emergency Operations Centre, cross border surveillance activities, and public health laboratories. In addition, the planned improved capacities of pre-service and specialized post-graduate training institutions, and the IPC measures have cross-border potential.

**Inter-sectoral and cross-cutting issues:**

Due to the influence of socio-economic determinants on health, a mechanism for inter-sectoral dialogue and collaboration is paramount for a harmonized country plan for recovery and rebuilding. Other sectors influence health recovery, such as training and education, water and sanitation, social protection and gender equity, road access, and salary scales. On the other hand, the health sector can also provide essential support to other sectors, such as health promotion programmes and Infection Prevention and Control in schools.

**Costs and financing implications**

The indicative resource requirements of the Liberia’s Resilient Health System Investment Plan are approximately USD 489 million up to fiscal year (FY)<sup>1</sup> 2016/17 and an additional USD 1.21 billion for the remaining period up to FY 2021/22. This represents additional resources and the current financing for the health sector. Major cost drivers are activities related to human resources (36%), and capital investments (21%), followed by medical supplies and logistics (19%) and service delivery systems (18%). The sector intends to prioritize resource mobilization for the implementation of these priorities, building on existing resources for the EVD response in a manner that does not negatively impact the

<sup>1</sup> Government of Liberia fiscal year runs from 1 July until 30<sup>th</sup> June the following year.

“Getting to Zero” and transition phases. Available funding exists for some of the critical investments from the World Bank, USAID, Islamic Development Bank, CDC Foundation, and others.

## 1.0 Introduction

### 1.1 Background

The Ebola virus disease (EVD) outbreak, which began in December 2013 in the forest region of Guinea, in a town that borders Liberia and Sierra Leone, has led to widespread infection and deaths. As of 8 April 2015, the World Health Organization (WHO) reported a total of 25,515 suspected, probable, and confirmed cases (of which 9,862 were in Liberia) with 10,572 deaths (of which 4,408 were in Liberia). Health workers have been at 30 times greater risk than the general adult population with a total of 861 confirmed and probable cases of health worker infections (372 in Liberia) and 499 deaths (184 in Liberia).

The EVD outbreak has strained government finances, increased national deficits and resulted in drastic shortfalls in domestic revenue. These substantial impacts have rippled beyond the borders of the most affected countries and have carried an estimated regional economic cost of USD 0.5 – 6.2 billion and indicate the inextricable linkages between health system resilience, socio-economic development and growth, and global security. This creates an unprecedented impetus to address critical health system vulnerabilities to build resilience against future shocks, in tandem with broader multi-sector reconstruction and recovery.

Pre-existing structural vulnerabilities of the health system and limited health workforce capabilities hindered an effective response to the epidemic and may have contributed to its scale. Health facilities were ill-designed and poorly equipped to provide the necessary occupational and patient safety needed for the delivery of safe and effective health services. The EVD crisis devastated the already fragile healthcare system in Liberia. Health services were rendered dysfunctional with health facility closures, fears and refusal of health workers to provide routine health services, and community distrust and fears. Communities sought care from traditional, private and informal health care providers, driving up out-of-pocket expenditure on health; the number of outpatient visits in the public sector plummeted by 61%. Women and children were disproportionately affected by the crisis beyond EVD itself with declines of 43% in antenatal care, 38% in institutional deliveries, 45% in measles and 53% in DTP3 vaccinations between August and December 2014 compared to the same period in 2013.

Restoring the infrastructure to pre-EVD outbreak status will not be sufficient to guard against future public health emergencies. A resilient health system is the best economic insurance against losses from new or re-emerging communicable diseases. Addressing the inherent health system weakness will contribute to building resilience of the health system that not only seeks to redress the recent impacts of EVD on system functionality and service coverage, but also provides health security for the people of Liberia by reducing risks due to epidemics and other health threats, and accelerates progress towards universal health coverage by improving access to safe and quality health services.

The country has a 10-year National Health Plan (2011 – 2021). This Investment Plan for Building a Resilient Health System in Liberia will address the weaknesses described above so as to enable implementation of the National Health Plan and re-establish its trajectory towards achieving its goals and objectives. In addition, the country has defined an Agenda for Transformation, which provides the accountability framework between the Head of State and specific ministries. The Ministry of Health (MOH) has identified five priorities in this Agenda for Transformation<sup>2</sup>.

It is in this regard that this Investment Plan is being developed for advocacy to partners and donors for support to the national effort to build a resilient health system, in particular targeting the Spring Meeting of the World Bank Group and International Monetary Fund in April 2015.

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<sup>2</sup> These include: (1) Placement of 4,133 non GoL payroll HWs on the GoL Liberian dollar payroll; (2) construction of national drugs warehouse; (3) construction of 2 regional EPI cold-rooms; (4) procurement of drugs & medical supplies; and (5) restoration of routine health care services

## **1.2 Process**

The MOH had planned to review the National Health Plan (2011-2021), a process that was authorized to start in October 2014. A consultation on the process for the review was held with the Health Sector Coordination Committee (HSCC) on 19 November 2014 which gave it conditional approval. Soon thereafter, WHO, WAHO, WB and the EU organized a Global High Level Meeting in Geneva (10 and 11 December 2014) to which high level delegations from the EVD-affected West African countries were invited. The meeting outlined key priorities that included strengthening the health workforce; enhancing community trust, engagement, and ownership; strengthening core public health capacities for surveillance and response; and ensuring predictable supplies and coordinated supply chains.

Following the High Level Meeting in Geneva, a National Consultative Stakeholders' Meeting was held on 12 January 2015 to discuss and agree on the follow-up to the Geneva meeting. A concept note was developed and presented to Cabinet on 22 January 2015 where it was approved. Preparations for the desk review and field assessments started immediately. Tools were developed and teams of technical experts were trained to undertake a desk review (January and February 2015) and field assessments (February 2015) that would inform the development of this plan.

A MOH technical retreat was convened in Gbarnga, Bong County from 25 to 27 March 2015 to review and refine critical investment areas for building a resilient health system. During the retreat, an illustrative health system bottleneck analysis was undertaken to inform the prioritization of the strategic areas presented in the Investment Plan. Finally, a national stakeholder validation meeting was held from 6 to 8 April 2015 to reach consensus on the Investment Plan. Agreed revisions proposed by County Health Teams, civil society, private sector, regulators, legislators, other line Ministries and partners were incorporated into the final costed version of the Investment Plan.

## **2.0 Situation analysis**

### **2.1 Overview of the health system**

Liberia, a country located in West Africa, borders with Sierra Leone to its west, Guinea to its north and Ivory Coast to its east. It covers an area of 111,369 square kilometres and is home to about 4 million people. It is a low-income country with an estimated GDP per capita of USD 454 in 2013. Although the real GDP growth in 2014 had been projected at 5.8%, it was estimated to have declined to 2.5% or less by the end of 2014 due to the EVD crisis. The country is geographically divided into five regions and 15 counties, with populations ranging from 57,913 in Grand Kru County to 1,118,241 in Montserrado County.

Over a 14-year period (1989 to 2003), Liberia went through a civil war that left the health system dysfunctional with the destruction of the infrastructure and severe health workforce shortages. Since 2005, the country has made great effort to rebuild the health system through reform and introduction of the Basic Package of Health Services (BPHS) under the National Health Policy and Plan 2007 – 2011 and later the Essential Package of Health Services (EPHS) under the National Health Policy and Plan 2011 - 2021, all of which defined the type of services to be delivered at every level of care, inclusive of the minimum levels of resources required to provide the package, namely infrastructure, equipment, essential medicines and human resources (refer to Appendix 1 for a summary).

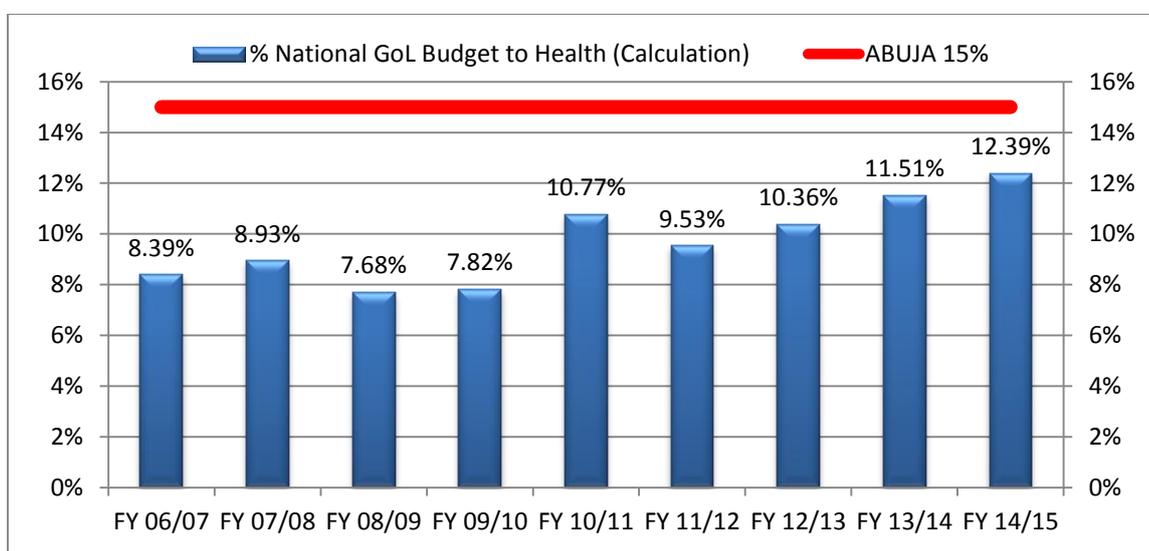
The main health policy document is the National Health and Social Welfare Policy 2011-2021. The strategy identifies priority areas including deconcentration, access to basic services, increasing the health workforce and expanding the package of health services. The strategy enables transformation from a highly centralized to a decentralized client-centred health care delivery system, focusing on the EPH. The service delivery system is pluralistic with a variety of direct service providers (government, faith-based organizations, local and international non-governmental organizations, private sector). The government abolished user fees in 2006 towards more equitable access to healthcare. However communities frequently reported informal payments as a common practice.

## Health Financing

The National Health and Social Welfare Financing Policy and Plan (NHSWFPP) 2011-2021 was developed with the goal of ensuring affordable health services and preventing catastrophic household costs. The NHSWFPP proposes a mix of health funding including sustainable government financing, predictable donor support, affordable user fees for selected services, mechanisms for risk pooling and appropriation from value-added tax. The NHSWFPP outlined a cost of USD 72.3 million in 2013 increasing to USD 129.9 million in 2021 for the management and provision of health services (not accounting inflation), equating to less than half of the estimated cost for the provision of the EPHS.

Total per capita health expenditure has increased rapidly in Liberia to USD 65 (2011/12) and is now slightly higher than the average for West and Central African countries. The appropriation to the health sector from the Government of Liberia (GoL) more than tripled from USD 18.7 million in FY 2007/08 to USD 63 million in FY 2014/15. Liberia has yet to meet the Abuja target of “allocating at least 15% of their annual budget to improve the health sector” (WHO, 2011, p. 1) as the GoL most recently allocated its highest share of the budget towards the health sector at 12.36% (MFDP, 2015): see Figure 1.<sup>3</sup> Whilst appropriation increased, allotment reduced between financial years 2012/2013 and 2013/2014; see gap between appropriations and allotments in Figure 2 and Figure 7 below.

**Figure 1: Trends in national GoL budget allocation to health**

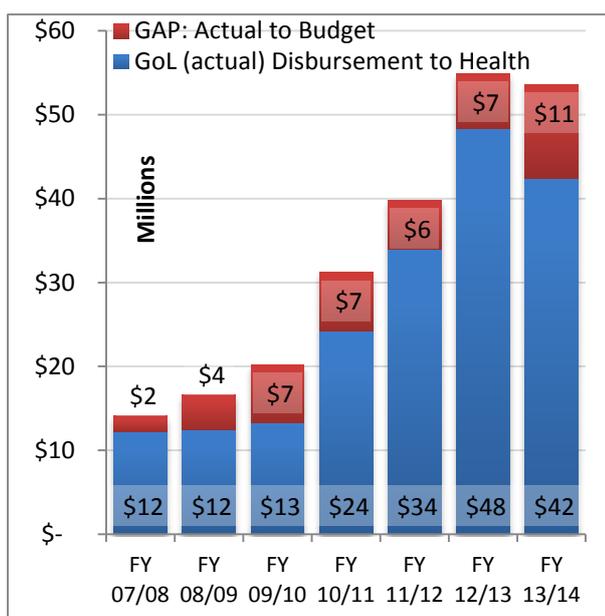


Sources: (MOF, 2008); (MOF, 2009); (MOF, 2010); (MOF, 2011); (MOF, 2013a); (MOF, 2013b); (MOF, 2013c); (MFDP, 2015)

Out-of-pocket expenditure accounted for 51% (NHA 2012).. Total Health Expenditure (THE) includes government, donor and private sector investments into health, covering both capital and other recurrent and non-recurrent expenditure. Evidence contained in the World Health Report 2010 shows that where out-of-pocket payment as a percentage of total health expenditure is more than 20%, the risk of catastrophic expenditure is significant.

<sup>3</sup> Diagram from Health Financing Unit at Ministry of Health. The data is based on Ministry of Finance & Development Planning Budget Reports available at [www.mfdp.gov.lr](http://www.mfdp.gov.lr)

**Figure 2: Allotment versus Disbursements of Funds from MFDP to MOH**

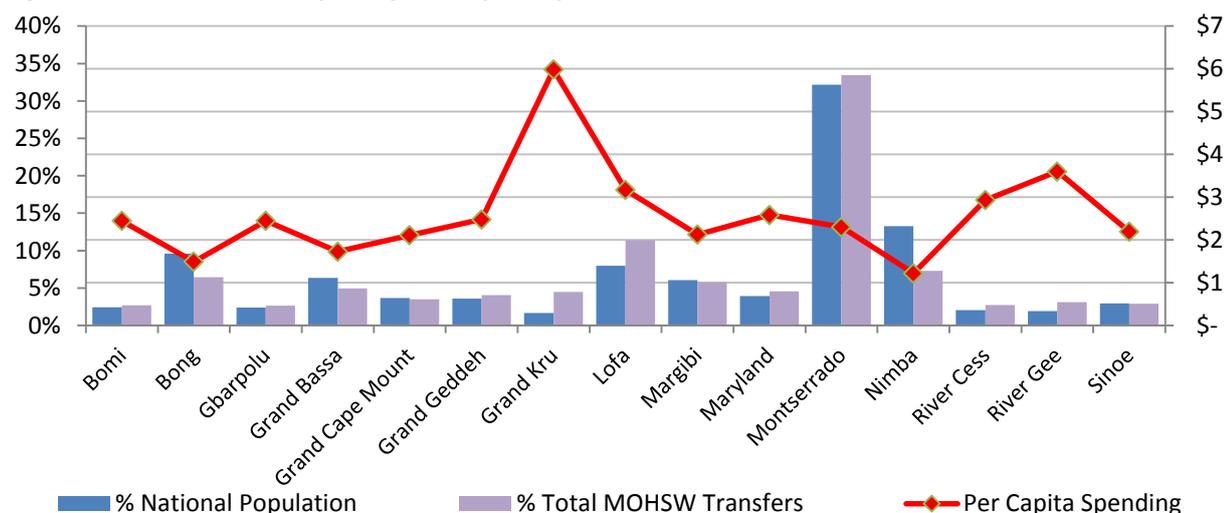


Donor support increased by USD 30 million between 2007/08 to FY 2011/12, not accounting for inflation, and external resources including budget support<sup>4</sup> and direct investments into the Ministry of Health<sup>5</sup> accounted for 33% of THE FY 2011/12. In addition, there is a significant amount of in-kind support provided to the country by numerous international technical agencies. Most of the funding has been channelled through vertical programs at the neglect of core systems essential to effective service delivery, with 50% of overseas development assistance in 2012 spent on Millennium Development Goal Six (WHO, 2012), which is focused on the control of HIV/AIDS, tuberculosis, malaria and other diseases.

Resource allocation to counties is based on historical trends rather than needs. Neither the Ministry of Finance,

Development and Planning nor the MOH apply a resource allocation formula for equitable financing; Figure 3 highlights the disconnect between need and recent allocations to counties.

**Figure 3: Distribution of MOH spending (USD) by county (2013/2014)**



### Health Infrastructure

The total number of health facilities in the country has increased from 618 in 2010 to 725 in 2014. This corresponds with one health facility for 5,500 people. In 2014, there were 35 hospitals, 51 health centres, 639 clinics and 137 pharmacies. Overall, 22% of the health facilities were private-for-profit, of which nine out of ten were located in Montserrado and Margibi Counties. Facility density ranged from 1.0 per 10,000 population in Bong County to 2.9 in Sinoe County. Table 1 provides more details.

<sup>4</sup> The European Union contributed the largest share of budget support towards the health sector in FY 11/12.

<sup>5</sup> Direct funding into the health sector included recurrent investments made by the Pool Fund (France, Ireland, Switzerland, UK, UNICEF and UNHCR), Global Fund, USAID through FARA and the RBHS programs and GAVI.

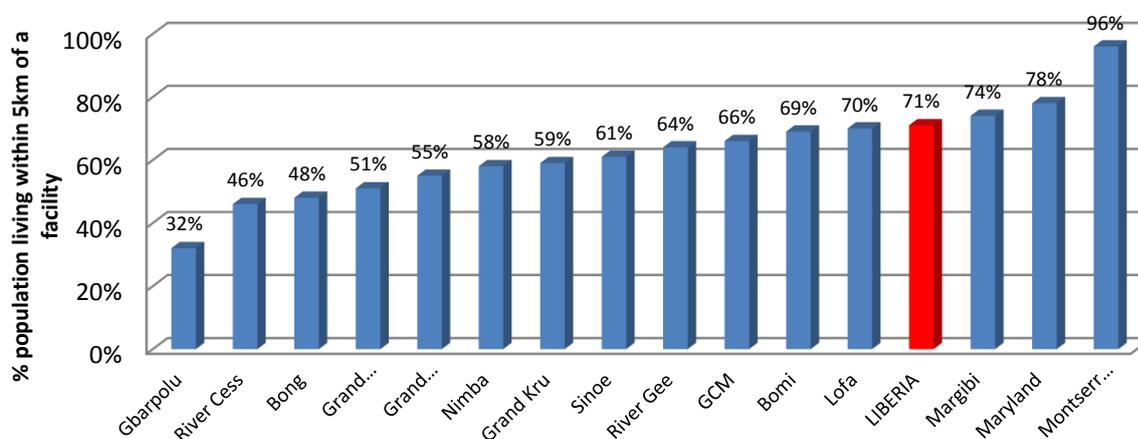
**Table 1: Facilities by county and facility density**

County	2015 population projection	Health facility per county	Facility density per 10,000 pop
Bomi	97,291	24	2.5
Bong	385,701	39	1.01
Gbarpolu	96,446	14	1.45
Grand Bassa	256,408	29	1.13
Grand Cape Mount	146,975	32	2.18
Grand Gedeh	144,872	18	1.24
Grand Kru	66,982	17	2.54
Lofa	320,218	56	1.75
Margibi	242,795	33	1.36
Maryland	157,225	24	1.53
Montserrado	1,293,349	240	1.86
Nimba	534,376	62	1.2
River Gee	77,248	17	2.2
Rivercess	82,707	18	2.2
Sinoe	117,813	33	2.8
<b>Total</b>	<b>4,020,406</b>	<b>656</b>	<b>1.63</b>

In addition to the varied facility distribution, there are challenges relating to facility functionality. From the 2014/15 health facility assessment, 13% of all facilities did not have access to safe water, 43% had no functional incinerators, while 45% did not have a primary power source for emergency lighting. This significantly limits the readiness of facilities to provide the health services required in the EPHS.

The population living within 5 kilometres of a health facility is 71% for the country as a whole. However, there are significant variations across counties: ranging from 32% in Gbarpolu to 96% in Montserrado (see Figure 4 below).

**Figure 4: Percent population living within 5 kilometres of a health facility by county**



### Health Workforce

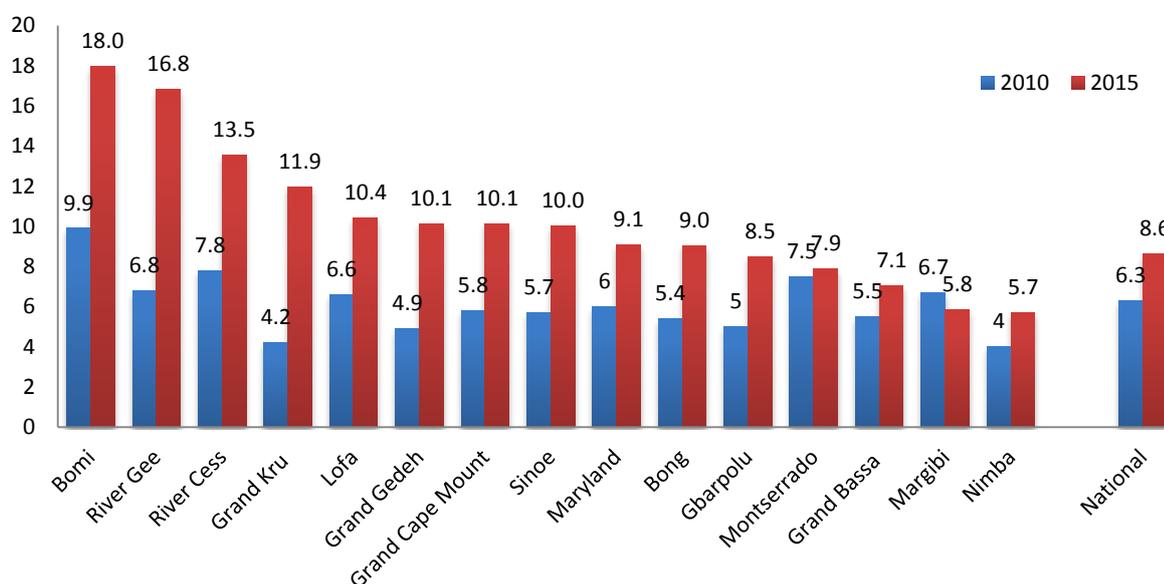
Recovery and resilience is at threat by critical health sector labour market failures: (1) 41% (4,132/10,052) of government health workers are not on the payroll which precipitated two health worker strikes over past year (see Table 2); (2) workforce model is not fit for purpose with skills gaps and inequitable distribution; (3) disincentives to performance and weak regulation of workforce production and practice; (4) workforce attrition; (5) underperforming and poor alignment of production pipelines to needs. The MOH Human Resources for Health (HRH) functions are fragmented across three units centrally with weaknesses at the county level.

**Table 2: County distribution of health workforce based on payroll status (February 2015)**

County	Not on GOL payroll	On GOL payroll	Total	% of staff not on payroll
Bomi	217	311	528	41%
Bong	339	415	754	45%
Cape Mount	224	228	452	50%
Gbarpolu	121	140	261	46%
Grand Bassa	243	258	501	49%
Grand Gedeh	434	236	670	65%
Grand Kru	140	179	319	44%
Lofa	449	356	805	56%
Margibi	151	225	376	40%
Maryland	302	164	466	65%
Montserrat	595	2505	3100	19%
Nimba	204	448	652	31%
River Gee	257	128	385	67%
River Cess	198	142	340	58%
Sinoe	258	185	443	58%
<b>Total</b>	<b>4132</b>	<b>5920</b>	<b>10052</b>	<b>41%</b>

There has been a 37% increase in the density of core health professionals between 2010 and 2015 from 6.3 to 8.6 per 10,000 population (data source: 2010 HRH Census, February 2015 MOH Personnel List, HMIS population estimates). The public health workforce included 117 physicians (0.03 per 1,000 population), 436 physician assistants (0.08 per 1,000 pop), 2,137 nurses in both RN and LPN categories (0.4 per 1,000 pop), and 659 midwives (0.12 per 1,000 pop). This presented a 30% increase for physicians and a 50-60% increase for the other three core health professionals since 2009. Maldistribution<sup>6</sup> across levels of care, roles and counties remains a major challenge. No complete data is currently available on the private sector. Figure 5 shows the health worker density by county in 2014 and 2015.

**Figure 5: Core health professionals per 10,000 population by County (2010 vs 2015)**

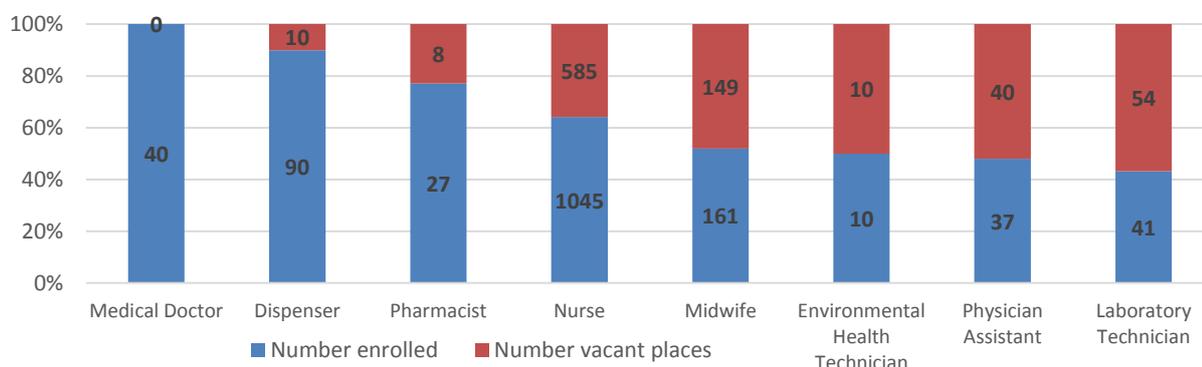


Many pre-service education institutions have enrolled students at full capacity. However a number of programs have 50% or lower capacity filled; see Figure 6. For the year 2015, this may be due in part to disruptions over the past school year. There is an absence of programs to train specialists for service delivery, health managers, logisticians, field epidemiologists and other cadres that are critical to the health system. Quality of education is variable and quality

<sup>6</sup>Workforce Optimization Analysis in 2010

improvement and regulation are limited. The field assessment in early 2015 identified behaviours of health workers that require further investigation such as unethical behaviour, disrespect, and refusal to provide services.

**Figure 6: Pre-service education enrolment capacity (2015)**



According to a 2013 mapping exercise, there were 8,052 community health volunteers including 3,727 general community health volunteers (gCHVs), 2,856 Trained Traditional Midwives (TTMs), 586 Traditional Midwives (TMs), 238 Household Health Promoters (HHPs), and 645 Community-Directed Distributors (CDDs). The EVD outbreak mobilized Environmental Health Technicians and CHVs who played a critical role in strengthening community engagement and improving environmental and community health in underserved areas. The 2013 assessment report highlighted inconsistent training levels, lack of consistent availability of equipment and commodities and found that gCHVs were involved in the delivery of health services such as the integrated community case management of diarrhoea, pneumonia and malaria, health and hygiene promotion, social mobilization, directly observed therapy for tuberculosis, and also provided support to the vertical program activities. However, most of the gCHV projects were partner-led with minimal support from the county and district health teams.

### **Governance**

The country defined a decentralization policy in 2008 which included capacity building for management of health services at the county and district levels. The implementation was slow, with many of the decentralized units still having generally insufficient capacity for the overall coordination and management of services. A functional analysis of the MOH system in 2012 recommended strengthening of county and district health systems to support the operationalization of the decentralization policy. The field assessment report from early 2015 recommended the same after finding similar challenges. However, with regard to partner coordination, governance and accountability, some improvements were noted.

### **Supply Chain Management**

The GoL has challenges in ensuring an appropriate supply chain for the management of health products and technologies. In its 2007-2010 National Health Strategy, the MOH noted that efficient procurement and distributions systems are vital to the provision of the BPHS. However, factors such as limited road infrastructure, unsuitable storage, limited warehousing capacity, inventory and warehouse management practices, and limited information sharing have led to frequent stock-outs of commodities, uncertain drug quality, and a general lack of confidence. This lack of confidence further undermines the health system as programs see no alternative other than managing their own individual supply chains. This fragmentation adds to the burden on the national system by adding unnecessary, duplicative costs while also contributing to lack of visibility, misallocation of resources, misalignment of supply and demand and general underperformance.

The National Drug Service (NDS) has been found to be deficient in asset management, storage capacity, supply management practices, appropriate quantity and quality of trained staff and unclear legal status. At county level,

medical supplies face others constraint such as inadequate storage space leading to the use of suboptimal spaces which includes small rooms, verandas and corridors. Warehouse facilities are understaffed and lack necessary equipment to run daily activities. There is no continuous and uninterrupted power supply for most facilities. None of the counties has adequate cold chain facilities; in most cases they use hospital facilities which are already overburdened. Air conditioned facilities are not adequate and in some instances are not available. Last mile distribution is a big challenge due to poor road conditions (only about 10% of the roads to county headquarters are paved).<sup>7</sup>

### ***Health Information System***

Health information systems were in the process of being strengthened before the EVD outbreak. There are different, and parallel systems for health information that are not connected or interoperable. Information collected from these parallel systems is not always shared with government which limits its ability to make informed decisions. The completeness of DHIS reporting rates was good prior to the EVD crisis. On average, 80% of monthly reports were received from health facilities, both public and private, during 2012-2013 (n=659 facilities). If Montserrado County, which is home to most private facilities, is excluded, reporting rates were well over 90%. However, the vital statistics system is still in its infancy, with low levels of birth and death registration. The surveillance and early warning system was weak, with limited capacity to detect and respond appropriately to events. Liberia is still in the process of adopting the International Health Regulations. Furthermore, the existing HMIS has not yet developed its component to capture the activities implemented at community levels by key stakeholders.

### ***Service Delivery***

The service delivery systems were already weak before the EVD outbreak. Community interventions and services were not well coordinated with many vertical efforts ongoing. As a result, community engagement and its linkages with the health service delivery system was weak. There were limited efforts towards IPC and general improvement of quality of care. Laboratory and diagnostic services in facilities were limited in scope and national reference laboratories to support facility laboratory services were inadequate, as seen in the delays with confirmation of epidemic diseases.

In spite of these system challenges, Liberia had made some progress in addressing its health challenges, with achievement of its MDG 4 targets by 2012. While there are still challenges, particularly in maternal mortality, some key outcomes have shown improvements such as skilled birth attendance (61.6% in 2013, from 40% in 2007). However, HMIS data has shown reversals in the gains made in maternal and child health interventions such as ANC, skilled deliveries and immunizations since the EVD outbreak.

## **2.2 Health system factors facilitating the EVD outbreak**

The EVD outbreak unmasked the inherent weaknesses in the system which in part facilitated the spread of the outbreak. Figure 7 shows the budget allocation and expenditures of the health sector compared to the estimated cost of implementing the EPHS. It is clear that the budgeted funding to the sector from Government in 2013 and 2014 was about USD 60 million and expenditures for the same period were less than USD 50 million, as compared to the amounts of over USD 200 million per year for the same period. This under-funding of the EPHS (approximately 25%) meant that it was not possible to put in place most of the health system building blocks required for an effective delivery of health services.

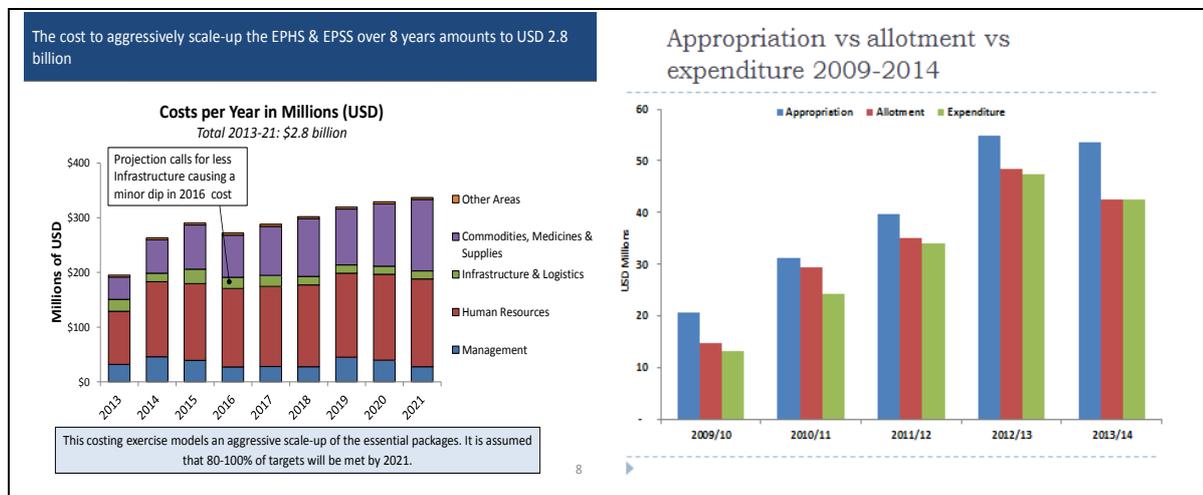
The data and surveillance system was not robust enough to detect the outbreak in time for its early interruption. The measures for preparedness and response were equally not up to the task with inadequate coordination within national authorities on emergency preparedness and response. Thus, the incident management and command mechanisms were not functioning satisfactorily. Further, the delays in de-concentration or decentralization of the health system

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<sup>7</sup>SMCU/UNICEF county depot capacity assessment report –December 2014.

limited the ability of the county and district health teams to respond in a timely manner. The laboratory system in the country at the outset of the outbreak could not diagnose EVD which was a weak link in response capabilities. Contact tracing was often delayed or not done, resulting in multiple infections.

**Figure 7: Estimated Cost of EPHS versus Sector Appropriation and Expenditure**



As EVD was unknown in the country, the index of suspicion was low which delayed detection of the outbreak. This was compounded by the fact the health care providers did not have any experience in the clinical management of the disease which may have contributed to the high case fatality rate, nosocomial infections and health worker infections. The possible mistrust in the aftermath of the war limited community engagement which is key to containing such an outbreak. The burial traditions of the population which involved handling and washing bodies of the deceased persons increased the risk of being infected. Indeed, one of the key lessons from the epidemic is the need to have strong social capital, to engage communities in the planning and delivery of health services, and to integrate risk communication and social mobilization into health systems strengthening.

The situation was made more precarious by the severe shortages of qualified health workers, combined with poor working conditions and uncoordinated, fragmented in-service training not linked to staff development plan(s) based on capacity/training needs assessment. Infrastructure, logistics, health information, including surveillance, governance and drug supply systems were limited. Health facility were poorly designed and ill equipped with adequate waste management and infection prevention and control measures to ensure occupational safety and patient safety. In addition, the government-led national procurement systems were fragile due to the development of parallel disease-specific procurement systems with no real investment in a national system. Despite a substantial increase in external aid (contributing to almost 70% of public health expenditures) a large proportion of those resources were targeted towards Millennium Development Goal Six (HIV/AIDS, tuberculosis and malaria), leaving overall development of health systems relatively neglected.

Another important factor that contributed to the widespread nature of the EVD outbreak was the poor quality of the health and sanitation services in the peri-urban and slum areas. While the frequent travel between the peri-urban/urban and rural areas of Liberia is well-known, the extent to which this would accelerate the transmission of the Ebola virus was underestimated. Moreover, community engagement for health in urban/peri-urban areas was an underdeveloped part of the health system which led to a prolongation of the epidemic. This was distinct Ebola outbreaks in other African countries which had been limited to rural areas.

Finally, there was not sufficient cross-border information-sharing and coordination on surveillance, early warning and response systems prior to the EVD outbreak. This deficiency led to a delay in the detection and management of the outbreak in the first few months.

## 2.3 EVD effects on the health system and services

### 2.3.1 Effects on health services

The EVD outbreak led to significant declines in utilization of health services from August to December 2014 compared to the same period in 2012 and 2013. These declines were partly due to temporary closures of health facilities, and partly because of lower attendance due to the community's mistrust of the health system. Those who made it to health facilities they were often shunned and were not be attended, even women in labour, because of the fear of Ebola; some even died as a result. With limited access to public sector health facilities where services were normally provided free, out-of-pocket spending increased due to use of alternative services, further limiting access to services. The resultant increased morbidity and mortality reversed the gains that had been earlier made.

Outpatient visits reduced by 61% for Liberia, and 51% if Montserrado is excluded. The declines in OPD attendance were observed in all counties and were largest in Montserrado, Margibi, Bomi and Grand Cape Mount (Figure 8). These are also the counties with the highest cumulative EVD cases. Similar reductions were observed in maternal care and immunization attendance (Figure 9). The declines in the first antenatal care visit, institutional deliveries, measles and DTP3 vaccinations, were slightly smaller than for OPD visits: 43%, 38%, 45% and 53% respectively. The largest reduction was observed in August. However, measles vaccinations increased considerably in December, as a result of an accelerated campaign.

Figure 8: National outpatient utilization trends

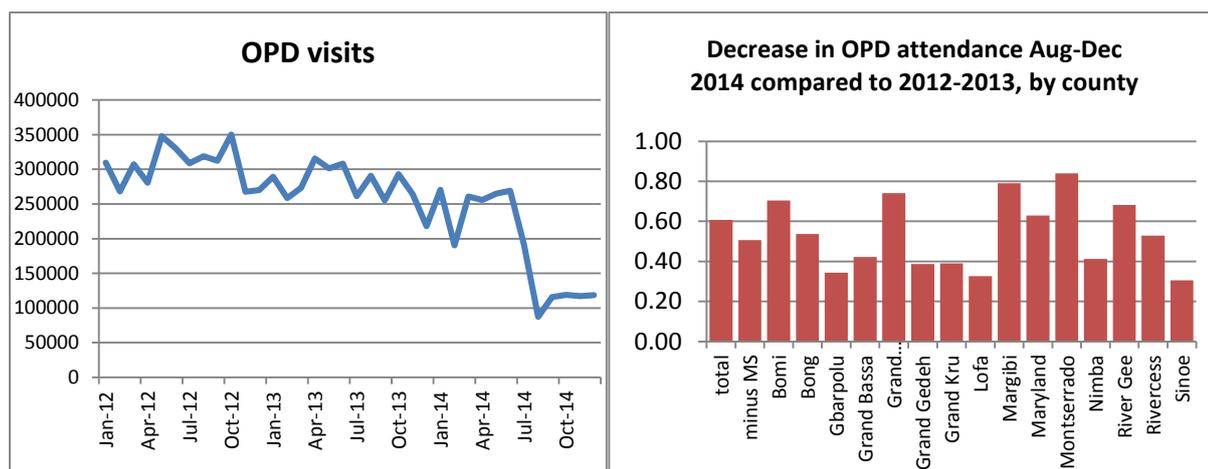
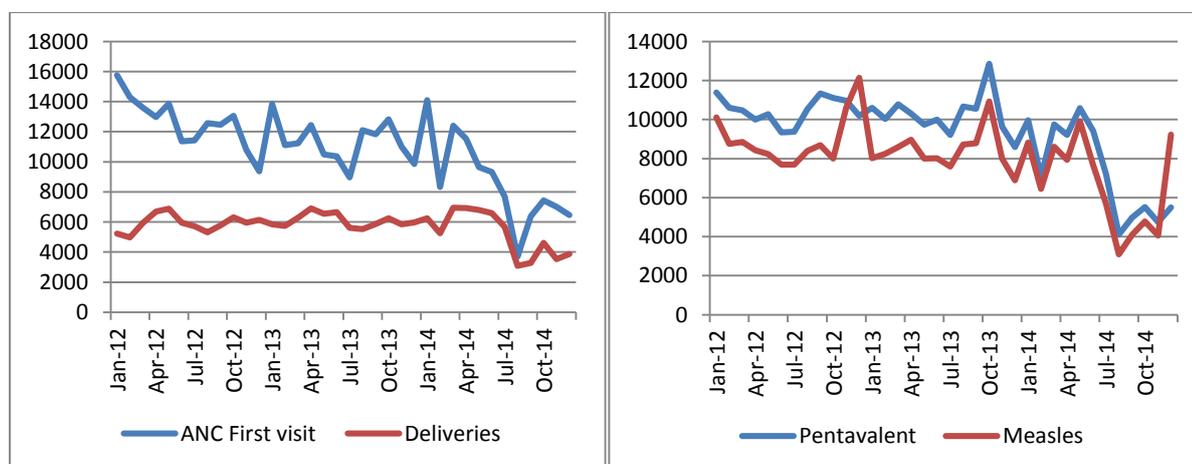


Figure 9: Utilization trends for key maternal and child health interventions



### 2.3.2 Effects on the health system

The EVD outbreak negatively affected all aspects of the health system. A few highlights are provided below.

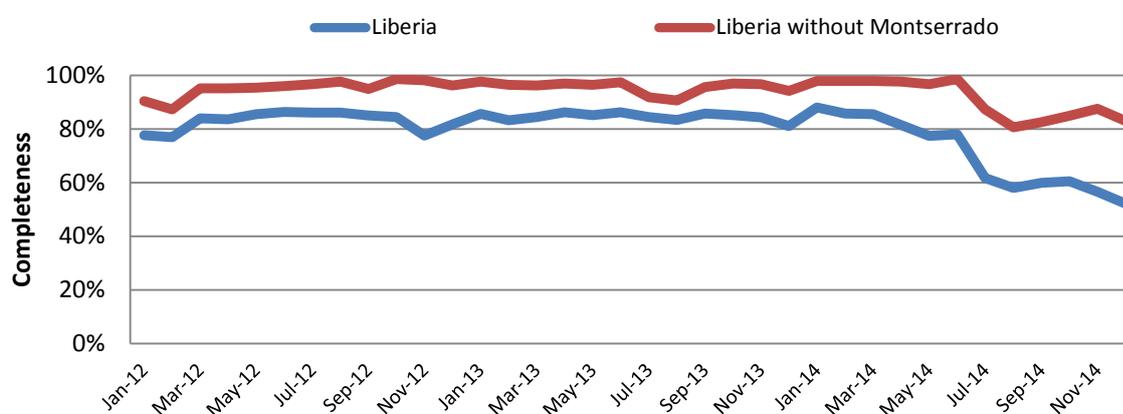
#### **Health workforce**

As of 8 April 2015, 184 health workers had died from EVD, out of 372 cases. These numbers include all types of workers in health facilities. The total number of health workers, all types, in the iHRIS database is about 11,000. Therefore, 3.4% of health workers developed EVD and 1.6% died from Ebola. Preliminary analysis indicates that health workers have been at a 30 times greater risk of EVD than the general adult population.

#### **Health information**

During the second half of 2014, the DHIS reporting rates for routine health information fell but remained above 80% in most counties, except in Montserrado and Margibi counties as shown in Figure 9 below.

**Figure 10: Outpatient / inpatient morbidity and mortality reporting trends**



#### **Health Products and Technologies**

The country experienced failure in the supply chain management system, resulting in health facilities experiencing shortages of essential medicines, thus allowing the proliferation of sub-standard, counterfeited medicines. The existing supply chain was not robust enough to integrate procurement, storage and distribution of emergency supplies, at the same time as maintaining routine procurement storage and distribution of essential medicines and health supplies. All this together with inadequate and poor technology and diagnostic support, in many instances, the health facilities were either rendered dysfunctional and in some cases were closed/abandoned.

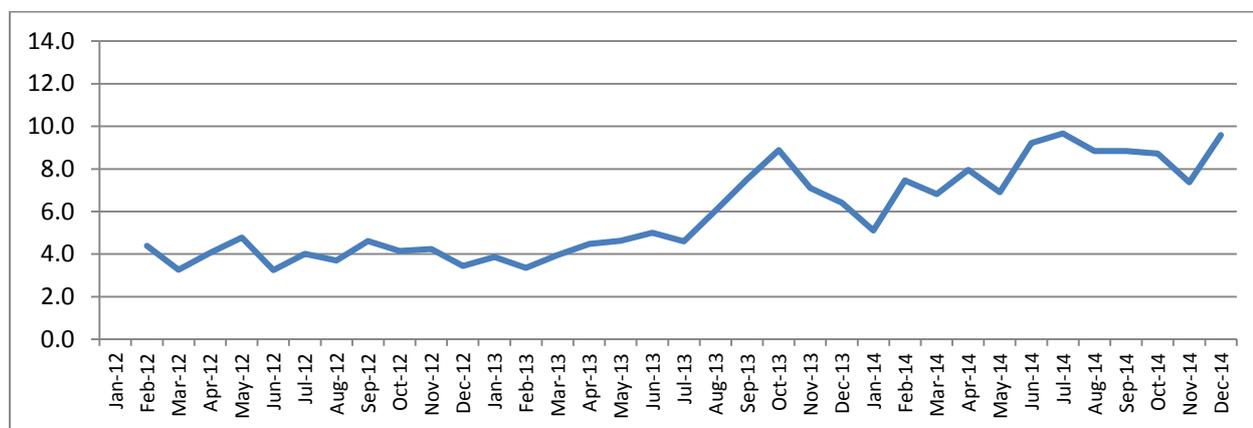
Based on 12 self-reported tracer medicines and vaccines, stock-outs increased gradually, doubling to an average of 9% during the second half of 2014 (Figure 11). Stock-outs were highest in counties in the southern and eastern Liberia (Sinoe, Maryland, Rivercess, Grand Kru, and Grand Bassa) which were not as adversely affected by the EVD crisis.<sup>8</sup>

Finally, the EVD outbreak has increased pressure on an already fragile supply chain and pharmaceutical policy framework leading to an increase in volume and quantity of pharmaceutical products circulating in the national market. Most of the medicines and supplies were brought into the country as donations. Without adequate oversight on import registration and with weak regulation by the Liberia Medicines and Health Products Regulatory Authority (LMHRA), this further constrained the supply chain system. As a result, multiple parallel supply chain systems (importation, storage and distribution) were created, adding burden to the already fragile supply chain system. Furthermore, the storage capacity of the National Drugs Service (NDS) and county depots has been stretched to critical levels, impacting the already fragile storage conditions. Due to uncoordinated donations and the disruption of health services during the EVD

<sup>8</sup> The quality of the self-reported stock outs has not yet been verified through an independent facility survey.

outbreak, the country has large volumes of expired drugs that need to be properly destroyed. The weak regulation of pharmaceutical products and supplies has also facilitated the importation of counterfeit medicines.

**Figure 11: Stock out rate by month, for tracer drugs & commodities**



### **Governance**

The unprecedented nature of the Ebola outbreak with the high case fatality rate diverted almost all of the health sector’s attention to Ebola surveillance and response for more than half of 2014. This led to the neglect of other health priorities that the country faces. Redirecting attention back to “normal work” will take some time and effort.

### **Financing**

Likewise, the GoL had to redirect additional resources from other sectors to health in order to cope with the devastation that EVD caused in communities and health facilities, including almost 400 EVD infections in health workers.

## **2.4 Opportunities on which to build/strengthen the health system**

As part of the response to the EVD outbreak, the GoL, in collaboration with different partners, established Ebola treatment centres and strengthened referral systems between the regular health facilities and these treatment centres. Infrastructure developments are also underway to build appropriate isolation and triage structures in routine health facilities. These infrastructure assets at the end of the epidemic could potentially be converted into general health facilities and/or isolation units for highly infectious diseases. The lessons learnt and experiences and systems established for referral could be used to further strengthen the health referral system in general.

The IPC measures that have been introduced both at the health facilities and within the population have impacted positively on behaviour. Sustained information, education and communication would go a long way in further cementing these good behaviours and contributing towards reduction in some infectious diseases. Triage processes that have been recently introduced and strengthened as part of efforts towards the restoration of safe essential health services can be built upon to strengthen outpatient and inpatient admission processes, effectiveness and timeliness of care and referral systems. Assurance of uninterrupted essential supplies for the safe delivery of health services for the health worker and the client/patient is crucial to restoring trust in the health system.

Epidemic preparedness and response measures including strengthening of surveillance and laboratory capacity will remain an asset even after the EVD crisis. These same measures will apply to preventing and controlling other infectious diseases. The level of community engagement and ownership was raised during the EVD response. This should be leveraged to build a strong voice and involvement of communities in health service planning and management as well as in community based health promotive and preventive activities.

Because of the level of the epidemic, the GoL had to engage other partners through contracts, especially with non-governmental organizations. The experience of contracting health services would contribute to informing future models of service delivery through contracting out (contractualization).

With the surge of partners (World Bank, USAID, CDC, NIH, DTRA, Islamic Development Bank, UNMEER, African Development Bank, WAHO, European Union, African Union, ECOWAS, UN Agencies, international NGOs, and others) interested in supporting the response to the EVD outbreak, there have been various types of support provided, including funding, technical assistance, and product donations. These resources will form a springboard for the initial recovery process as the outbreak subsides and eventually comes to an end. The GoL needs to build on this good will of the partners so that additional resources are mobilized to sustain the health system so it can deliver the set goals and objectives of the sector. To ensure that recovery investments and efforts are in alignment with national priorities and are coordinated in line with “IHP+ principles,” the MOH will put processes in place to operationalize key principles for coordinated and needs-based health systems recovery efforts and investments.

As the country remains at risk of cross-border transmission of EVD cases and other epidemic diseases, the current cross-border collaboration in surveillance, epidemic preparedness and response support mechanisms can be further strengthened. Building national core capacities for IHR (2005) implementation will be needed for the roll out of the national cross-border strategy.

## **2.5 Getting to zero and transitioning from the EVD response**

The President, as part of the Mano River Union signed a declaration on 15 February 2015 that defined the commitments towards interruption of EVD transmission and the post-Ebola socioeconomic recovery priorities. Countries committed to achieving zero new EVD cases within 60 days from the 15 February 2015, and committed to a regional approach to getting and staying there.

In line with this, the Ministry of Health has defined the “Getting to Zero” plan with the goal of ensuring that capacity exists to rapidly detect, investigate, respond to, and effectively contain the EVD outbreak in the sub-region within 60 days. It also seeks to minimize the associated health and socioeconomic consequences of the outbreak on the already fragile societies while restoring the health system and addressing the socioeconomic impacts on livelihood. The objectives of the plan are to ensure:

- I. Clear identification of the key drivers of EVD in the current phase of the response.
- II. Development of imperative interventions to address these drivers of EVD.
- III. Development of guiding principles to spur and sustain implementation of the interventions.

The key investments outlined in detail in the separate plan for “Getting to Zero”:

- I. Sustaining IPC initiatives.
- II. Deepening community engagement.
- III. Negotiating safe and dignified burials.
- IV. Improving quality of surveillance, targeting both areas with, and without ongoing EVD transmission.
- V. Strengthening cross-border collaboration across the affected countries.
- VI. Providing mental and psychosocial support services for persons affected by the EVD directly and indirectly.
- VII. Institutionalizing coordination structures and mechanisms.

As the outbreak response phase wanes, the sector needs to ensure resources and capacities built are transferred to the MOH and other national authorities and national systems. These include, for example, assisting in upgrading IPC measures in health facilities, and providing assistance at national level and district/county health offices in strengthening surveillance and early warning and alert systems, as well as determining how to use laboratory capacities that were brought into the country for the response to strengthen national and regional laboratory services. The sector has defined its priorities to guide this transition phase that first, articulates how funds, expertise, and resources acquired will be redeployed to rekindle health development interventions, and second, provides an opportunity to repair urgent vulnerabilities in the health system that were exposed during the outbreak. These investments are outlined in a separate

Transition Plan, and are defined around the areas of human resources, call centre dispatch and ambulance services, safe and dignified burials, laboratory services, realignment of EVD funds, infrastructure (including ETUs and CCCs) decommissioning, triage and isolation units, logistics and supplies, surveillance preparedness and response, community engagement and coordination and management. The health system restoration priorities will need to be well aligned and linked to the investments in the Transition Plan, to ensure they are taken forward in the medium-term.

Furthermore, the current EVD coordination mechanisms and structures that were established for the response should be made sustainable so they can be mobilized for future health emergencies and epidemics. The Emergency Operations Centre would serve as central coordination mechanism, and current protocols and measures should be reviewed to see how they can be made useful for the future. Preparedness plans for future epidemics, including EVD, can be documented and/or updated, making use of the expertise currently in the country. Many partners now supporting the response are also able and willing to stay for longer to support transition, recovery and rebuilding.

### **3.0 The Investment Plan strategic agenda**

#### **3.1 Priorities for strengthening the health system**

The priorities for investment will focus on improving access to and utilization of quality EPHS through strengthening the health system and ensuring that it is resilient to outbreaks and epidemics and creating an enabling environment through community involvement, good governance and strengthened leadership at all levels. Effective EPHS coverage will be improved through addressing challenges in (1) access to the EPHS services (removing physical, financial and sociocultural barriers); (2) quality of provision of the EPHS services (better client experiences, infection prevention, and adherence to standards of care); and (3) adequate community demand for the EPHS services (community awareness and better health seeking behaviors).

In order to build the health system's resilience to future shocks such as epidemics and outbreaks, specific and targeted investments will be made to strengthen the surveillance system, the preparedness, alert and response capacity, as well as strengthening the laboratory and diagnostic system. Acute public health events and emergencies continue to cause illness and deaths, stress the health system directly and inflict long-term disruption on the social, economic, political security of communities. Building national core capacities to detect, assess, report and respond promptly and effectively to public health risks and emergencies as required by the International Health Regulations (2005) need to be fully operationalized to reduce vulnerability to public health risks. The implementation of the IHR (2005) by Member States involves strengthening core surveillance and response capacities to disease outbreaks and other health risks at the primary, intermediate and national level, as well as at designated international ports, airports and ground crossings (cross-border activities).

Investments will be made in strengthening governance and leadership at central, county, district and community levels to ensure an enabling environment. At the community level, efforts will be made to reinforce community engagement in planning and management of health services and bolstering the community structures to effectively undertake their roles and functions, including support of health promotion and disease prevention. In addition, particular attention will be paid to government's role in regulating the private sector health facilities to ensure quality standards are met.

The Investment Plan for Building a Resilient Health System in Liberia will address the major weaknesses that were either pre-existing prior to the epidemic or those exacerbated by the epidemic. It will also render the health system resilient to similar shocks. The main weaknesses included the inadequate quantity and quality of the health workforce that was further impacted by the epidemic, the weak data and surveillance system, the weak health information and research systems, the inadequate laboratory and diagnostic system, weak community engagement, inadequate procurement and supply chain system and pharmaceutical regulation, the dysfunctional health infrastructure, inadequate health and sanitation services, especially in the peri-urban and slum areas, and high out-of-pocket expenditure on health. The Investment Plan priorities are aligned with existing priorities of the GoL as defined in the

National Health Policy and Plan (2011 – 2021), the Agenda for Transformation, and critical health sector priorities agreed by Cabinet early in 2015<sup>9</sup>.

Consequently the following areas are prioritized in the Investment Plan:

1. Health workforce
2. Medical supplies and diagnostics
3. Infrastructure and technology
4. Information, research and communication
5. Epidemic preparedness and response, including surveillance and Early Warning and Alert Response Network (EWARN) structures at all levels
6. Community engagement
7. Quality service delivery
8. Leadership and governance
9. Sustainable health financing

The emphasis in these areas and the scope of investment will be on interventions that strengthen the performance of the health system to meet health needs and facilitate resilience of the health system, while at the same time greatly contributing to rapid return and sustainability of the original trajectory towards attainment of the National Health Policy and Plan goals and targets.

### 3.2 Goal of the Investment Plan

The goal of this Investment Plan is to improve the health status of the Liberian population through **building a resilient health system**, that contributes to the achievement of the health outcomes described in the National Health Policy and Plan 2011 – 2021 by restoring the gains lost due to the EVD crisis, optimizing the delivery of quality services towards universal health coverage and reducing risks due to epidemics and other health threats.

### 3.3 Objectives of the Investment Plan

The objectives of the Investment Plan are to ensure for Liberia:

- A. Universal access to safe and quality services through improved capacity of the health network to provide safe, quality Essential Packages of Health Services.
- B. A robust health emergency risk management system through building public health capacity for prevention, preparedness, surveillance, alert and response for disease outbreaks and other health threats.
- C. An enabling environment and restoring trust in the health authorities' ability to provide services including community engagement, improving leadership and governance and accountable management systems.

As a result of attaining these objectives it is expected that this plan will contribute to the expected health outcomes of the National Health Policy and Plan (2011-2021) as shown in Table 3 below.

**Table 3: Vision, Goal and Objectives of the National Health Policy and Plan**

Vision	A healthy population				
	National Health Policy & Plan 2011-2021	Investment Plan for Building a Resilient Health System	Indicators	Baseline	Targets by 2021
<b>Goal</b>	To improve the health status of the population of Liberia on an equitable basis	Contribute to achieving universal health coverage	Newborn mortality per 1,000 live births Infant mortality rate per 1000 live births Under-5 mortality rate per 1000 live births	38 54 (LDHS) 94 (LDHS)	19 22 57

<sup>9</sup>a) Needs-based Health Workforce investments; b) Healthcare facilities and infrastructure; c) ensuring adequate supply of essential medicines and commodities; d) Strengthening laboratory system/diagnostic services; e) Surveillance and Epidemiology

			Maternal mortality ratio per 100,000 live births	1072 (LDHS)	497
<b>Objectives</b>	To increase access to and utilization of quality health and social welfare services, delivered close to the community, endowed with the necessary resources and offering a comprehensive package of interventions of proven effectiveness  To make health services more responsive to people's needs, demands and expectations by transferring management and decision-making to lower administration levels, ensuring a fair degree of equity  To make health care and social protection available to all of Liberia's population, regardless of an individual's position in society, at a cost that is affordable to the country	To ensure universal access to safe and quality services through improved capacity of the health network to provide safe, quality Essential Packages of Health Services  To ensure a robust health emergency risk management system through building public health capacity for prevention, preparedness, alert and response for disease outbreaks and other health threats  To ensure an enabling environment and restoring trust in the health authorities' ability to provide services including community engagement, improving leadership and governance and accountable management systems	Percentage of infants fully immunized	65 (2013, AR)	91
			Percentage of pregnant mothers attending 4 ANC visits	54.4 (2013, AR)	85
			Percentage of deliveries attended by skilled personnel	61 (2013, DHS)	80
			Percentage of pregnant mothers receiving IPT-2	48 (2013, DHS)	80
			TB case detection rate (all forms)	56 (2013, AR)	85
			Percentage of HIV positive pregnant women who received antiretroviral treatment	42 (2013, AR)	80
			Percentage of population living within 5 km from the nearest health facility	71 (2013, RBHS)	85
			Proportion of counties with public health risks and resources mapped	0 (2014, IDSR)	80
			Percentage of new / re-emerging health events responded to within 48 hours as per IHR requirements	0 (2013, IDSR)	100

### 3.4 Strategic Investment Areas

Given the health system vulnerabilities revealed and exacerbated by the EVD outbreak, the health sector realises it cannot continue with “business as usual” in addressing priorities for the health of Liberians. The strategic investment areas and resultant priorities are therefore built on having critical re-thinking about how investment will be made to provide services that are of high quality and meet the needs of the population.

The sector will increase its focus on improving the quality of care, to complement the improvements in access it has been making since the end of the civil war in order to ensure better responsiveness of health services to the real needs of the Liberian people. Service provision capacity will be expanded, such as ensuring triage, and isolation units in every facility, while actual quality of care will be improved with a higher focus on adherence to clinical standards and practice, use of PPEs and other strategies. The plan will have a strong emphasis on capital investments, to bring the capacity of the health system to the level required to provide the required health and related services. This is a shift from the past when there was higher emphasis on operational expenditures with limited capital investments. The investments are focused on all the input areas of the health system – health infrastructure (new facilities/service points), workforce (higher production, recruitment, performance improvements), and medicines and supplies (higher capacity for supply chain management), leadership and governance (deconcentration, management and accountability systems), information systems and service delivery. However, the sector will ensure that investments are spread across all elements of the health system needed to provide services, moving away from the vertical ‘one issue’ approach to health system investment. All elements of the system are to be invested in, ensuring synergies across the building blocks – for example, infrastructure investments being informed by health workforce production capacity.

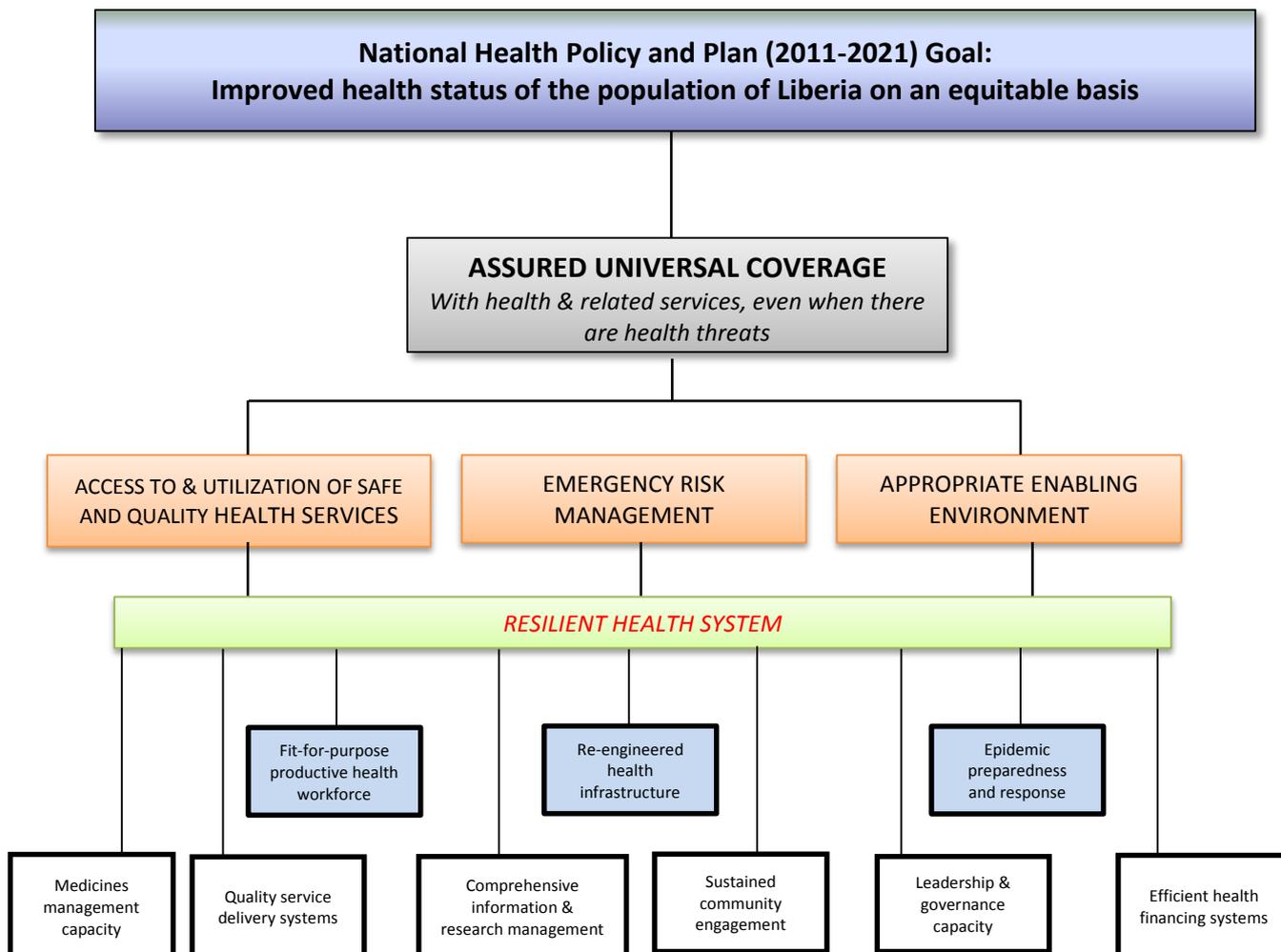
The sector will place a stronger emphasis on generation and use of evidence to guide decision-making, as opposed to *ad hoc* decision-making. Specifically, there will be a stronger emphasis on interventions to build surveillance, research, and information management systems. In this Investment Plan, there will be an increased focus on monitoring of outputs and outcomes of investments which will be a departure than our historical monitoring approach which was more focused on inputs and processes. This means performance will be measured on outputs and outcomes achieved rather than

on activities (e.g. number of facilities built or number of people trained). These will relate to improvements in access (physical, financial or social) and quality of care (client experiences, patient safety, effectiveness of care).

The investment will focus on an institutionalized approach for community engagement in health service delivery and utilization, with particular emphasis on capacity for detection and control of health threats. This is a shift from the routine, vertical disease program focus of community services. It will also prioritize governance and leadership capacity of the government in managing the health system with an acceleration of the implementation of the de-concentration/decentralization plan.

The investment priorities and their linkage with the objectives and goal of this plan are illustrated in Figure 12 below.

**Figure 12: Investment plan strategic framework**



In line with this strategic agenda, the country intends to make critical, and strategic investments across three main investment areas. These investments are:

- a) Build a fit-for-purpose productive and motivated health workforce that equitably and optimally delivers quality services.
- b) Re-engineer the health infrastructure and service delivery system to conform to the population needs for safe and high quality health services.
- c) Strengthen epidemic preparedness, surveillance and response, expanding and improving the EWARN to detect and respond to future health threats.

To complement the above, investments are also required in the following areas:

- d) Put in place a cost-effective and efficient supply chain management systems for essential medicines and supplies, including PPEs.
- e) Restore and enhance service delivery systems to ensure quality of care for clients and a safe working environment for health staff.
- f) Strengthen the health information, research and communication systems to ensure service provision will be based on evidence and need.
- g) Strengthen community awareness on health risks and their engagement and linkages with the health system.
- h) Strengthen leadership and governance at all levels to ensure effective guidance of health actions.
- i) Establish sustainable health financing systems that will ensure efficiency and equity in use of health resources.

For each of these investment areas, the health sector has identified priority investments that it will need to achieve (for details refer to Appendix 2). These represent a set of interdependent investment priorities that contribute collectively to address critical health systems preconditions to attain the defined targets. They are summarized in Table 4 below.

**Table 4: Investment areas and priorities**

<b>Investment Area</b>	<b>Priority investments</b>
<b>Fit for purpose productive &amp; motivated health workforce</b>	<ul style="list-style-type: none"> <li>▪ Implement an emergency hiring and management plan to place up to 4,132 current government health workers onto the GoL payroll (payroll clean up, rapid upskilling, redeployment)</li> <li>▪ Accelerate sustainable needs-based recruitment and reduce attrition to address maldistribution of community health volunteers and workforce in underserved areas</li> <li>▪ Build innovative strategies to improve health worker motivation, accountability and performance</li> <li>▪ Needs-based quality, efficient and effective health workforce production aligned to health sector needs at all levels of the system</li> <li>▪ Evidence and needs-based health workforce planning, management and development</li> </ul>
<b>Re-engineered health infrastructure</b>	<ul style="list-style-type: none"> <li>▪ Decommission ETUs and CCCs and reposition existing resources) to health facilities</li> <li>▪ Extend existing facility infrastructure to ensure they are appropriate for epidemic management (e.g. triage)</li> <li>▪ Ensure all facilities have functional utilities (i.e. water, power)</li> <li>▪ Revise and implement infrastructure policy and standards to include triaging and isolation units</li> <li>▪ Establish robust management and maintenance systems for facilities, fleet and equipment and strengthen referral/transport network</li> <li>▪ Accelerate completion of 17 unfinished health facilities</li> <li>▪ Construct new required health facilities guided by norms</li> <li>▪ Remodel all health facilities to ensure they have required physical infrastructure and utilities</li> <li>▪ Upgrade three existing county hospitals to regional hospitals and 12 clinics to health centres</li> <li>▪ Restore and strengthen blood bank facilities and five regional laboratories</li> <li>▪ Build adequate warehouse capacity for National Drug Service at national and county level</li> </ul>
<b>Epidemic preparedness, surveillance and response system</b>	<ul style="list-style-type: none"> <li>▪ Finalize construction of an Emergency Operations Centre</li> <li>▪ Establish Integrated Disease Surveillance and Response (IDSR) and EWARN structures at national, county, district and community levels</li> <li>▪ Set up comprehensive surveillance data reporting and action frameworks</li> <li>▪ Establish a National Public Health Institute with training centre for public health management capacity building</li> <li>▪ Improve capacity for Public Health Laboratories with bio-bank</li> <li>▪ Compliance to International Health Regulations 2005</li> </ul>
<b>Management capacity for medical supplies and diagnostics</b>	<ul style="list-style-type: none"> <li>▪ Strengthen the National Drug Service including construction of National Drug Warehouse</li> <li>▪ Accelerate procurement according to quantified needs including HR capacities in this area</li> <li>▪ Provide necessary resources to enhance proper functioning of supply management system and good distribution practices from central to county depots</li> <li>▪ Restore/construct county depots and finalize two regional cold rooms to improve storage capacity</li> <li>▪ Provide resources to ensure availability of drugs and medical supplies at all facilities</li> <li>▪ Improve information system to enable accurate and “real time” data on stocks and consumption at all levels</li> <li>▪ Upgrade medicines quality assurance (QA) laboratory and establish adequate pharmacovigilance system</li> <li>▪ Install appropriate technology for the destruction of all expired, counterfeit and damaged medicines under the control of the LMHRA</li> </ul>
<b>Enhancement of quality service delivery systems</b>	<ul style="list-style-type: none"> <li>▪ Scale up of IPC strategies and triage protocol established during the epidemic, to address all new and re-emerging health threats</li> <li>▪ Roll out initiatives to improve water, sanitation and environmental hygiene in health facilities</li> <li>▪ Train, monitor and support health staff to adhere to appropriate clinical care practices</li> </ul>

Investment Area	Priority investments
	<ul style="list-style-type: none"> <li>▪ Enhance health staff's capacity to deliver the EPHS reliably</li> <li>▪ Monitor and implement continuous improvement of client experiences in use of services</li> <li>▪ Ensure functional QA and continuous quality improvement (CQI) processes practiced in facilities</li> <li>▪ Develop innovative service delivery approaches (e.g. mobile clinic) to the most vulnerable people</li> <li>▪ Establish a national medical diagnostics laboratory</li> </ul>
<b>Comprehensive information, research and communication management</b>	<ul style="list-style-type: none"> <li>▪ Strengthen and harmonize data collection systems (HMIS with LMIS, FMIS, iHRIS, CBIS)</li> <li>▪ Put in place capacities for information management</li> <li>▪ Set up adequate systems for sector information dissemination (e.g. UReport, Mhero, website)</li> <li>▪ Strengthen review and use of robust data to improve health system performance at health facility, county and central levels</li> <li>▪ Strengthen national health research system to generate valid evidence to inform policy &amp; decision-making</li> <li>▪ Develop platform for translating, synthesizing and communicating research to inform health policy and practice</li> <li>▪ Revise existing HMIS to include the community HMIS component to capture community level activities</li> </ul>
<b>Sustainable community engagement</b>	<ul style="list-style-type: none"> <li>▪ Revitalize community ownership and involvement in health promotion, emergency response, provision of preventive and curative community-based services and referrals</li> <li>▪ Strengthen functionality of community structures, including those focused on health, and their linkage to health facilities</li> <li>▪ Build capacity of community health structures to coordinate and manage community-based health services to ensure they are receiving required oversight and guidance</li> <li>▪ Strengthen the functionality of systems for accountability of community health services to the population</li> </ul>
<b>Leadership and governance capacity</b>	<ul style="list-style-type: none"> <li>▪ Strengthen community, district and county health teams</li> <li>▪ Enhance management capacity for county and district health teams and county boards (including dissemination of key policy and strategy documents, clarifying roles &amp; responsibilities, reporting structures; SOPs, TORs)</li> <li>▪ Build capacity including mechanisms for skills transfer and support to health managers</li> <li>▪ Reinforce central, county, district and community linkages</li> <li>▪ Strengthen capacity of key units at central level (including decentralization, HRH, regulatory)</li> <li>▪ Establish a mechanism for inter-sectoral dialogue and inter-sectoral collaboration</li> <li>▪ Strengthen sector coordination and collaboration</li> </ul>
<b>Efficient health financing systems</b>	<ul style="list-style-type: none"> <li>▪ Mobilize additional domestic sources of revenue in negotiation with MFDP to: (a) increase budget envelope from GoL; (b) establish innovative domestic financing mechanisms (e.g. levies); and (c) secured financing in coordination with donors including private institutions</li> <li>▪ Strengthen systems and capacities for financial evidence-based planning, budgeting, resource utilization and accountability</li> <li>▪ Establish a health equity fund to ensure financial risk protection</li> <li>▪ Strengthen health financing evidence by institutionalizing systems for regular financial monitoring and evaluation of technical and allocative efficiency in resource use at central, county, district and facility levels</li> <li>▪ Develop and expand performance-based financing mechanisms in the purchasing of health services</li> </ul>

### 3.4.1 Fit-for-purpose productive and motivated health workforce

A needs-based health workforce is a key priority of the Ministry of Health towards the effective coverage of quality services and health systems performance. Achieving a fit-for-purpose health workforce in meeting needs requires a balanced and coordinated set of immediate, short-term and long-term investments for optimal and sustainable performance that realigns the existing workforce model and production pipeline. These investments seek to address current labour market failures such as the inadequate pool of health workforce with the right set of competencies to operationalize the EPHS and health systems functions; wage bill constraints resulting in almost half the public sector workforce not being on payroll; weak regulatory, accountability and performance management systems to ensure performance and appropriate conduct; inadequate and variable quality of health worker production; and limited training capacity. The investments emphasize and prioritize the need to strengthen the available health workforce and CHVs, and address existing critical workforce issues to improve quality and access to health services.

In the transition period of April to December 2015, the sector investment priorities will focus on the workforce determinants of "Getting to Zero" EVD cases and sustaining it and the immediate restoration of essential health services. This includes ensuring hazard pay and benefits are paid with an appropriate exit strategy in place; the

implementation of an emergency hiring plan to absorb up to 4,132 public sector health workers into the government payroll based on priority restoration needs; scaling up in-service training on IPC, triage and case management; resuming supportive supervision; regulatory oversight and monitoring of private health facilities to ensure adherence to standards; restoration of pre-service education programs; and rapid assessments of health needs and the health workforce at all levels of EPHS, including community health, and the health system to inform emergency hiring priorities, workload analysis, revisions to the EPHS staffing norms, needs-based workforce modelling and projections.

The 2015 - 2017 priorities are focused on sustainably building a fit-for-purpose productive and motivated health workforce that equitably and optimally delivers quality services to respond to population and system's needs. Implementing innovative and sustainable health financing mechanisms to expand the wage bill and strengthen domestic health workforce investments will be critical (refer to 3.4.9 Efficient Health Financing Systems). The priority interventions include:

- Strengthening and reforming the MOH Human Resources for Health structure and health worker information system.
- Designing and implementing a package of financial and non-financial incentives to recruit and retain priority health workers, particularly in underserved areas – including housing allowances and housing, mobile money platform for timely and transparent remuneration.
- Designing and implementing a package of sustainable financial and non-financial incentives to strengthen implementation of the Community Health Roadmap and retain 3,500 CHVs in communities that are more than 5 kilometres away from health facility based on a robust situational, policy and options analysis.
- Piloting and evaluating a community health worker program in communities greater than 5 kilometres from health facilities.
- Coordinating appropriate recruitment of health workers for new institutions, infrastructure and reformed central, county and district level health team structures.
- Constructing a regulatory campus (one-time capital investment with sustainable revenue-generation potential) for all regulatory bodies to strengthen and decentralize regulatory systems, reduce dependency on government transfers, reduce long-term rental costs to improve quality, ethics and safety of healthcare.
- Strengthening and aligning pre-service, post/basic graduate and continuing professional education to needs.
- Establishing scholarships to reduce student drop-outs, enrolments of students from underserved areas.
- Enhancing West Africa regional collaborative arrangements to build training institutional capacity.
- Seeding the establishment of training programs to meet unmet production and specialised training needs through public-private partnerships.
- Institutionalizing capacity for evidence-driven health workforce planning and establish a national health workforce account.

### **3.4.2 Re-engineered health infrastructure**

The EVD outbreak exposed the significant gaps in the ability of existing health infrastructure to provide the necessary services. The sector has not had significant and comprehensive infrastructure investments for a while, contributing to this gap. The government is therefore prioritising the re-engineering of the existing health infrastructure, to ensure it is aligned to the needs. This is focused on improving not just the availability, but also functionality and readiness of infrastructure to support provision of required services at national, county, district and community levels.

Given the chronic under-investment in infrastructure in the past, the needs are significant to bring the sector to a level where its infrastructure is adequate to enable resilience of the health system. There are, therefore, large infrastructure needs that the sector is prioritising, to enable 'catch-up' of the state of health infrastructure. The needs are based on attainment of standard infrastructure norms that enable required access to, and management of quality health services. Investments will be staggered based on availability of financing, and aligned with health workforce investments to ensure they complement each other in functionality. In the "Getting to Zero" period, the infrastructure priorities will focus on updating the norms for infrastructure, equipment and transport, and institutionalizing fleet and logistics management to facilitate better management and efficient use of the available transport and logistics system. In the transition period, the priorities include the decommissioning of the ETUs and CCCs and repositioning the existing WASH and other

resources to health facilities, schools and border areas, and establishment of triage and isolation infrastructure in all health facilities.

For the recovery and rebuilding period, the sector focus shall be to re-engineer the country's health infrastructure to conform to the population needs for health services. The priorities shall include:

- Revision and implementation of infrastructure policy and standards including triage and isolation units.
- Completion of 17 partially constructed health facilities; and construction of 45 clinics.
- Developing to standard 10 county hospitals, 50 health centres and 200 clinics.
- Upgrading of 3 existing County hospitals to regional level and 12 clinics to health centres
- Expansion of physical infrastructure in existing facilities, to ensure this is appropriate for epidemic management; this expansion shall therefore focus on water and sanitation facilities, isolation rooms, waste management facilities.
- Improve the functionality in all existing facilities by remodelling them to ensure they have the required infrastructure to ensure better functionality and compliance with government standards and norms. This remodelling shall focus on staff housing (100 duplex apartment staff housing), upgrading of laboratories, building 15 maternity waiting homes, and 14 wellness and rehabilitation units.
- Restoration and strengthening of blood bank facilities and 5 regional laboratories.
- Building adequate warehouse capacity for NDS at national and county level.
- Building a National Public Health Institute.
- Development and implementation of a comprehensive maintenance plan for facilities and equipment
- Improve the readiness of existing facilities to provide services, by ensuring adequate, safe and sustainable water and backup power supplies exist.
- Put in place robust management and maintenance systems for facilities, fleet and equipment and strengthen referral/transport network.

### **3.4.3 Epidemic preparedness, surveillance and response system**

The epidemic preparedness, surveillance and response system failed early on to detect and adequately respond to the EVD epidemic. An important feature of a resilient health system is that it is able to anticipate, detect early, respond to and recover from health emergencies, while avoiding interruption of routine services during these emergencies. Given the fluid nature of most epidemics, it is important that this rebuilding of the emergency preparedness, surveillance and response system using the Integrated Disease Surveillance and Response (IDSR) framework be done in collaboration with the neighbouring countries to coordinate efforts across the borders.

In the immediate period, the sector is focused on improving and sustaining the quality of surveillance at a level able to detect suspect EVD cases in areas with, or without active EVD transmission. Nationally, an Emergency Operations Centre (EOC) is being established, including an Incident Management System (IMS) to coordinate the response. Eventually this together with the enhanced public health laboratory network will form part of the National Public Health Institute, also to be supported in this plan. In addition, significant cross-border collaboration is prioritised in the context of the Mano River Union to ensure information and resource synchronization. The "Getting to Zero" declaration by the Heads of State of the affected countries was made in this context.

In the transition period, the focus will be on transfer of surveillance responsibilities to the county and district health teams; their structure needs to be updated to cater for this. In addition, the contact tracers/active case finders need to be transitioned to enhanced community based surveillance to include EVD and other priority epidemic-prone diseases.

The system for EVD surveillance and early warning needs to be made sustainable after reaching the current outbreak ends as the Ebola virus is likely to remain in the animal reservoir, and the risk of it re-emerging as human infections is high. The procedures that the EOC and the IMS put in place to manage this EVD epidemic need to be documented for future reactivation, and can also be used to manage other types of epidemics. The medium-term health system strengthening focus is aimed at strengthening the epidemic preparedness, surveillance and response, including an early warning system to ensure it is comprehensive enough to detect and respond to all types of epidemics and other possible future health threats. This includes updating preparedness plans for each of them. Furthermore, this should be integrated in the national disaster management agency.

The specific priorities are as follows:

- Establish a National Public Health Institute with a training centre for continued strengthening up of the country's public health management capacity and finalize the construction of the Emergency Operations Centre to coordinate preparedness and rapid response for public health emergencies and steward the implementation of the International Health Regulations 2005.
- Put in place IDSR and EWARN structures at the national, county, district and community levels.
- Set up comprehensive data reporting, preparedness and action frameworks for conditions of epidemic potential.
- Improve capacity for public health laboratories with a bio-bank.

#### **3.4.4 Management capacity for medical supplies and diagnostics**

The health sector needs to have comprehensive improvements across the entire medical supply chain in order to ensure accessibility and availability of drugs and medical supplies at all times at all levels and reduce wastage. In the immediate period, the sector will focus on asset transfer and transition of medical supplies and diagnostics capacities used during the EVD response to the routine health services, scale up the purchase of essential medicines and supplies for all the reopened facilities, and accelerate procurement according to quantified needs for drugs, supplies, equipment and machinery.

In the transition phase, the sector will accelerate capacity improvements in warehousing and distribution, purchase required essential supplies and incorporate all equipment (like incinerators for medical waste) remaining after EVD response into regular system.

Beyond 2015, the sector focus shall be to coordinate and harmonize all different supplies systems in order to build adequate capacity for management of required medicines and supplies at all levels. The priorities will include:

- Strengthening of the National Drug Service to fulfil the role of an independent, integrated Logistic Service Provider (LSP) for the public sector in Liberia through defining its legal status (government autonomous agency), improving functionality, centralizing/integrating parallel supply chains, developing HR capacities, improving storage capacity, ensuring proper functioning of supply management system and assuring good distribution practices from central to county depots.
- Restoring, or constructing where there is none, county depots to improve storage capacity at county level (considering storage of cold chain items).
- Develop HR capacities to enable proper functioning of supply management system, ensure last mile distribution from county depots to facilities through the availability of enough and particularly assigned vehicles for emergency supply distribution.
- Assess and implement, if the initiative is endorsed, a drug revolving fund to improve financial sustainability of essential medicines and supplies consistent with the Bamako Initiative.
- Establishing and supporting overall distribution system; consideration will be given to the possibility of outsourcing distribution system throughout the entire supply chain but with the aim of building capacity to be handed over by the government before the end of this plan.
- Improving information system to get accurate information about stocks and consumption at all levels; we will test new technologies aligned and interrelated with other data collection systems such as HMIS and LMIS.
- Strengthening LMHRA by rehabilitating medicines QA laboratory, buying needed equipment and materials, increasing number of skilled staff, strengthening existing pharmacovigilance arm to ensure safety of medicines to the population.
- Improving capacity of adequate medical waste management by centralizing waste destruction at the LMHRA, and installing appropriate technology for the destruction of all expired, counterfeit and damaged medicines.

#### **3.4.5 Enhancement of quality service delivery systems**

Quality of care was a major challenge noted in the provision of services, leading to inadequate care and health worker infections, and loss of community trust. In addition, equity of access in service delivery was another major challenge of the Liberian health system during the EVD outbreak, resulting in a significant proportion of populations not having readily available health services. The immediate priorities in the "Getting to Zero" phase are on ensuring IPC standards including triage protocols are met and sustained in all health facilities; scaling up of IPC activities in congregate settings, focusing particularly on schools; sustaining the national emergency response services focusing on the dispatch, call

centre, and the ambulance services; and scaling up of psychosocial services provided to EVD affected households and communities.

In the transition phase, the sector focus shall shift towards ensuring effectiveness of care and patient-centeredness of services, in line with the EPHS, to rebuild the trust with communities. This will include:

- Reopen all closed health facilities by redeployment of existing staff and ensure adherence to IPC standards and triage protocols.
- Strengthen QA system to support and monitor adherence to clinical protocols for priority health conditions (e.g. malaria, pneumonia, labour and delivery management, care of the sick newborn, etc.).
- Strengthen outreach services for the hard-to-reach populations.
- Establish a system for eliciting and responding to client feedback in order to promote partnership in health service delivery.
- Establish a system to monitor the health and safety of health workers, especially those involved in the EVD response.
- Transition the emergency response services into the system, focusing on transitioning the dispatch and call centre and existing referral equipment into a fully operational ambulance services starting with Montserrado County. This will be used for all health conditions.
- Transition the safe and dignified burial teams by integrating these into hospital morgues and funeral homes where feasible, and establishment of a memorial site for EVD victims.
- Transition the developed laboratory capacity by ensuring ability to identify and manage other conditions such as Lassa Fever and yellow fever, and bio-safety training and management.
- Transition the psychosocial services provided to EVD-affected households and communities into the routine health services as a part of the EPHS.
- Ensure clinical monitoring and service provision to EVD survivors.

In the health system restoration and recovery period, the overall focus shall be to restore and enhance service delivery systems to ensure quality of care for clients and a safe working environment for health staff. We will undertake a comprehensive initiative to improve quality of care in all its six dimensions (safety, effectiveness, timeliness, efficiency, equity and patient-centeredness). Specific priorities would include:

- Integrate and monitor IPC standards and triage for all health care facilities are maintained.
- Roll out initiatives to improve facility cleanliness and environment.
- Establish systems for, and monitor adherence to appropriate clinical care in all health facilities particularly for priority health conditions (e.g. HIV, TB, malaria, pneumonia, ANC, labour and delivery management, post-natal care, care of the sick newborn, mental health, etc.).
- Strengthen systems for ensuring patient responsiveness and patient-centeredness of service delivery systems
- Scale up and monitor the referral system to all counties for all health emergencies.
- Build capacity for districts and counties in management of corpses; this includes improving availability and quality of morgue services (public and private), strengthened surveillance for causes of death, and strengthening the regulatory framework around corpse management.
- Ensure psychosocial services are provided routinely in facilities, in line with the EPHS.
- Clinical monitoring and service provision to EVD survivors.
- Upgrade the national reference laboratory to a level 3 biosafety standard.
- Ensure functional QA and quality improvement processes practiced in facilities to enable continuous improvement in the health outcomes achieved; this approach will include clinicians and non-clinicians, including their managers and administrators in order to improve overall management and performance of the health system.

### **3.4.6 Comprehensive information, research and communication management**

The information, research and communication systems were highlighted as a key weakness, limiting the availability and use of information to guide decision making. In line with this, the sector will prioritise the following interventions to strengthen the overall capacity for information management:

- Strengthen and harmonize the different data collection systems; this will focus on harmonization of HMIS with LMIS, FMIS, iHRIS and CBIS systems.
- Put in place capacities for information management including analysis and use of data at the local level.
- Establish adequate systems for sector information dissemination (UReport, Mhero, website, process diagrams).
- Strengthen the review and use of robust data in improving health system performance at the health facility, county and central levels.

There is also need to buttress Liberia's national health research system (NHRS) which is constituted by the people, institutions and activities whose primary purpose it is to generate and promote utilization of high-quality scientific knowledge to promote, restore and/or maintain the health status of populations. The NHRS functions include: (1) stewardship, having national health research vision, policy, strategy, legislation, ethical standards, and coordination; (2) developing and retaining human, physical and institutional research capacities; (3) producing, synthesizing, disseminating, and using research to improve health; and (4) mobilizing adequate financing of research.

In the medium to long-term the following interventions will be implemented in order to strengthen the capacity of Liberia's NHRS to generate valid evidence for informing policy and decision-making:

- Reinforce governance of research for health, including development of a valid health research policy, legislation, strategic plan, revising the national health research agenda, and establishing a national research and development coordinating committee.
- Establish a central registry of ongoing and published research for health in Liberia.
- Develop a platform for translating, synthesizing and communicating research to inform health policy and practice.
- Establish a mechanism for tracking health research spending from all sources.
- Support operational/implementation research to guide policy development and decision-making.

Other important aspects of information management that need to be strengthened are: (1) retrospective analysis of why the EVD outbreak was so severe and widespread in Liberia with a view to learning lessons to prevent future outbreaks of epidemic-prone infections; and (2) implementation research as new and modified approaches are tested and scaled up in the country. Partnerships with local research and academic institutions will be sought to enhance the rigor and generalizability of the findings.

Operational/implementation research could shed light on several pertinent health system building blocks including: (a) performance of national and district health systems; (b) leadership and governance of the national health system; (c) design and development of a sustainable health financing system; (d) productivity, production, management and retention of health workers; (e) management of medical products, including their planning, procurement, storage, distribution and dispensing; (f) development and evaluation of new health technology; (g) economic efficiency of health facilities and districts; (h) attitudinal, cultural, geographical, communication and socioeconomic barriers to accessing health services; (i) cost-effective ways of scaling up essential health interventions; (j) equity in distribution of health inputs, services and costs; (k) feasibility of various options for attaining universal health care coverage; and (l) multi-sectoral action to address determinants of health.

### **3.4.7 Sustainable community engagement**

Community engagement represents a critical area for investment, given the experiences with the EVD outbreak. Community trust and engagement was initially lost, but when restored it played a critical role in rolling back the epidemic with community resource persons and volunteers facilitating the contact tracing and support system needed to stop transmission of the virus. The sector intends to build on this experience to set up sustainable citizen engagement that ensures communities' capacities are built to identify, and take corrective actions needed to manage health threats in the future. Real community engagement will be sought, where there is citizen participation in the management of their own health.

In the immediate period, the sector will focus on deepened community engagement, through sustained social mobilization strategies that worked well during the response to the EVD outbreak and sustain them. In the transition period, the health sector will focus on integrating the developed community systems into the formal health services for epidemic preparedness and response as well as health promotion and disease prevention. These structures include the County and District task forces, county and district disaster management committees, county rapid response teams and community health development committees. Emphasis will also be placed on increasing access to non-EVD care

through further, more frequent and higher quality community outreach and community-based provision of preventive and curative services. Development of messages for restoration of health care services will focus on the safety of health facilities, benefits of early care-seeking, health promotion and disease prevention behaviours in households and communities.

In the health system restoration and recovery periods, the sector will build on the strengthened community engagement to ensure households are continually aware of health threats, are practising appropriate healthy and health-seeking behaviours. Specific priorities shall be to:

- Revitalize community ownership and involvement in management of their health, through focusing on community interventions that support health promotion, disease prevention, emergency response and community referral to health facilities.
- Strengthen functionality of community health structures and their linkage to facility services by providing them with required tools and guidance.
- Build health facility staff capacity to coordinate and manage community-based services to ensure they are receiving required oversight and guidance.
- Strengthen the functionality of systems for accountability of community-based services to the population, such as the community health committees.
- Increase access to health services through further and more frequent community outreach, strengthening delivery of community-based services, and increasing PHC structures and quality of care.

#### **3.4.8 Leadership and governance capacity**

This plan will lead to a re-vamping of the health system, requiring a strengthening of the governance and accountability capacity in the country. The main emphases will be on improving accountability and participation of communities and citizens in addressing their health agenda and on strengthening leadership and management skills in senior and middle level managers throughout the health system. In the immediate period, the focus is on maintaining communication contacts with citizens through the call centre, and county task forces.

In the transition period, the focus will be on:

- Transitioning the established county task forces and community systems developed for the EVD into the health sector.
- Establishing robust feedback systems and mechanisms from communities, through facility, district and county levels by having quarterly stakeholders' fora at these levels involving communities, which discuss health issues and services.
- Transitioning the IMS into the health sector routine coordination mechanisms.
- Updating the Health Sector Coordinating Committee based on the EVD experience.
- Developing operational procedures for implementing health services at the county and district level in a de-concentrated form of governance, to provide guidance and support to the county, district and facility managers during implementation of de-concentration.

As a result, the governance priorities in the health system recovery phase shall be to:

- Build the leadership, governance and management capacity of county and district health teams to ensure they are able to coordinate, and manage provision of health services.
- Make operational the governance and monitoring systems and structures at community, health facility, district, county and national levels that ensure citizen participation and involvement in health.
- Establish and ensure functionality of sector coordination mechanisms at community, health facility, district and county levels, in line with the experiences from the HSCC.

#### **3.4.9 Efficient health financing systems**

One of the challenges faced during the EVD response related to the capacity of the health system to absorb and efficiently manage resources being mobilized. Already a complex financing system pre-Ebola with numerous funding

channels in place<sup>10</sup>, the increasing number of partners active in the health sector during the crisis re-emphasized existing issues around partner coordination. As such, some resources had to be channelled through alternative mechanisms, limiting the oversight of government over these. As the health sector recovers, these systemic weaknesses will need to be addressed, to ensure resources being utilized are efficiently and effectively utilized. The health sector will work towards establishing sustainable health financing systems that will ensure efficiency and equity in use of health resources. Specific strategies it will focus on include:

- Strengthen systems and capacities for planning and budgeting as well as financial accountability, to ensure that the resources made available are used for their intended purposes, as and when needed. This would involve need-based recruitment to strengthen and improve the skills of financial management teams at national, county, district and hospital levels.
- Institutionalize the planning and budgeting process as an annual and timely exercise to prepare government budget prior to MFDP's announcement of the budget ceiling, starting with feedback on priorities from the county teams through a bottom-up approach.
- Establish a health equity fund to ensure financial risk protection, cushion against financial risks that limit access to care and address systemic issues within existing provider payment mechanisms; specifically, addressing the sustainability of the provision of the EPHS as a services 'free-at-point-of-use'. The fund will be designed based on social insurance principles and processes. It will be a restructuring of the existing pooling mechanism towards one managed by government, for financing provision of essential health services.
- Advocate for improved allocative efficiency to counties through application of a resource allocation formula and monitor the trends in technical and allocative efficiency of health facilities and health districts.
- Institutionalize comprehensive financial monitoring system for all health resources to identify sources of funds, amounts spent, and activities financed; and address bottlenecks to efficient use of resources. Such an expenditure tracking and review process will be complementary to the existing expenditure review, and will enable the sector better identify unfunded priorities that require additional and targeted financing.

### **3.5 Cross border collaborative activities**

The government recognizes the need for very close cross border collaboration with neighbouring countries, for real system resilience in the face of similar health threats. It is therefore also prioritising sustained and comprehensive cross-border collaborations within the context of the Mano River Union in the following areas:

- Within the health workforce investments, the improved capacities for pre-service and post graduate education have the potential for supporting the same in the other countries of the union. The capacities built to accelerate availability of health workers would continue to exist when the major gaps are filled, and so could complement health workforce capacity strengthening in the neighbouring countries.
- The emergency preparedness and response capacities have to be aligned with those of the neighbouring countries. The surveillance, early warning and response structures will need to be similar in border communities, for them to be effective. The capacity improvements in early detection and management, particularly the emergency operations centre, public health laboratories, medical diagnostics lab and the public health capacity building and training centre all have regional benefits, allowing for harmonized capacity for epidemic control in the sub region.
- Finally, the IPC interventions established during the epidemic, and scaled up across the facilities should also be practiced in the border facilities and communities for them to be able to work best. In this way, practices and services across the border communities can be synchronized and the same level of safety achieved in similar communities separated by the borders.

### **3.6 Implications on service delivery programs**

Being an Investment Plan for the health system, the goal, objectives and investment priorities will focus on the need to improve service delivery capacity for health programs. As such, by attaining the objectives of this Investment Plan, the delivery of the existing and planned programs should be enhanced, with resultant improvements in utilization and

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<sup>10</sup> For instance, MFDP to MOH, MFDP directly to health facilities, donors to NGOs, MFDP and/or MOH and private individuals to insurance companies and/or private and public health facilities.

outcomes seen across the whole health sector. For example, the capacity for provision of services for HIV, tuberculosis, malaria, maternal and child health, and other conditions of public health importance is to be enhanced by the interventions highlighted in this plan.

At present, there is a significant amount of support available for program-targeted system interventions. Such support and funding shall be re-positioned towards system strengthening priorities as reflected in this Investment Plan. This shall ensure coordinated and harmonized attainment of the system priorities. For example, financing for improving health information systems for specific programs shall be re-purposed towards supporting the integrated health information system, which shall serve all programs equally.

## **4.0 Implementation Arrangements**

### **4.1 Investment Plan for Building a Resilient Health within the National Health Plan**

This Investment Plan for Building a Resilient Health will be implemented within the context of the National Health Plan health system recovery plan will be implemented in the context of the National Health Policy and Plan using the same structures. Annual implementation plans will be developed in line with this health system recovery plan as well as with the national health plan and in consultation with counties, development and implementing partners and the private sector including non-governmental organizations. Oversight for planning, implementation, monitoring and evaluation of the Investment Plan will be provided by the Ministry of Health through the Health Sector Coordination Committee (HSCC). Equally at county level, county health teams will coordinate and oversee their implementation plans using a stakeholders' coordination mechanism at that level.

Under decentralization the central level will provide oversight, guidance and support to the lower levels. The central level will support the counties and districts to develop appropriate capacity through regional capacity building teams and supervise them to ensure effective implementation of all plans.

The counties will develop annual implementation plans in line with their strategic plans. The plans will then be collated at the central level and appropriate budgets allocated to support implementation. The funds will be released, used and accounted for using the existing government financial management systems. Both the central and the county levels will report on the progress of implementation on a quarterly basis.

### **4.2 Collaboration with other sectors and actors**

The Ministry of Health recognizes the priorities highlighted in this Investment Plan can only be implemented through joint actions with other actors. The costed Health Sector Investment Plan includes activities in the Education and Public Works sectors, at USD 114.8 million and USD 18.5 million respectively for the period April FY 14/15 until June FY 21/22. The role of the private sector and donors is critical in implementing the priorities outlined. Furthermore, action on social determinants of health is important, especially for health promotion and disease prevention. This Investment Plan is an integral part of the national recovery plan. Thus, regular discussions will be held with other sectors through the existing national inter-sectoral forum. At all levels (national, county and district) the approach for operational planning will be of inter-sectoral nature. The plan will also promote advocacy for health in all policies.

The MOH intends to strengthen the existing structures and processes for engagement with its partners to ensure there is an institutionalized mechanism where their contributions can be reflected. Working together with MFDP, the MOH, learning from the existing pool fund, will establish a strong sector-wide approach (SWAp) partner coordination mechanism to facilitate dialogue with partners so as to better align their funding to national priorities.

Work with the private sector (faith-based organizations, NGOs and private-for-profit) will focus on joint identification of the priorities that the private sector is best placed to support, agreement on collaboration modalities and clear performance frameworks.

### 4.3 Risk management

The potential risks associated with implementation of this plan, and the mitigation measures the MOH will implement to manage these are highlighted below in Table 5:

**Table 5: Risks and their mitigation**

Risk	Weighting of Occurrence		Mitigation	Contingency
	Probability	Impact		
Inability to raise the required funding	High	High	Pro-active and accelerated resource mobilization efforts	Prioritization of activities based on available budgets
Inability to absorb available resources	Medium	High	Review of budget and accountability systems with Finance	Structured working with partners to complement implementation
Emergence of another outbreak	Medium	Medium	Accelerate and prioritize epidemic and early warning systems	Sustain preparedness capacities built during the outbreak response and attain and maintain IHR conformity
Insufficient fiscal space to maintain operations for the expanded health system	High	High	Needs based, prioritized and phased planning for expansion Feasibility analysis for any major investment in terms of capacity to maintain arising operations	Temporarily halt investments till Government able to take up the resultant costs
Inappropriate institutional mechanisms and governance	Low	High	Investments in improving of governance and accountability mechanisms Introduce independent monitoring of governance quality Institute key skills transfer mechanisms for MOH at central and county levels	Ensure regular action on issues arising from independent monitoring of governance quality  Assign TA support from partners to specific counterparts in MOH according to identified needs
Poor partner (and Government) alignment to plan priorities	Medium	High	Strengthen health sector coordination, information, planning and monitoring mechanisms within the National Health Plan focusing on operationalizing IHP+ principles for joint planning and implementation	Institute reward and accountability mechanisms for adherence to plan priorities by partners
Economic uncertainties	Medium	Medium	Close monitoring of economic trends and forecasts to constantly update plans	Ensure prioritization of implementation informed by economic trends and forecasts
Poor cross border coordination with neighboring countries	Low	Medium	Development of a coordinated cross border plan with other affected countries	Expand the existing cross border coordination to EVD for broader disease surveillance
Poor coordination of investments	Low	High	Synchronize investments across different areas to ensure they are ready as needed	Limit investments that require other investments that are not progressing as planned

## 5.0 Monitoring and Evaluation

The monitoring and evaluation of this Investment Plan will use a monitoring and evaluation framework that will be developed in line with that of the National Health Policy and Plan (see Table 6). The output indicators relate to the areas of investment. Outcome and impact indicators have been mostly derived from those already reflected in the National Health Plan Monitoring and Evaluation framework. Data to inform the output and outcome indicators will be obtained mainly from the HMIS and from program assessments and service coverage surveys. On the other hand the impact indicators will rely more on surveys such as the Liberia Health and Population Survey (LHPS).

Supervision and monitoring will be undertaken on a regular basis by the central level to the counties; by the county health teams to the districts; by districts to the facilities; and facilities and districts to communities. The QA program of the MOH will facilitate the supervision and monitoring of activities.

All implementing levels will be required to report on implementation of the Investment Plan on a quarterly basis. Both quarterly reports and annual reports will be compiled based on an agreed framework. The annual reports will inform the annual health sector reviews that will involve all the key stakeholders. The performance indicators and the respective targets for monitoring implications of these interventions are highlighted in Table 7.

**Table 6: The Logical Framework for the Investment Plan**

<b>GOAL:</b> To improve the health status of the Liberian population through building a resilient health system		Neonatal mortality rate per 1000 live births Infant mortality rate per 1000 live births Under-5 mortality rate per 1000 live births Maternal mortality ratio per 100,000 live births	
<b>PURPOSE / STRATEGIC OBJECTIVES</b>		<b>INTERVENTION AREAS</b>	
<i>Description</i>	<i>Outcome Indicators</i>	<i>Description</i>	<i>Intervention Indicators</i>
Improve on <ul style="list-style-type: none"> <li>• Access to safe and quality services</li> <li>• Robustness of the health emergency risk management system</li> <li>• Enabling environment and restore trust in the health authorities' ability to provide services</li> </ul>	<ul style="list-style-type: none"> <li>• Percentage of infants fully immunized</li> <li>• Percentage of pregnant mothers attending 4 ANC visits</li> <li>• Percentage of deliveries attended by skilled personnel</li> <li>• Percentage of pregnant mothers receiving IPT-2</li> <li>• TB case detection rate (All forms)</li> <li>• Total Couple Years Protection (All methods)</li> <li>• HIV positive pregnant women who received antiretroviral treatment</li> <li>• Percentage of new / re-emerging health events responded to within 48 hours as per IHR requirements</li> </ul>	Build a fit for purpose productive and motivated health workforce that equitably and optimally delivers quality services	Skilled health workforce (physicians, nurses, midwives, physician assistants) per 10,000 persons
		Re-engineer the country's health infrastructure to conform to the population needs for health services	Functional Health facilities per 10,000 persons
		Strengthen Epidemic Preparedness, Surveillance and Response, including the expansion of the established surveillance and early warning and response system to ensure it is comprehensive enough to detect and respond to future health threats	Percentage of health facilities with all utilities, ready to provide services (water, electricity)
			Percentage of population living within 5 km from the nearest health facility
			Percentage of counties with funded outbreak preparedness and response plans
		Build adequate capacity for management of required medicines and supplies	Proportion of counties reporting information using event-based surveillance \
			Proportion of counties with Public health risks and resources mapped
		Restore and enhance service delivery systems to ensure quality of care for clients and a safe working environment for health staff	Percentage of health facilities with no stock-outs of tracer drugs during a given period (amoxicillin, cotrimoxazole, paracetamol, ORS, iron folate, ACT, FP commodity)
			Number of blood units collected
			OPD consultations per inhabitant per year
		Strengthen the health information, research and communication systems	Percentage of facilities practicing IPC according to standards
			Percentage of facilities reaching 2 star level in accreditation survey, including clinical standards
			Percentage of counties with harmonized data collection systems (HMIS with LMIS, FMIS, iHRIS, CBIS)
			Percentage of timely, accurate and complete HIS reports submitted to MOH during the year
			A valid health research policy, legislation, strategic plan, and revised national health research agenda including a national registry to monitor national research and development
A functional knowledge translation platform			
Percentage increase in number of research articles published in peer reviewed journals			
A budget line for research within MOH budget and regularly tracking of research spending			
Build on the strengthened community engagement to ensure households are continually aware of health threats, are	Percentage of communities with two or more general community health volunteers		
	Proportion of communities with functional community health committees <sup>11</sup>		

		practising appropriate healthy and health seeking behaviours	
		Expand capacity for leadership and governance to ensure effective guidance of health actions is provided	Proportion of county health teams fully established and functional <sup>12</sup>
			Counties with functional stakeholders forums (County health boards)
			Percent of bilateral aid that is untied
		Put in place sustainable health financing systems that will ensure efficiency and equity in use of health resources	Per capita public health expenditure in USD
			Public expenditure in health as % of total public expenditure
			Out of pocket payment for health as a share of current expenditure on health

**Table 7: Performance indicators and targets for monitoring investment implications**

Domain	Description / area	Indicators	Baseline	Year	Source	June 2017	Target (2021) <sup>13</sup>
Goal	Improved health status of the Liberian population	Neonatal mortality rate per 1000 live births	38	2013	LDHS		19
		Infant Mortality Rate per 1000 live births	54	2013	LDHS		22
		Under-5 mortality rate per 1000 live births	94	2013	LDHS		57
		Maternal mortality ratio per 100,000 live births	1072	2013	LDHS		497
Purpose	Build a resilient health system through improved ▪ Access to safe and quality services ▪ Health emergency risk management ▪ Enabling environment and restoring trust	Percentage of infants fully immunized	65	2013	AR	75	91
		Percentage of pregnant mothers attending 4 ANC visits	54.4	2013	AR	75.8	85
		Percentage of deliveries attended by skilled personnel	61	2013	DHS	72	80
		Percentage of pregnant mothers receiving IPT-2	48	2013	DHS	60	80
		TB case detection rate (all forms)	56	2013	AR	75	85
		Total Couple Years Protection (all methods)	71,714	2013	AR		
		HIV positive pregnant women who received antiretroviral treatment	42	2013	AR	60	80
		Percentage of new/re-emerging health events responded to within 48 hours as per IHR requirements	0	2014	AR	80	100
Outputs per investment area	Health workforce	Skilled health workforce (physicians, nurses, midwives, physician assistants) per 10,000 persons	8.6	2015	Personnel	11	14
		Health infrastructure	Percentage of population living within 5 km from the nearest health facility	71	2013	RBHS	80
	Functional health facilities per 10,000 persons		1.63	2015	H/SA	2	2
	Percentage of health facilities with all utilities, ready to provide services (water, electricity)		55	2015	HSA	80	100
	Epidemic preparedness, surveillance and response system	Percentage of counties with funded outbreak preparedness and response plans	0	2014	HSA	90	100
		Proportion of counties reporting information using event-based surveillance	0	2014	IDSR	80	80
		Proportion of counties with Public health risks and resources mapped	0	2014	IDSR	80	80
	Medical supplies and diagnostics	Percentage of health facilities with no stock-outs of tracer drugs during a given period ( <i>amoxicillin, cotrimoxazole, paracetamol, ORS, iron folate, ACT, FP commodity</i> )	62.3	2011	Accreditation	85	95
	Quality service delivery systems	Number of blood units collected	836	2013	AR	10,000	100,000
		Percentage of facilities practicing IPC according to standards	65	2014	HSA	100	100
		Percentage of facilities reaching two star level in accreditation survey, including clinical standards	9.3	2011	Accreditation	90	90
		OPD consultations per inhabitant per year	1.9	2013	DHS	2	2
	Information and communication management	Percentage of timely, accurate and complete HIS reports submitted to MOH during the year	36	2013	AR	75	90
		Percentage of counties with harmonized data collection systems ( <i>HMIS with LMIS, FMIS, iHRIS, CBIS</i> )	45	2013	AR	100	100
	Community engagement	Percentage of communities with 2 / more general community health volunteers	28	2013	CMR	75	80
		Proportion of communities with functional community health committees <sup>14</sup>	25	2013	AR	80	100
	Leadership and governance	Proportion of county health teams fully established and functional <sup>15</sup>	65	2013	AR	100	100
		Counties with functional stakeholders forums (County health boards)	0		AR		8
		Percent of bilateral aid that is untied	25	2013	AR	75	80
	Health financing systems	Per capita public health expenditure (US\$)	65	2013	AR	70	80
		Public expenditure in health as % of total public expenditure	12.3	2013	AR	15	20
		Out of pocket payment for health as a share of current expenditure on health	51	2014	HFU	20	15

ABBREVIATIONS: AR (Annual Report); ARR (Annual Review Report); HFU (Health Financing Unit); H/SA (Health System Assessment Report)

<sup>13</sup> Targets are from the National Health Plan, unless indicator is missing, or had no target

<sup>14</sup> Functional implies there is evidence the committee (1) has all the staff as per the guidelines; (2) held at least 80% of their scheduled meetings in past 12 months; (3) Ensured all CHVs submitted required reports in the past 3 months in a complete and timely manner; (4) held at least 2 meetings with the CHVs and health facility in the past 6 months

<sup>15</sup> Functional implies there is evidence health teams (1) have all the staff as per the guidelines; (2) held at least 80% of their scheduled meetings in past 12 months; (3) submitted all required HMIS reports in the past 3 months in a complete and timely manner; (4) held at least 2 stakeholder meetings in the past 12 months; and (5) conducted supervision and mentorship visits to at least 80% of their facilities in the past 12 months

## 6.0 Costing and Budget

### 6.1 Plan resource needs

While the EPHS implementation requires an estimated amount of USD 2.8 billion over the period 2015 to 2021, the total projected GOL allocation based on current levels is estimated at USD 416.9 million, leaving a gap of USD 2.4 billion over the same period. The Investment Plan seeks an estimated USD 1.7 billion over the same period. If the Investment Plan is fully funded, it will narrow the funding gap for implementation of the EPHS to an estimated USD 1.1 billion.

The costs for this plan are derived using an ingredient costing approach. The different ingredient costs are based on current estimates of provision of the services/inputs in Liberia as per information received from key stakeholders within government and the private or third sectors. The costs of the investment plan, which are over and above the estimated cost of the National Health Policy and Plan over the same period of time, are estimated for the immediate (last quarter of fiscal year 2014/2015), the intermediate (July 2015 – June 2017) and for the subsequent years (July 2017 – June 2022) when the National Health Policy and Plan ends. The cost estimates based on these periods are shown in Table 8 below. These costs are indicative, include inflation data from the World Bank (April 2015)<sup>16</sup>, and represent the current best estimates for what is needed to implement this plan. As more information becomes available, the costs may be adjusted accordingly.

**Table 8: Cost estimates for implementing the complete Investment Plan (including inflation)**

Scenario 1: Best Case (Total Plan)	Cost			Total
	FY 14/15 (Q4)	FY 15/16 - FY 16/17	FY 14/15 (Q4) - FY 16/17	
<b>Obj 1: Access to Utilization of Safe &amp; Quality Health Services</b>	<b>42,037,119</b>	<b>377,671,000</b>	<b>1,094,116,050</b>	<b>1,513,824,169</b>
1. Fit for purpose productive & motivated health workforce	4,764,866	123,122,007	382,697,620	510,584,494
2. Re-engineered health infrastructure	13,084,702	107,609,548	266,441,584	387,135,834
4. Management capacity for medical supplies and diagnostics	8,523,012	49,524,935	151,093,694	209,141,641
5. Enhancement of quality service delivery systems	15,664,539	97,414,509	293,883,152	406,962,200
<b>Obj 2: Emergency Risk Management</b>	<b>8,832,914</b>	<b>41,645,906</b>	<b>46,484,959</b>	<b>96,963,780</b>
3. Epidemic preparedness and response system	8,832,914	41,645,906	46,484,959	96,963,780
<b>Obj 3: Appropriate Enabling Environment</b>	<b>3,394,433</b>	<b>15,800,928</b>	<b>73,664,647</b>	<b>92,860,009</b>
6. Comprehensive Information, research and communication management	238,175	1,492,794	4,226,648	5,957,617
7. Sustainable community engagement	0	5,807,230	28,450,116	34,257,346
8. Leadership and governance capacity	3,095,000	4,100,002	8,636,978	15,831,980
9. Efficient health financing systems	61,258	4,400,902	32,350,906	36,813,067
<b>Total Cost</b>	<b>54,264,467</b>	<b>435,117,834</b>	<b>1,214,265,657</b>	<b>1,703,647,958</b>
GOL/Domestic Financing	3,889,579	119,409,370	293,597,957	416,896,907
Donor Financing	59,117,102	200,931,746	291,738,973	551,787,821
<b>Total Funds Mapped/Projected</b>	<b>63,006,681</b>	<b>320,341,116</b>	<b>585,336,930</b>	<b>968,684,727</b>
<b>GAP/Financing Source TBC</b>	<b>(8,742,214)</b>	<b>114,776,718</b>	<b>628,928,727</b>	<b>734,963,231</b>

<sup>16</sup> Inflation rate using Consumer Price Index data from WB (2015) is 9.86% for FY 14/15 then averages 6.98% for FY 15/16 – FY 21/22.

## Assumptions

Several assumptions have been used in estimating the costs of the interventions, with an overall aim of having figures as close to the actual need as is feasible. The costs represent what is needed for the GoL to implement the strategic activities aimed at building a more resilient health sector as well as operate routine health services. The broad guidance in interpreting the indicative costing is as follows (detailed list of cost guidance and assumptions can be found in a detailed costing report):

- The Investment Plan is meant to align to and build on the existing sector plan. Therefore, the costs for this recovery plan need to be looked at as an extension of the existing national health sector plan, with the purpose of building a more resilient health system by proposing new and strategic investments together with routine operational activities that are already taking place.
- The Investment Plan costing does include operational costs of providing health services in addition to new investment activities; each 32% and 63% of the total cost outlined in Table 8 above.
- Routine operational costs of along with additional investments into the health sector Ministries and Agencies<sup>17</sup> that received a budget allocation from MFDP in FY 2014/15 are included in the health plan; not just Ministry of Health.
- The plan includes some Emergency and Transitional Plan activities (2% each of total). However, activities relating to social mobilization, safe and dignified burial, running of ETUs and CCCs and psychosocial support (managed by Ministry of Gender and Social Welfare) are largely excluded as these are still being defined as part of the short term Transitional Plan (April to December 2015).
- Where a partner is the implementing agent, the costs that the partner incurs are not included in this costing.
- The cost estimates represent requirements for direct production of the intervention and costs needed to improve capacity to produce the ingredients. So, as an example, in addition to direct costs for production of health workers, costs needed to improve capacity of the training schools are also considered.
- Associated recurrent costs of a capital investment, such as additional annual expenditure on HR, utilities and supplies following the construction or rehabilitation of a facility or fuel and lubricants and management of vehicles are factored in.
- For the health workforce needs, unit costs have been computed using the Civil Service Agency salary scale for salaries and allowances and requirements are based on the phase 2 minimum EPHS staffing norms for each facility type.
- Infrastructure costs are based on standard construction costs provided by the infrastructure unit and in consultation with partners from UNOPS and Partners in Health. Construction targets outlined in the National Health Plan and Policy for 2011-2021 were cut in an effort to save costs<sup>18</sup> and the focus is largely on improving existing facilities and completing the construction of 17 facilities that were already started pre-Ebola, with the priority of improving access in currently underserved areas.
- Administrative and management costs have been estimated at 5% of implementation cost; for instance 5% recruitment costs of the monthly salary of a new hire.
- Equipment of new and expanded institutions is estimated at 15% of construction costs while maintenance and operational costs are estimated at 10% of construction and equipment costs.
- The cost of meetings and workshops are based on GoL rates for conferencing i.e. hall rentals, daily subsistence allowance, transportation etc.

Overall, activities and unit costs were identified in consultation with the relevant implementing arms of the government, such as Ministry of Health Units, the Liberia Medicines and Health Products Regulatory Authority (LMHRA) and the

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<sup>17</sup> This includes but is not limited to the Ministry of Health, Liberia Medicines and Health Products Regulatory Authority (LMHRA), Liberia Institute for Biomedical Research (LIBR), National AIDS Commission, JFK Hospital and Liberia Medical and Dental Council etc.

<sup>18</sup> For instance, the original need to build 90 public clinics to reach the target stated in the National Plan was cut to 45 clinics.

National Drug Service (NDS), with support from technical agencies such as WB, WHO, UNOPS, UNICEF, Clinton Health Access Initiative, Last Mile Health and Partners in Health etc.

## 6.2 Scenarios

Figure 8 above identifies the total cost of the existing plan. However, to provide a clear framework of prioritization if the full plan cannot feasible be implemented due to limited funding, the costed plan is split into Baseline and Moderate scenarios in addition to the full Best Case scenario.

- **Baseline Scenario:** Includes the minimum required to maintain routine services and critical investments to address some of the systemic weaknesses that were highlighted during the Ebola crisis; such as, rolling the remaining half of the government health workers onto payroll, establishing triage in all facilities, constructing isolation rooms in 50 major facilities, installing water and power in health facilities that need it, and constructing a waste management system at district and national level.
- **Moderate Scenario:** Builds on the Baseline scenario with interventions that are needed to better address gaps to build a more resilient health system; including strengthening regulatory systems, upgrading, extending or rehabilitating existing facilities to standards; their associated costs (HR, equipment, maintenance and operating costs) and major new investments into pre-service training through the Health Workforce Program and into the financial system through the Health Equity Fund.
- **Best Case:** Adds major new capital investments to the Moderate scenario such as construction of 45 new clinics and a Medical Diagnostics & Biobank Centre alongside procurement of vehicles etc.

As the Government of Liberia is focusing on the initial investment plan in the short and medium term, see detailed breakdown of the Moderate scenario cost and estimated funding gap in Table 9 below.

## 6.3 Available Funding

An estimated USD 551.8 million from existing/probable donor resources has been identified to date as part on an initial resource mapping exercise, some of which are identified alongside the priorities in Table 10 below; this is in addition to an estimate investment by the Government of Liberia of USD 56-60 million into the health sector each fiscal year, based on historical trends.

## 6.4 Gap Analysis

From an estimated amount of USD 1.7 billion for the total Investment Plan (Best Case scenario) from FY 14/15 Q4 until FY 21/22, available resources include USD 551.8 million (see section 6.2) from donating partners and the GOL projected allocation of USD 416.9 million (see tables 8 and 10) towards the health sector. Thus, based on the latest fiscal space analysis there is an estimated funding gap of USD 735 million for the seven years and one quarter; see Figure 13 below for a representation of the three scenarios alongside the sources of funding.

**Table 9: Health Sector Investment Plan Moderate Scenario FY 14/15 Q4 to FY 16/17**

Scenario 2: Moderate (Baseline and Expanding existing Infrastructure, plus large investments LHEF, HWF, CHVs Incentives)	Cost			Projected Funds			GAP (Cost - Projected Funds)		
	FY 14/15 (Q4)	FY 15/16	FY 16/17	FY 14/15 (Q4)	FY 15/16	FY 16/17	FY 14/15 (Q4)	FY 15/16	FY 16/17
Obj 1: <b>Access to Utilization of Safe &amp; Quality Health Services</b>	<b>42,037,119</b>	<b>180,760,556</b>	<b>183,373,772</b>	<b>23,027,168</b>	<b>124,622,006</b>	<b>100,382,855</b>	<b>19,009,951</b>	<b>56,138,550</b>	<b>82,990,918</b>
1. Fit for purpose productive & motivated health workforce	4,764,866	50,249,105	66,794,264	0	34,349,520	31,520,025	4,764,866	15,899,585	35,274,239
2. Re-engineered health infrastructure	13,084,702	56,957,793	45,415,701	3,917,500	15,953,750	5,626,225	9,167,202	41,004,043	39,789,476
4. Management capacity for medical supplies and diagnostics	8,523,012	24,553,899	24,929,178	8,842,836	26,372,607	20,946,863	-319,824	-1,818,709	3,982,315
5. Enhancement of quality service delivery systems	15,664,539	48,999,760	46,234,629	10,266,832	47,946,129	42,289,743	5,397,707	1,053,631	3,944,887
Obj 2: <b>Emergency Risk Management</b>	<b>7,312,735</b>	<b>12,007,853</b>	<b>14,065,034</b>	<b>9,939,360</b>	<b>3,939,360</b>	<b>0</b>	<b>-2,626,624</b>	<b>8,068,494</b>	<b>14,065,034</b>
3. Epidemic preparedness and response system	7,312,735	12,007,853	14,065,034	9,939,360	3,939,360	0	-2,626,624	8,068,494	14,065,034
Obj 3: <b>Appropriate Enabling Environment</b>	<b>3,394,433</b>	<b>6,477,896</b>	<b>8,160,975</b>	<b>3,147,500</b>	<b>27,027,500</b>	<b>25,230,000</b>	<b>246,933</b>	<b>-20,549,604</b>	<b>-17,069,025</b>
6. Comprehensive Information, research and communication management	238,175	810,620	682,174	2,500	5,212,500	5,210,000	235,675	-4,401,880	-4,527,826
7. Sustainable community engagement	0	1,745,232	2,899,941	0	5,630,000	6,830,000	0	-3,884,768	-3,930,059
8. Leadership and governance capacity	3,095,000	3,339,815	760,187	3,095,000	14,785,000	11,890,000	0	-11,445,186	-11,129,813
9. Efficient health financing systems	61,258	582,229	3,818,673	50,000	1,400,000	1,300,000	11,258	-817,771	2,518,673
Un-programmed (Cross-cutting)	0	0	0	24,944,582	28,725,444	8,465,880	-24,944,582	-28,725,444	-8,465,880
<b>TOTAL</b>	<b>52,744,288</b>	<b>199,246,305</b>	<b>205,599,782</b>	<b>61,058,610</b>	<b>184,314,310</b>	<b>134,078,735</b>	<b>-8,314,321</b>	<b>14,931,996</b>	<b>71,521,047</b>

**Table 10: Estimated available funding (USD, except EU)**

Investment area	AVAILABLE FUNDS	UTILIZATION AND EXPIRY	
Fit for purpose productive & motivated health workforce	30,555,382	<b>GFATM</b> - for personnel costs up to 2021/22	*Estimate
	29,600,000	<b>USAID</b> - In-service training including FARA – up to 2021/22 *Estimate <sup>19</sup>	
	2,260,000	<b>USAID</b> – Train CHWs in 60 communities – up to 2016/17	
	33,786,223	<b>Pool fund</b> - Personnel costs – up to 2021/2022	
Re-engineered health infrastructure	900,000	<b>IDB</b> - Remodelling health facilities – up to 2016	
	15,500,000	<b>USAID</b> – water and sanitation – up to 2016/17 incl. public works	
	1,000,000	<b>WB</b> – Spare parts – up to 2015/16	**EERP Budget (6/Dec) <sup>20</sup>
	1,850,000	<b>WB</b> – Procurement of cars – up to 2015/16	**EERP Budget (6/Dec) <sup>20</sup>
	430,000	<b>WB</b> – Procurement of motorbikes – up to 2015/16	**EERP Budget (6/Dec) <sup>20</sup>
Epidemic preparedness, surveillance and response system	920,000	<b>Islamic Development Bank</b> for upgrading the Public Health Reference Lab to a biosafety level three lab and two regional public Health laboratories – by Sep 2015	
	800,000	<b>USAID</b> – Improve IPC/Waste Management – up to FY 16/17	
	6,000,000	<b>CDC Foundation</b> for construction of an Emergency Operations Centre – by end May 2015	
	2,663,500	<b>WB</b> - Integrated Disease Surveillance and Response	**EERP Budget (6/Dec) <sup>20</sup>
Restoration and enhancement of quality service delivery systems	980,000	<b>USAID</b> – Restoration Facility-based Services – up to 2016/17	
	34,800,000	<b>USAID</b> – FARA – Support Delivery Improvement, AAP – up to 2020/21	*Estimate <sup>19</sup>
	25,100,000	<b>USAID</b> – Technical Assistance – Health Care Services up to 2021/22	*Estimate <sup>19</sup>
	23,530,178	<b>WB</b> – IPC/WAHS, Waste Mng. EPI, supplies and LMHRA QA up to 2015/16	
Management capacity for medical Supplies and Diagnostics	3,200,000	<b>USAID</b> - NDS warehouse & FARA supply chain/commodity management – up to 2017/18	
	14,287,500	<b>USAID</b> –Supply chain management support – up to 2021/22	*Estimate <sup>19</sup>
	45,300,000	<b>USAID</b> – Health products for FARA facilities – up to 2020/21	*Estimate <sup>19</sup>
	1,700,000	<b>USAID</b> – Support planning & inventory analysis – up to 2016/17	
	1,500,000	<b>GFATM</b> - NDS warehouse – up to 2016	
	37,862,078	<b>GFATM</b> – Health Products (TB, HIV/AIDS, Malaria) – up to 2021/22	*Estimate
	180,000	<b>GAVI</b> – Construction of 2 cold rooms – up to 2016	
	19,103,075	<b>Pool Fund</b> – Health products – up to 2021/22	
	4,308,791	<b>WB</b> – Support to LIBR, Regional & County Labs – up to 2015/16	**EERP Budget (6/Dec) <sup>20</sup>
	10,000,000	<b>WHO</b> - IPC supplies – up to 2015/16	
	275,695	<b>UNICEF</b> - Malaria health products – up to 2021/22	
	48,280,619	<b>UNICEF</b> - EPI health products – up to 2021/22	
	5,097,295	<b>UNFPA</b> – Health products – up to 2021/22	
Comprehensive Information, Research and Communication	10,100,000	<b>USAID</b> – <b>Support and</b> Technical Assistance incl. FARA – up to FY 2021/22	*Estimate <sup>19</sup>
	7,220,000	<b>USAID</b> – Support HMIS and CBIS & data quality improvement – up to 2016/17	
	1,658,168	<b>WB</b> – DHIS and Laboratory Info. Mng. System Dev. – up to 2015/16	**EERP Budget <sup>20</sup>
Sustainable community engagement	34,900,000	<b>USAID</b> - FARA: TA and Community based services – up to 2020/21	*Estimate <sup>19</sup>
	1,060,000	<b>USAID</b> – Mass communication, restoration BCC & WASH – up to 2016/17	
Leadership and Governance Capacity	8,600,000	<b>USAID</b> – FARA Technical and management support – up to 2020/21	*Estimate <sup>19</sup>
	4,200,000	<b>USAID</b> – FARA supervision support – up to 2020/21	*Estimate <sup>19</sup>
	7,580,000	<b>USAID</b> – TA to CHTs and central MOH – up to 2016/17	
Efficient Health Financing Systems	50,000	<b>GFATM</b> - National Health Accounts – 2014/15	
	8,600,000	<b>USAID</b> – FARA: PBF, risk mng. & risk mitigation incl. TA – up to FY 2020/21	*Estimate <sup>19</sup>
Cross-Cutting (Un-programmed)	€5,000,000	<b>EU</b> – Remaining development funds for 2014/15	
	44,559,364	<b>WB</b> – Remaining unutilized development funds after above activities – up to 2015/16 <sup>21</sup>	
<b>Total</b>	<b>551.8 million</b>		

<sup>19</sup> USAID provided information on estimated resources up to FY 16/17 on 13 April. For FARA activities this mapping was used to estimate for resources up to FY 2020/21, assuming another five year project. For other routine development aid this mapping was used to estimate up to FY 2021/22.

<sup>20</sup> The WB Investment Plan EERP AF budget as of 6 December 2015 was used to estimate costs and allocated funding. An update on changes to this budget and resources available versus spent will have to be sought.

<sup>21</sup> Based on estimate by WB in Liberia that an estimated USD 80 million of funds remain from the UD 115 million budget from December 2014.

## 6.5 Ensuring sustainable financing

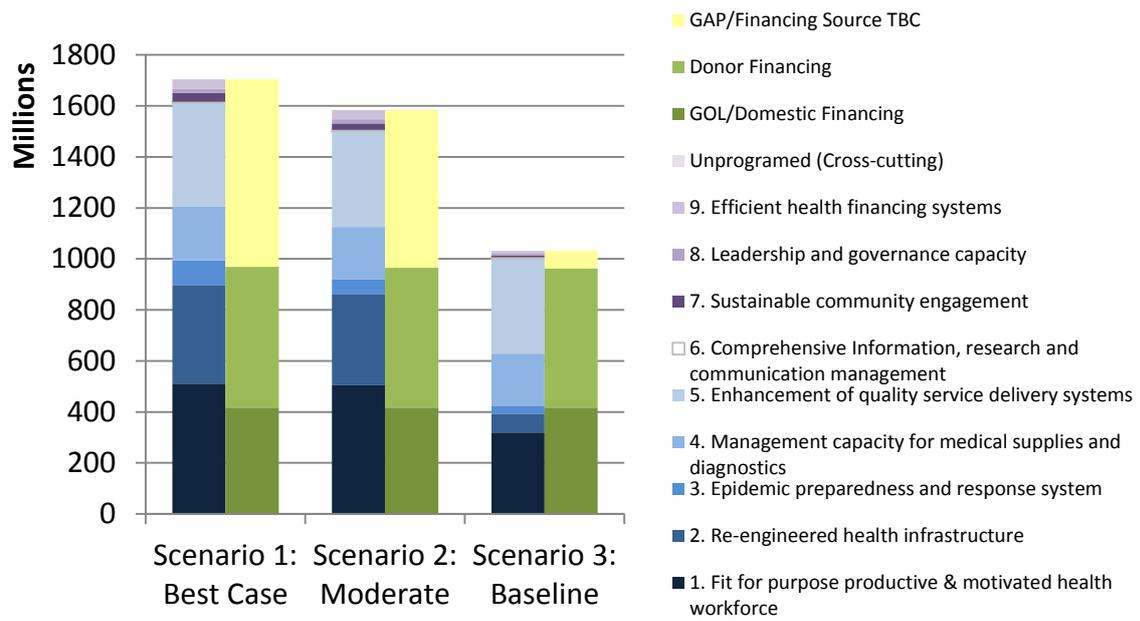
The sector recognizes the resource requirements are significantly higher than what has been received over recent years. However, this investment represents good value for money for the country. Even without counting the lives lost as a result of the EVD outbreak, the economic losses incurred by Liberia far outweigh the costs of financing the implementation of this plan.

However, actual mobilization of the resources will call for innovative strategies to be employed. To ensure the required resources at any given time are rationalized, the country will employ the following strategies;

- i) The implementation of the activities will be staggered over time, taking cognizance of the absorptive capacity and other existing investments. For example, facility constructions will be planned based on when the HR investments will be able to produce the required staffing for the facilities.
- ii) Likewise, investments in pre-service training and production of a highly skilled workforce will be guided by need, based on planned expansion of services.
- iii) Further prioritization will be done by revisiting the proposed funding scenarios as the fiscal space becomes increasingly clear. This will guide the planning for implementation.
- iv) The focus of investments is across all elements of the health system needed to provide services, moving away from the vertical 'one issue' approach to health system investment. All elements of the system are to be invested in, ensuring synergies across the elements. For example, infrastructure investments will be informed by health workforce production capacity.
- v) The health workforce and infrastructure investment areas represent major cost drivers for this plan, with most of the planned investments in these areas being capital investments. For better harmonization of these capital investments, the sector will seek anchor donors to support the implementation of these capital investments.
- vi) The government will continue to review current financing streams in health, to identify available fiscal space to re-channel resources towards these priorities; coordinating closely with partners to ensure that programs implemented by partners align with the National Health Strategy.
- vii) The government recognizes the fluid nature of its resources, and so will only commit to take up operational costs for areas where it has identified it has the capacity to take these up. GOL's commitment towards financing operations will be informed by a critical analysis that identifies where the government resources will come from, and what the opportunity costs are for this financing.
- viii) Integration of planning and monitoring mechanisms shall be practiced, to leverage available resources from vertical programs towards supporting these health system priorities.
- ix) Aggressive resource mobilization shall be employed, to identify and bring on board partners that share this vision with the government.

As funding sources and specific amounts are further clarified and confirmed, Appendix 3 will be completed.

Figure 13: Health Sector Plan Cost and projected Funding (USD) for FY 14/15 Q4 – FY 21/22, identified by scenario



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## Appendix 1: Summary of the Essential Package of Health Services (EPHS)

### I: Purpose and Content

The EPHS has the primary care component and the secondary and tertiary care component. The Primary Care component of the EPHS addresses Community Level Services, Primary Health Care (PHC) Clinic Level 1, PHC Clinic Level 2 and Integrated Outreach Programs, while Secondary and Tertiary Component addresses a prioritized package of secondary and tertiary health service standards for all government and private health facilities and a functional referral system at all levels. The EPHS further sets the minimum requirements for staffing, equipment, drugs and medical supplies.

EPHS serves four basic purposes:

- (1) To expand the standardized primary package of health services.
- (2) To provide equitable access to essential health centre and hospital services.
- (3) To strengthen the service delivery network.
- (4) To provide the basis for operational plan development.

These purposes translate into the following three broad objectives:

1. Locate reliable service delivery points that are capable of providing the most critical EPHS interventions within 5 km of all relevant communities.
2. Reinforce the provision of the following original package components to improve utilization, efficiency and quality:
  - Mother and Newborn Care (family planning, malaria in pregnancy, prevention of mother-to-child transmission of HIV [PMTCT], mother and newborn nutrition), Child Health (growth monitoring, micronutrient supplementation), mental health and communicable diseases.
3. Expand the contents of the revised EPHS to include interventions for neglected conditions and for those likely to become important in the future (Environmental and Occupational Health, Neglected Tropical Diseases, Non-Communicable Diseases, School Health Services and Prison Health Services).

The EPHS is the main operational arm for implementing, in a comprehensive and integrated way, priority service delivery strategies such as the following:

- The Roadmap for Accelerating the Reduction of Maternal and Newborn Morbidity and Mortality in Liberia, whose general goals are to reduce maternal mortality from 994 per 100,000 live births in 2007 to 497 in 2021 and reduce newborn mortality from 38 per 1,000 live births in 2009 to 19 in 2021. Key objectives of the Roadmap are to:
  - Increase by 50 percent the number of skilled attendants at all levels of the health care delivery system.
  - Increase the coverage and access of quality CEmONC (to one service per 50,000–200,000 population) and BEmONC (to four services per 50,000 – 200,000 population) as well as PMTCT and fistula services.
  - Increase access to and utilization of family planning services, to reach a Contraceptive Prevalence Rate of 20 percent in 2021.
- The National Malaria Control Program Strategic Plan has the goal of reducing by 50 percent (from a December 2010 baseline) malaria-related morbidity and mortality among the population, especially in children under five and pregnant women. Objectives are set up to 2015, when they will be reviewed, and include:
  - Increase access to prompt and effective ACT treatment for 80 percent of the population by 31 December 2010 and sustain this reduction through 2015.
  - Increase the use of insecticide-treated nets (LLIN) among the whole population, especially among vulnerable groups such as pregnant women and children under five, to 80% by 31<sup>st</sup> December 2010 and sustain this use through 2015.
  - Increase the population protected by indoor residual spraying (IRS) from 5 percent in 2009 to 40 percent in 2010 and 2011 and to scale up to full coverage by 2015 (after evaluation of the first three years of use).

- To increase the use of Intermittent Preventive Treatment (IPT) among pregnant women in Liberia to 80 percent by 31 December 2010 and sustain this use through 2015.
- The National AIDS Control Program has as overall goals containing the spread of the epidemic and mitigating its impact on the health and well-being of those infected. Its main service-related objectives are to:
  - To reduce the percentage of young women and men aged 15–24 who are HIV-infected from 1.1 percent in 2010 to below 1.1 percent by 2014.
  - To increase the percentage of adults and children with HIV known to be receiving treatment 12 months after initiation of antiretroviral therapy from 63 percent in 2010 to 69 percent in 2012 and 79 percent by 2014.
  - To reduce the number and percentage of HIV-infected infants born to HIV infected mothers who are infected (TBD).
- The National Leprosy and Tuberculosis Control Program has as its goals increasing the detection and successful treatment of tuberculosis cases. Its main objectives are to:
  - Improve notification of new smear positive TB cases from 103 per 100,000 in 2010 to 127 per 100,000 population by 2015.
  - Provide High Quality DOTS with increased success rate from 83 percent to 85 percent by 2015.
  - Expand effective TB and HIV collaborating mechanisms by increasing access to integrated TB/HIV services.
  - Establish the management and treatment of MDR-TB cases from 2011.
- The National Mental Health Program has a goal of providing quality mental health and substance abuse services to the people of Liberia. Its main objectives are:
  - To improve the accessibility and availability of quality mental health treatment at all levels of health care provision.
  - To desensitize communities about mental health and illness and modify negative perceptions about the mentally ill, thereby minimizing stigmatization and negative behaviours toward the mentally ill.

## **II: Implementation:**

The 10-year EPHS will be implemented in two phases:

### ***Phase 1 (Years 1–3)***

- Strengthen and expand maternal and child health (MCH) services, emergency health services and communicable disease prevention and control.
- Introduce mental health services, school health services, prison health services, and eye health services.
- Assess and plan for the prevention and treatment of neglected tropical diseases (NTDs) and non-communicable diseases (NCDs).
- Strengthen essential support services.
- Introduce QA programming.

### ***Phase 2 (Years 4–10)***

- Strengthen and expand mental health services, school health services, prison health services and eye health services.
- Introduce NTD and NCD services.
- Strengthen and expand QA programming.

## Appendix 2: Summary of Investment Areas

### HEALTH WORKFORCE

#### OBJECTIVE:

Build a fit for purpose productive and motivated health workforce that equitably and optimally delivers quality services

#### STRATEGIC FOCUS

1. Ensure and accelerate the recruitment and retention of a needs-based public sector health workforce to restore safe essential health services and core health systems functions.
2. Implement innovative strategies to optimize and strengthen health workforce performance and conduct including need-based in-service training.
3. Strengthen the health workforce production pipeline at pre-service education and post-graduate education levels and develop health workforce capabilities in alignment with priority needs.
4. Implement robust long-term needs-based health workforce planning and operationalize national processes for workforce planning, management and development.

#### EXPECTED OUTPUTS

1. Available and accessible health workforce with the right capabilities to meet needs.
2. Productive health workforce that performs and responds acceptability to needs.
3. Quality health workforce production and development pipeline aligned to priority health sector needs.
4. Robust needs and evidence based health workforce planning, management and development.

#### STRATEGIC INVESTMENTS

	Transition period (till December 2015)	Medium term (till 2017)	Longer term (till 2021)
1	<ul style="list-style-type: none"> <li>▪ Implement an emergency health workforce hiring and management plan for the restoration of essential services and core health systems functions at all levels of the EPHS</li> <li>▪ Validate and clean the GoL payroll, ensure equitable payment across based on profession and level</li> <li>▪ Absorb up to 4,132 public sector health workers currently not on GOL-payroll based on priority needs and criteria.</li> <li>▪ Develop housing allowance policy and procedures.</li> <li>▪ Develop robust situational, policy and options analysis to inform the design of a package of sustainable financial and non-financial incentives, policies and procedures to strengthen implementation of the Community Health Roadmap and retain 3,500 CHVs in communities more than 5km away from health facility.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Implement housing allowances for up to 1,000 health workers (10% of the workforce) in the most underserved areas.</li> <li>▪ Improve retention by developing a streamlined equitable and fair remuneration (incl. Hardship allowance), social protection and retirement benefits schemes.</li> <li>▪ Eliminate fragmentation and inefficiencies in the remuneration payment process and establish a mobile money payment system for transparent and efficient remuneration disbursement.</li> <li>▪ Recruitment of health workers for completed infrastructure projects.</li> <li>▪ Pilot and implement a nationally standardized package of Community Health Volunteer financial and non-financial incentives in communities that are &gt;5km away from a health facility.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Appropriately coordinated and timed recruitment of health workers for new institutions, infrastructure and reformed central, county and district level team structures.</li> </ul>
2	<ul style="list-style-type: none"> <li>▪ Develop and implement a rapid action plan for in-service training, supportive supervision and quality improvement for the restoration of safe essential health services and critical support and health system functions.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Construct a regulatory campus (one-time capital investment with potential for revenue generation) to strengthen and decentralize regulatory systems, reduce dependency on government transfers, reduce long-term rental costs and to improve quality, ethics and safety of healthcare.</li> <li>▪ Strengthen regulatory systems and regulatory information systems.</li> <li>▪ Implement the rapid action plan for in-service training, supportive supervision and quality improvement.</li> <li>▪ Implement performance management and accountability systems</li> </ul>	<ul style="list-style-type: none"> <li>▪ Increase the quality and availability of in-service training to address priority competency gaps as part of continuing professional development systems.</li> </ul>

<p>3</p> <ul style="list-style-type: none"> <li>▪ Establish hardship and merit-based scholarships for students currently enrolled to reduce drop-out.</li> <li>▪ Implement infrastructure upgrades, recruit faculty and mobilize donations for the restoration of quality health worker pre-service education and MPH programs, curriculum review and quality improvement, provision of psychosocial support services for faculty and students.</li> <li>▪ Develop a robust policy brief for community health and community health cadres with policy options, cost implications, feasibility analysis and recommendations to inform CHW program design in communities that are &gt;5km away from a health facility.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Improve, enhance and align the quality of existing pre-service education programs to address the range of capabilities required of the system.</li> <li>▪ Establish competitively awarded seed investment funds to stimulate public-private partnerships for the development of new pre-service education programs to address capability gaps in the labour market.</li> <li>▪ Strengthen West Africa regional institutional international consortium arrangements to strengthen pre-service education and research capacity in priority areas.</li> <li>▪ Pilot and independently evaluate the production and implementation of the community health worker program in communities more than 5km away from a health facility to inform community health policy and programming.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Transform, scale up and improve the quality of needs-based health workforce production to address health needs, critical systems vulnerabilities and protect against future shocks.</li> </ul>
<p>4</p> <ul style="list-style-type: none"> <li>▪ Establish a functional MOH Human Resources for Health structure at central and county levels.</li> <li>▪ Strengthen the HR information system, ensure its interoperability with other information system, complete the validation of the remaining 3,000/11,000 health worker records in the iHRIS and operationalize the training information system within it</li> <li>▪ Complete a health workforce census and comprehensive analysis of the health needs and health workforce.</li> <li>▪ Develop strategy to address findings from study on motivation and means to attract staff to rural areas</li> </ul>	<ul style="list-style-type: none"> <li>▪ Complete robust needs-based and evidence informed revisions to the HRH Strategy and Plan and the Essential Package of Health Services.</li> <li>▪ Build robust and regular cycles of needs-based and evidence informed health workforce planning and a comprehensive national health workforce observatory and information system; including ongoing professional development requirements.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Implement the National Health Workforce Account as a sub-account of the National Health Account.</li> </ul>

## COST IMPLICATIONS

*Resource requirements – USD 510,584,499 for FY 14/15 Q4 – FY 21/22 (Scenario ‘Best Case’ including inflation)*

*Justification of resource requirements:*

Health workforce investments seek to implement a balanced and coordinated set of sustainable strategies to address critical labour market failures such as the inadequate pool of health workforce with the right set of competencies to operationalize the EPHS and health systems functions; wage bill constraints resulting in 41% the public sector workforce that is not on payroll; weak regulatory, accountability and performance management systems to ensure performance and appropriate conduct; and inadequate and variable quality health worker production pipelines and limited training capacity. The three major health workforce cost drivers in the investment plan are the expansion of the wage bill for the absorption of unsalaried health workers currently working in the public sector and recruitment of health workers to staff new institutions and health facilities to be constructed onto the GoL payroll and substantive investments into building health workforce capabilities through strengthening and expanding the health worker pre-service education and post-graduate programs to meet needs.

# HEALTH INFRASTRUCTURE

## OBJECTIVE

Re-engineer the country's health infrastructure to conform to the population needs for health services

## STRATEGIC FOCUS

The government is prioritising the re-engineering of the existing health infrastructure, while identifying the needs for new facilities and institutions, to ensure it is aligned to the needs of the health system. This is focused on improving not just the availability, but also functionality and readiness of infrastructure to support provision of required services. The strategic area will target the national level, county, district and community based health facilities.

## EXPECTED OUTPUTS

1. Infrastructure policy and standards improved and effectively implemented.
2. Improved network and readiness of health facilities adequately prepared for service provision at all levels of care able to respond to the health needs of the population routinely and during emergencies, while improving access to health services for population especially for those in remote and hard to reach areas.
3. Robust maintenance system in place for facilities and equipment.
4. Health facilities adequately equipped to provide quality EPHS.
5. Referral/transport network strengthened.

## STRATEGIC INVESTMENTS

	Transition period (till December 2015)	Medium term (till 2017)	Longer term (till 2021)
<b>Output 1</b>	<b>Infrastructure policy and standards improved and effectively implemented</b>		
1.1	Revise infrastructure policy and standards to include triaging and isolation units		
1.2.	Advocate and ensure implementation of infrastructure policy and standards among implementers (public and private)	Liberia Medical and Dental Council to promulgate regulations to ensure compliance	Liberia Medical and Dental Council to promulgate regulations to ensure compliance
<b>Output 2</b>	<b>Improved network and readiness of health facilities to provide quality services</b>		
2.1	Decommissioning of selected ETUs and CCCs and reposition of existing WASH and other resources to health facilities	Continue decommissioning of selected ETUs and CCCs and reposition of existing WASH and other resources to health facilities	
2.2	Establishment of triage and isolation structures and waste management systems in all health facilities	Expansion of permanent physical infrastructure in existing facilities, to ensure this is appropriate for epidemic management, including triaging, isolation space and waste management; which will consist of a holding room in clinics and isolation room in health centers and hospitals	Continue upgrading of permanent physical infrastructure for triaging and isolation in remaining facilities
2.3	Advance improvements for adequate, safe and sustainable water supply and backup power supply exist in health facilities most in need	Ensure remaining health facilities have adequate, safe and sustainable water and power water supply	
2.4		Remodel selected prioritized health facilities to ensure they have required physical infrastructure, laboratory and rehabilitation facilities Accelerate completion of 17 unfinished health facilities and upgrade 3 existing County hospitals to regional level and 12 clinics to health centres	Improve readiness of remaining health facilities to provide quality services  Construction of new required health facilities guided by norms; at least 45 Clinics 12 health centres  Build maternity waiting homes in health centres and hospitals near underserved/remote areas

	Transition period (till December 2015)	Medium term (till 2017)	Longer term (till 2021)
<b>2.5</b>	Initiate restoration and strengthening of 5 regional labs Initiate and strengthen blood bank facilities	Continue restoration and strengthening of 5 regional labs Continue restoration and strengthening of blood bank facilities Build adequate warehouse capacity for NDS at national and county level Build accommodation/staff quarters as per priority need Identify and/or build facilities for public health institute	Continue expansion of staff quarters
<b>Output 3 Robust maintenance system in place</b>			
<b>3.1</b>	Develop a comprehensive maintenance plan for facilities and equipment	Implement the maintenance plan	Continue to implement the maintenance plan
<b>Output 4 Health facilities adequately equipped to provide quality services</b>			
<b>4.1</b>	Conduct inventory of equipment in all public health facilities	Conduct annual inventory of status/location of equipment	Conduct annual inventory of status/location of equipment
<b>4.2</b>	Reposition EVD response equipment as per identified priority needs	Continue repositioning EVD response equipment as per identified priority needs	
<b>4.3</b>	Develop and prioritize procurement plan for equipment, spare parts for all public facilities	Review and update procurement plan Implement procurement plan as per identified needs and available resources	Continue to implement procurement plan as per identified needs and available resources
<b>Output 5 Referral/transport network strengthened</b>			
<b>5.1</b>	Conduct assessment of status and location of fleet (vehicles, trucks, motor bikes) and identify critical gaps in transport/referral systems		
<b>5.2</b>	Repositioning of EVD response fleet as per critical gaps (as per Decommissioning Thematic Working Group [TWG] workplan)	Continue repositioning of EVD response fleet as per critical gaps (as per Decommissioning TWG workplan)	
<b>5.3</b>	Develop and cost fleet management /maintenance and procurement plans as per identified needs	Expand/replace fleet as per procurement plan and available funding	
<b>5.4</b>	Review options to strengthen fleet management system including outsourcing	Advance implementation of selected option to improve fleet management and /maintenance	
<b>5.5</b>	Collaborate with Ministry of Public Works to identify critical road rehabilitation needs to improve access to remote health facilities	Advocate and negotiate with Min of Public Work to address identified road network rehabilitation priority needs	

## COST IMPLICATIONS

*Resource requirements - USD 387,135,834 for FY 14/15 Q4 – FY 21/22 (Scenario 'Best Case' including inflation)*

*Justification of resource requirements:*

There has been an under investment in capital projects for many years, with many health facilities being in poor shape, and with many areas of the country being underserved. This level of resources is required, at least in the initial phase, to reverse years of neglect and bring the health facility network to where it needs to be. The resource requirements are needed for providing basic utilities like water and electricity to existing facilities, building new facilities in underserved areas, expanding existing facilities to include isolation and waste management facilities and staff housing as a retention strategy for health workers.

## EPIDEMIC PREPAREDNESS, SURVEILLANCE AND RESPONSE

### OBJECTIVE:

Strengthen Epidemic Preparedness, Surveillance and Response, including the expansion of the established surveillance and early warning and response system to ensure it is comprehensive enough to detect and respond to future health threats

### STRATEGIC FOCUS

1. Build the country's Integrated Disease Surveillance and Response (IDSR) and early warning capacity to ensure it is able to detect, and adequately respond to public health threats.
2. Establish required cross border surveillance systems needed to identify public health threats before they arrive in Liberia.

### EXPECTED OUTPUTS

1. Functional Emergency Operations Centre to coordinate emergency response activities in the country.
2. Comprehensive Integrated Disease Surveillance and Response system (IDSR) including Early Warning and Response Structures at the national, county, district and community levels across the country.
3. Comprehensive data reporting, preparedness and action frameworks for conditions of epidemic potential.
4. National Public Health Institute including training centre for building up country's public health management capacity.
5. Adequate capacity in country for public health laboratories and bio-bank.
6. Compliance to International Health Regulations 2005.

### STRATEGIC INVESTMENTS

	Transition period (till December 2015)	Medium term (till 2017)	Longer term (till 2021)
1	Develop and strengthen national core capacities in compliance with the requirement of International Health Regulation (2005) along with cross border surveillance at the level of being capable to timely detect suspected EVD Cases and other epidemic prone diseases and other health related events	Continue strengthening national core capacities in compliance with the requirement of International Health Regulation (2005) along with cross border surveillance at the level of being capable to timely detect suspected EVD Cases and other epidemic prone diseases and other health related events	Scale-up and sustain implementation of national core capacities in compliance with the requirement of International Health Regulation (2005) along with cross-border surveillance at the level of being capable to detect suspected EVD cases and other epidemic prone diseases and other health related events in a timely manner
2	Establish the Emergency Operations Centre (EOC), including an Incident Management System (IMS)  Develop SOPs of the EOC and IMS based on the documented procedures followed during the current EVD epidemic, as preparedness to similar potential epidemics	Finalize the construction of EOC	Reinforce and sustain capacity for effective coordination of emergency response activity at all levels in the country
3	Put in place comprehensive surveillance and early warning and response structures at the national, county, district and community levels and upgrade the structure of the national, county and district Health Teams to fulfil their responsibility for effective coordination and management of surveillance activities	Reinforce/strengthen comprehensive surveillance and early warning and response structures at the national, county, district and community levels	Finalize the establishment of a National Public Health Institute with training Centre for building up country's public health management capacity  Sustain an improved comprehensive surveillance and early warning and response structures at the national, county, district and community levels.
4	Develop comprehensive framework for data reporting, preparedness and action for disease epidemic context	Scale up comprehensive framework for data reporting (including electronic tools), preparedness and action for disease epidemic context	Sustain comprehensive framework for data reporting, preparedness and action for disease epidemic context
5	Collaborate with neighbouring Mano River Union countries to ensure synchronization of information and resource for surveillance and response activities	Initiate the process to establish National Public Health Institute with training centre	Finalize the establishment of National Public Health Institute with training centre
6	Improve capacity for public health laboratories with bio-bank	Scale up capacity for public health laboratories with bio-bank	Reinforce and sustain improved capacity for public health laboratories with bio-bank

7	Enhance community based surveillance to support active surveillance and contact tracing for EVD and other epidemic prone diseases	Scale up community based surveillance to support active surveillance and contact tracing for EVD and other epidemic prone diseases	Reinforce community-based surveillance to support active surveillance and frontline response to public health threats
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**COST IMPLICATIONS**

*Resource requirements: USD 96,963,780 for FY 14/15 Q4 – FY 21/22 (Scenario ‘Best Case’ including inflation)*

*Justification of resource requirements:*

The required surveillance and response capacity requires significant investments, particularly in infrastructure, equipment and human resources. The area has been chronically underfunded in the past, calling for this level of investment. The resource needs are urgent, as the required country capacity needs to be built very quickly to take advantage of the community, donor and government goodwill as a result of the challenges due to the EVD outbreak, and to quickly ensure a future threat is adequately tackled.

## ESSENTIAL MEDICINES & SUPPLIES

### OBJECTIVE:

Build adequate capacity for management of required medicines and supplies

### STRATEGIC FOCUS

1. Build the institutional capacity for the National Drug Service to ensure it can carry out its expected functions including construction of a National Drugs Warehouse and accelerating procurement according to quantified needs.
2. Rehabilitate and construct county depots and 2 regional cold rooms.
3. Improve logistical information systems and databases in alignment with LMIS and HIS.
4. Strengthen the Liberia Medicines Regulatory Authority to assure quality of medicines including rehabilitation of the Medicines Quality Assurance Laboratory and improvement of its capacity for adequate medical waste management.

### EXPECTED OUTPUTS

1. **Policy reform:** The national pharmaceutical guidelines and policies are updated and implemented. In addition, protocols on the general management of all virus disease with epidemic potential are introduced in the curricula for health training programs in the country. **Reforming NDS:** The mandate and structure of NDS is revised to serve as a government autonomous agency fully responsible for the procurement, storage, and distribution of public drugs.
2. **Human resources:** The School of Pharmacy in partnership with the MOH and the Pharmaceutical Association of Liberia will be able to produce pharmacists, dispensers/pharmacy technicians, in sufficient numbers and with the appropriate knowledge on supply chain management.
3. **Improved supply chain:** Supply chain allows continuous supply of medicines and medical material from the central level all the way to community level. Emergency procurement supply must be in strict compliance with the Public Procurement Concession Commission (PPCC) Law and guidelines with discretionary budget allocation to county health teams and county hospitals.
4. **Storage and distribution:** Storage facilities are in line with the WHO standard storage and distribution Requirements. LMIS is operational to avoid any stock out including for TB, HIV/AIDS and malaria commodities.
5. **Regulation:** LMHRA ensures regulatory overview and QA of all medicines and medical items available in local market.
6. **Sustainable drug financing:** Coordination mechanisms among all actors involved in supplies financing are in place to ensure effective use of resources, drug-revolving scheme assessed and implemented if this alternative is endorsed.
7. **Coordination and monitoring:** Supply chain more robust due to harmonized national quantification exercise at central level. County hospitals have established pharmacy and therapeutic committees to monitor rational use of medicines and pharmacy management. Strengthened partnership with private sector and safer use of medicines in private sector due to supportive supervision at both public and private facilities.

### STRATEGIC INVESTMENTS

	Transition period (till December 2015)	Medium term (till 2017)	Longer term (till 2021)
1	<ul style="list-style-type: none"> <li>Establish a government policy on NDS legal status and its supervising mechanism. To develop specific road map to strength NDS capacity, management, business plan, self-sufficiency.</li> </ul>	<ul style="list-style-type: none"> <li>Construction of national warehouse</li> </ul>	<ul style="list-style-type: none"> <li>To centralized all medical public procurements activities through NDS, for MOH and others health partner's needs.</li> </ul>
2	<ul style="list-style-type: none"> <li>Renovation and construction of the county depots.</li> </ul>	<ul style="list-style-type: none"> <li>Improve Cold chain capacity and management at county level.</li> </ul>	<ul style="list-style-type: none"> <li>Establish regular supervision of complete supply chain from central to end users levels.</li> </ul>

Transition period (till December 2015)	Medium term (till 2017)	Longer term (till 2021)	
<ul style="list-style-type: none"> <li>▪ Finalization of construction of two regional cold rooms</li> <li>▪ Coordinate supplies revision, inventory, donations, and transfers after Ebola outbreak to go back to normal situation</li> <li>▪ Coordinate the relocation of the incinerators available in the country</li> </ul>	<ul style="list-style-type: none"> <li>▪ Strengthen disposal of expiry medicines and health commodities at all levels</li> <li>▪ Develop HR capacities for document reporting and supply management procedures and good distribution practices.</li> </ul>		
<b>3</b>	<ul style="list-style-type: none"> <li>▪ Strengthen the LMHRA for regulation, registration and pharmacovigilance of medicines and supplies.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Strengthen quality control of medicines circulating in the country</li> <li>▪ Rehabilitation of National Quality Control Laboratory</li> </ul>	
<b>4</b>	<ul style="list-style-type: none"> <li>▪ Revise and implement the Supply Chain Master Plan to articulate accountability relationships between the MOHSW units and agencies involved</li> </ul>	<ul style="list-style-type: none"> <li>▪ Design and implement a Drug Expenditure Tracking System,</li> <li>▪ Allow alternative procurement means to be used by county teams and facilities to face emergency situations and cases where the small amounts of drugs needed make it NDS's supply improbable.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Explore all alternatives for drug financing like drug revolving funds, and public-private partnerships for procurement of approved quality essential drugs and equipment to complement to current donors and government.</li> </ul>
<b>5</b>	<ul style="list-style-type: none"> <li>▪ Organize a national workshop with key national and international actors in the pharmaceutical system to identify key interventions to be included in a five-year implementation plan (budgeted for the first year)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Support implementation plan of the National Medicine Policy on key areas</li> </ul>	
<b>6</b>	<ul style="list-style-type: none"> <li>▪ Update the National Therapeutics Guidelines and the Essential Medicines List to include personal protective equipment (PPE) and other needed drugs and medical supplies.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Regular supervision of the Drug and Therapeutic Committees at the hospitals level following the role defined for DTCs by the National Committee.</li> <li>▪ Strengthen rational use of medicines and supplies in all public health facilities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Enhance rational use of drugs by periodic revision and implementation of clinical guidelines through hospital drug therapeutic committee.</li> <li>▪ Coordinate periodic revision of the Essential Medicines List (EML) by the Pharmacy Division/MOH to coincide with the revision of the EPHS.</li> </ul>
<b>7</b>	<ul style="list-style-type: none"> <li>▪ In partnership with the school of pharmacy and dispensing school, to update the curricula to introduce logistics and supply chain management courses.</li> </ul>	<ul style="list-style-type: none"> <li>▪ To review the existing staff currently working in the sector and to increase workforce according with the needs.</li> </ul>	

## COST IMPLICATIONS

*Resource requirements: USD USD 209,141,641 for FY 14/15 Q4 – FY 21/22 (Scenario 'Best Case' including inflation)*

*Justification of resource requirements:*

Generally, the pharmaceutical sector is faced with many challenges which include inadequate funding from government for the procurement, storage and distribution of pharmaceutical products, the lack of supply chain management specialist, acute shortage of trained dispensers, and logistics officers, shortage of vehicles, especially trucks to facilitate the movement of commodities, and inadequate standard storage facilities at county and national levels. Other external factors that persistently exacerbate the challenges described above and continue to the problem of unreliable supply of essential medicines in health facilities across Liberia are bad road conditions and irregularity of drug supply. Central- and county-level warehousing and distribution lack adequate investment and funding for procurement of pharmaceuticals are fragmented. Thus, this level of investment is needed to address these challenges.

## SERVICE DELIVERY SYSTEMS

### OBJECTIVE:

Restore and enhance service delivery systems to ensure a safe working environment and quality of care for clients to improve health outcomes

### STRATEGIC FOCUS

1. Scale up of IPC strategies and triage protocol established during the epidemic, to address all new and re-emerging health threats.
2. Roll out initiatives to improve water, sanitation and environmental hygiene in health facilities.
3. Train, monitor and support health staff to adhere to appropriate clinical care practices.
4. Monitor and implement continuous improvement of client experiences in use of services.
5. Ensure functional QA and continuous quality improvement (CQI) processes practiced in facilities.
6. Develop innovative service delivery approaches (e.g. mobile clinic) to the most vulnerable people.

### EXPECTED OUTPUTS

1. **Patient Safety** – All health facilities, both public and private, have the necessary design, hygiene, equipment, supplies and staff to minimize the risk of harm, including nosocomial infections, to patients.
2. **Occupational Safety** – All health staff, both clinical and non-clinical, have the necessary knowledge, skills, equipment and supplies to provide services while minimizing the risk of harm to themselves.
3. **Effectiveness of Care** – All health facilities in the public sector are providing care consistent with the EPHS.
4. **Patient Satisfaction** – at least 70% of patients report being very or moderately satisfied with the care they received in health facilities
5. **Reliability of Care** – functional systems in place for QA and CQI in patient satisfaction, clinical care and management of health service delivery systems.

### STRATEGIC INVESTMENTS

	Transition period (till December 2015)	Medium term (till 2017)	Long term (till 2021)
1	Reopen all health facilities and ensure adherence to IPC standards and triage protocols and capability to provide essential health services consistent with priority areas of the EPHS	Strengthen adherence to IPC standards and ensure reliable implementation of the full EPHS (e.g. malaria, TB, HIV, maternal health, child health, mental health) at all levels	Strengthen health workers' capabilities to provide specialized services (e.g. neurosurgery, orthopaedics, ophthalmology, psychiatry etc.) through South-South collaborations
2	Strengthen QA systems at all levels of the health service delivery system to ensure safe and effective health care that meets patients' needs and keeps health staff safe	Expand approaches to improving quality of care to include both QA & CQI at all levels of health service delivery system, including leadership, management, supervision and facilitation skills  Strengthen and expand the linkage between performance-based financing (PBF) and QA/CQI programs	
3	Scale up IPC standards in congregate settings, with a special focus on schools	Monitor and support maintenance of IPC standards in congregate settings	Institutionalize monitoring and support of maintenance of IPC standards in congregate settings to local institutions e.g. schools
4	Establish system to monitor health and safety of health workers, especially those involved in EVD response	Strengthen policy and standards for occupational health and safety and develop monitoring and remediation system	Continue to monitor and improve on implementation of occupational health policy
5	Establish systems to elicit and respond to patient feedback	Implement systems for ensuring patient responsiveness and patient-centeredness of service delivery systems	Evaluate and strengthen systems for ensuring patient responsiveness and patient-centeredness of service delivery systems
6	Transition emergency response services developed for EVD into the routine health system, starting with Montserrat	Monitor and improve emergency response, referral and feedback systems for all health conditions nationwide	Ensure maintenance and continuous improvement of referral system (including

	Transition period (till December 2015)	Medium term (till 2017)	Long term (till 2021)
			transportation, communication) for all health conditions nationwide
7	Broaden EVD laboratory capability to identify other epidemic-prone conditions such as Lassa Fever and yellow fever	Strengthen and monitor laboratory safety and capability to identify and report epidemic-prone conditions	Continuous monitoring and improvement of laboratory safety and capability to identify and report epidemic-prone conditions Upgrade the national reference laboratory to a level 3 biosafety standard
8	Transition safe and dignified burial teams into the system for hospital morgues and funeral homes where feasible	Monitor functionality and effectiveness of safe and dignified burial teams and provide support for institutionalization where feasible. Collaborate closely with traditional leaders and the Ministry of Public Works and the Environmental Protection Agency to ensure safe burials even if not institutionalized.	Strengthen institutionalization process of safe and dignified burials where feasible and strengthen collaboration with traditional leaders and the Ministries of Public Works and the Environmental Protection Agency to ensure safe burials if institutionalization not possible.
9	Transition psychosocial services provided to EVD-affected households and communities into the routine health services in close collaboration with the Ministry of Gender, Social Protection and Development	Strengthen the provision of psychosocial services to EVD-affected households into the routine health services in close collaboration with the Ministry of Gender, Social Protection and Development	Monitor and continue to improve the psychosocial services provided to EVD-affected households in the routine health services
10	Ensure clinical monitoring and service provision to EVD survivors	Transition clinical monitoring and service provision to EVD survivors into routine health services	Ensure complete transition of clinical monitoring and service provision to EVD survivors into routine health services
11		Review and revise public health law to ensure higher standards of care	Ensure implementation of public health law
12		Establish regulations for traditional healers and develop mechanisms to ensure close partnership with formal health system	Monitor and improve partnership with traditional healers

## COST IMPLICATIONS

*Resource requirements – USD 406,962,200 for FY 14/15 Q4 – FY 21/22 (Scenario ‘Best Case’ including inflation)*

*Justification of resource requirements:*

- **Personnel** – Personnel will be needed for training, coaching and supporting health staff to achieve safe, effective, timely and patient-centred health services in a reliable manner. Quality of care is truly everyone’s responsibility but to ensure that it is actually achieved and maintained there must be a dedicated group of people that is responsible for developing, implementing, monitoring and supporting the QA and CQI systems at health facility, district, county and national levels. Depending on the level of the health system these functions can be integrated into existing roles (e.g. officer-in-charge, district supervisor) or new roles may have to be created.
- **Supplies and Equipment** – Given the dearth of basic IPC equipment and supplies in the health facilities before the EVD outbreak, there will need to be significant investments in this area. Further, essential medicines and supplies will have to be maintained in the health facilities as a foundation for effective care and to increase patient satisfaction and re-build community trust; these too will require additional resources given the pre-EVD status of frequent stock-outs of tracer drugs in health facilities. Finally, investments will have to be made in improving the water, sanitation and environmental hygiene of health facilities in order to ensure IPC standards are met and patients and staff are safe from nosocomial infections including potential future outbreaks of epidemic-prone diseases such as EVD.
- **Information Systems** – To ensure visibility and accountability into the progress being made with QA and CQI investments will have to be made into expanding the HMIS to include critical quality indicators. In addition, demand for these quality indicators will have to be created in the clinicians, health service managers and other decision-makers to ensure these data lead to action and further improvements. Capability in data management, analysis and use will have to be built.

## HEALTH INFORMATION, RESEARCH & COMMUNICATION

### OBJECTIVE:

Strengthen the health information, research and communication systems

### STRATEGIC FOCUS

Build the required capacity for information and research generation, validation, analysis, dissemination and utilization to ensure required evidence is available, and being used to inform decision making in health

### EXPECTED OUTPUTS

1. Harmonized data collection and validation systems.
2. Strengthened systems for information analysis and management particularly at the point of collection.
3. Various mechanisms for dissemination of health information across different stakeholders in use.
4. Strengthened national health research system that generates knowledge and facilitates its utilization.

### STRATEGIC INVESTMENTS

Transition period (till December 2015)	Medium term (till 2017)	Longer term (till 2021)
1 Design comprehensive data architecture, based on collation and validation of data from HMIS, LMIS, FMIS, iHRIS, vital registration and CBIS	Put in place required capacities at all levels of the system for collation and validation of data from HMIS, LMIS, FMIS, iHRIS, vital registration and CBIS using agreed data architecture  Develop capacity for ICT	
2 Revise and agree on research agenda and required capacity to manage this	Monitor implementation of and adherence to the research agenda	
3	Put in place capacities in all facilities for information management including analysis and use at the source	
4	Set up innovative systems for sector Information Dissemination (URreport, Mhero, website, process diagrams/posters)	
5 Conduct priority operational/implementation research	Develop a national health research policy and a strategic health research plan	
6 Establish a national research and development coordination committee  Strengthen the national ethical review committee	Develop a health research legislation	
	Establish a knowledge translation platform	
	Establish a central registry of ongoing and published research for health in Liberia	
	Establish a mechanism for tracking health research spending from all sources	
	Conduct priority operational/implementation research	

It is assumed that the additional activities related to NHRS will be accommodated in the estimate below.

### COST IMPLICATIONS

*Resource requirements: USD 5,957,617 for FY 14/15 Q4 – FY 21/22 (Scenario 'Best Case' including inflation)*

*Justification of resource requirements:*

Institutionalized information systems allow for evidence-based decision-making in the health sector. The required resources are low, and therefore provide good value for money for ensuring decisions taken represent the best value. Already some investments are being initiated and the required resources are to build on these investments to ensure a comprehensive health information system is in existence for the country.

## SUSTAINED COMMUNITY ENGAGEMENT

### OBJECTIVE:

Build on the strengthened community engagement and existing community structures that emerged during the EVD crisis to ensure households are continually aware of health threats, are practising appropriate healthy and health seeking behaviours, and that comprehensive community-based health services are delivered

### STRATEGIC FOCUS

1. Revitalize community ownership and involvement in health promotion, emergency response, provision of preventive and curative community-based services and referrals.
2. Strengthen functionality of community structures, including those focused on health, and their linkage to health facilities.
3. Build capacity of community health structures to coordinate and manage community-based health services to ensure they are receiving required oversight and guidance.
4. Strengthen the functionality of systems for accountability of community health services to the population.

### EXPECTED OUTPUTS

1. Strong community surveillance, response, care-seeking, community-based service delivery, and referral system.
2. High adoption of healthy behaviours and practices to prevent common health problems at household and community levels.
3. Community-driven actions to address health threats.
4. Active citizen engagement in identifying community needs, ownership and governance of health system.
5. Health system accountable and responsive to the population.

### STRATEGIC INVESTMENTS

	Transition period (till December 2015)	Medium term (till 2017)	Longer term (till 2021)
1	Sustain strengthened community engagement developed prior and during the EVD outbreak for continued community surveillance, response and preparedness	Build on strengthened community engagement to broaden surveillance, health promotion behaviour change communication, and community-based delivery of preventive and curative services to other health threats of relevance to communities	Develop and facilitate systems for accountability and transparency of community health service provision, community-driven demand for services, health threats and health outcomes on a regular basis
2	Integrate EVD taskforces, rapid response teams and disaster management committees into the formal health services	Increase community ownership of health services and strengthen linkages between community health structures and facility services through regular joint context-appropriate fora for problem-solving and action	
3	Increase access to health services for non-EVD care through further, more frequent and higher quality community outreach and community-based provision of preventive and curative services	Increase access to health services through further community outreach, strengthening delivery of community-based services and increasing PHC structures and quality of care	

### COST IMPLICATIONS

Resource requirements – USD USD 34,257,346 for FY 14/15 Q4 – FY 21/22 (Scenario ‘Best Case’ including inflation)

Justification of resource requirements

- **Personnel** – We need to capitalize on the lessons learned during the EVD outbreak for the types of community engagement strategies and personnel that were most effective at health communication and behaviour change and develop a sustainable way of maintaining the strategies that enabled Liberia to get to zero EVD cases. This may require a departure from or reorganization of our previous community health services initiatives in order to be more effective at achieving transformational health behaviour changes. For example, the current fragmented and ad-hoc way of incentivizing CHVs will need to be improved to become more systematic and sustainable in order for the community health system to be reliable and resilient in the future.

- **Supplies and Equipment** – CHVs will need a reliable source of supplies and equipment to do their health promotion and preventive work at the community level. Many of these supplies currently come from vertical donor-funded initiatives through diverse supply chains. Over time, the MOH will need to harmonize these supply chain systems and assume an increasing share of the cost to ensure reliability.
- **Information Systems** – For more timely response to community surveillance and health service provision data, investments will have to be made into the information systems that underlie the community health service system. Many of these information systems were developed and/or strengthened during the EVD outbreak; these will be leveraged during the transition and recovery periods. Further strengthening may require investment in technological platforms for more timely transfer, analysis and use of data for decision-making and inter-operability with the HMIS and the new EOC developed during the EVD outbreak which is to be re-purposed for a broader epidemic preparedness and response functionality.

## LEADERSHIP AND GOVERNANCE

### OBJECTIVE:

Expand capacity for leadership and governance to ensure effective guidance of health actions is provided

### STRATEGIC FOCUS

1. Build capacity in management and leadership of health authorities at national and decentralized levels to take responsibility for steering the entire health sector and for dealing for current and future challenges.
2. Better planning, management and monitoring and evaluation at all levels of the health sector.
3. Mechanism for accountability, transparency and adaptations.
4. Effective regulation through a combination of guidelines, mandates and incentives backed up by legal measures and enforcement mechanism.
5. Effective policy dialogue.
6. Mechanisms and institutional arrangements to channel donor funding and align it to country priorities.

### EXPECTED OUTPUTS

1. Evidence informed decision making, planning and resource allocation.
2. Operationalize coordinated and coherent investment approach at national and decentralized levels.
3. Concrete progress in decentralization (de-concentration) process.

### STRATEGIC INVESTMENTS

	Transition period (till December 2015)	Medium term (till 2017)	Longer term (till 2021)
1	Strengthen inter-sectoral collaboration building on experience from EVD outbreak response.	Develop capacity (individual and institutional) for planning, resource management, strengthen financial management, internal audits and controls , regulation and M&E at central and counties	
2	Institutionalize development of operational plans at decentralized levels (county, district, health facility and community)	Full operationalization of decentralization including monitoring and micro planning	
3	Enhance integrated technical support and feedbacks from centre to counties, to districts and communities	Improve implementation of sector wide approach at national and decentralized through policy dialogue around the priorities of the investment plan and IHP+ in action	
4	Improve stakeholder, inter-sectoral coordination and dialogue for sustained commitments with development partners	Development of the decentralized levels (districts and health facilities) to strengthen the bottom up approach in planning, monitoring and review	
5	Put in place periodic monitoring, reviews and evaluation mechanism based on set indicators	Strengthen capacity of key units at central level (decentralization unit, HR unit, Regulatory bodies, etc.)	Strengthen MOH leadership in sector policy formulation; partner coordination and inter-sectoral collaboration
6.	Institute proper fleet management	Maintain proper fleet management	
7.	Management /accountability for supply chain management		
8.		Strengthen collaboration and coordination between county hospital management and CHT; tertiary referral hospital with central level	
9.	Create DHTs where they do not exist and strengthen existing ones	Strengthen MOH leadership in sector policy formulation and partner coordination	
10.	Strengthen MOH leadership in sector policy formulation and partner coordination	Strengthen the public private partnerships for provision of services	
11.	Strengthen sector coordination and collaboration	Strengthen MOH leadership and management capacity at all levels	
12.	Support and strengthen the County Health Teams; County Health Boards, including developing terms of reference; harmonizing organograms; clearly defining structure and reporting lines dissemination of available documentation; reporting structures; providing systematic orientation	Revitalize and strengthen country health boards	

## **COST IMPLICATIONS**

*Resource requirements – USD 15,831,980 for FY 14/15 Q4 – FY 21/22 (Scenario 'Best Case' including inflation)*

Justification of resource requirements:

This Investment Plan for the upcoming six years will be costly. Following and amidst the EVD crisis, Liberia is currently dependent on development partners funding for provision of some of the essential governance functions including individual and institutional capacity building, both at central and decentralized levels. However, this is key to ensure development of a resilient health system that will guarantee the health security of the people of Liberia. To that end, while continuous effort to consolidate and increase the percentage of government general budget on health is required, the need for longer-term commitment with development partners is necessary. Increased investments must also be made in the developing the capacity of the institutions in the health sector at all levels to govern, lead and manage the health system.

## HEALTH FINANCING

### OBJECTIVE:

Establish sustainable health financing systems that will ensure sufficient and predictable resource generation, risk pooling mechanisms and strategic purchasing of services.

### STRATEGIC FOCUS

1. Mobilize required resources.
2. Building the capacity of MOH staff to cost-effectively manage the resources used within Liberia's health sector, regardless of source.
3. Improve the process of purchasing services to ensure that services are of good quality and are available to those that need them on an equitable basis.
4. Reduce financial barriers for those who are unable to pay at the point of use for health care through risk pooling mechanisms.

### EXPECTED OUTPUTS

1. Adequate resources mobilized and allocated to address priority health needs.
2. Reduce reliance on donor funding.
3. Timely, cost-effective and transparent utilization of resources in the health sector.
4. Performance-based financing of health services.
5. Liberia Health Equity Fund established.

### STRATEGIC INVESTMENTS

	Transition period (till December 2015)	Medium term (2015 - 2017)	Longer term (2018 - 2021)
1	Mobilize additional domestic sources of revenue in negotiation with MFDP to (a) increase budget envelope from GOL and (b) secured financing in coordination with donors including private institutions	Continue coordination with MFDP on domestic funding to establish innovative domestic financing mechanisms (levies), and with donating institutions on Overseas Development Assistance and private sector contributions (incl. Private Public Partnerships in Health) and in line with the IHP+ approach.	Continued coordination with MFDP and donors
2	Capacity building on financial management including training on costing tools, planning and budgeting processes] for national and county teams in support of the decentralisation process, to strengthen public financial management and increase accountability	Enhance capacity building, both, individual and institutional capacity at the MOH and county levels and implement resource allocation mechanisms for the health sector	
3	Institutionalize robust public expenditure tracking and planning processes (PETS, NHA) to ensure a comprehensive system for monitoring of the utilization of health resources; including identification of sources of funds, spending trends	Continue to build on existing expenditure tracking processes to initiate a comprehensive system for monitoring all health resources to identify sources of funds, amounts spent, and activities financed, through the health accounts	Continued support for the expenditure tracking system to produce annual estimates of spending by source and priority.
4		Generate evidence around the implementation and effect of PBF and its scalability taking into account the context  Based on impact evaluation, expand delivery of primary care, establishing PBF in 7 counties in 2016 and remaining 8 counties in 2017	Investigate need and applicability of PBF schemes at secondary and tertiary level facilities. Develop and implement PBF at these levels depending on assessment.
5	Work with Legislature to develop and advocate for the legislation on the Liberia Health Equity Fund and Authority to be passed	Set up central and county level Health Equity Authority to managed design, implement and ultimately manage the LHEF in 15 counties	Expand LHEF-supported insurance to the rest of the country

### COST IMPLICATIONS

Resource requirements: USD 36,813,067 for FY 14/15 Q4 – FY 21/22 (Scenario 'Best Case' including inflation)

*Justification of resource requirements:*

These resources proposed are required to build up the health financing system to be able to offer risk protection to the citizens of Liberia. The main needs contributing to the resource requirements are related to the establishment of the National Health Equity Authority and its operations at national and county levels for the next seven years; the institutionalization of resource tracking mechanisms such as the health accounts and the public expenditure review at least annually as well as the resource mapping exercise.

### Appendix 3: Indicator, milestone and funding log

Investment area	Priority investments	Description	Milestones			
			Baseline	End transition	2017	2021
<b>Build a fit for purpose productive and motivated health workforce that equitably and optimally delivers quality services</b>	Implement an emergency hiring and management plan to clean the payroll and place existing 4,132 non-GoL payroll health workers on the GoL payroll					
	Accelerate sustainable needs-based recruitment and reduce attrition to address maldistribution					
	Build innovative strategies to improve health worker motivation, accountability and performance					
	Needs-based quality, efficient and effective health workforce production aligned to health sector needs					
	Evidence and needs- based workforce planning, management and development					
<b>RESOURCE NEEDS (US\$)</b>	<b>FUNDING, GOVERNMENT</b>	<b>FUNDING, PARTNERS</b>				
<b>532,270,680</b>						
<b>Re-engineer the health infrastructure to conform to the population needs for health services</b>	Decommission ETUs and CCCs and reposition existing resources to health facilities					
	Revise and ensure implementation of infrastructure policy and standards to include triaging and isolation units					
	Accelerate completion of 17 unfinished health facilities					
	Accelerate construction of new required health facilities guided by norms					
	Extend existing facility infrastructure to ensure they are appropriate for epidemic management (e.g. triage, isolation rooms)					
<b>RESOURCE NEEDS (US\$)</b>	<b>FUNDING, GOVERNMENT</b>	<b>FUNDING, PARTNERS</b>				
<b>395,377,816</b>						
<b>Strengthen Epidemic Preparedness and Response, including the expansion of the established surveillance and early warning and response system to ensure it is comprehensive enough to detect and respond to future health threats</b>	Finalize construction of an Emergency Operations Centre					
	Establish IDSR and EWARN structures at all levels					
	Set up comprehensive Data Reporting & Action frameworks					
	Establish a National Public Health Institute with training centre					
	Improve capacity for Public Health Laboratories with bio-bank					
	Compliance to International Health Regulations 2005					

Investment area	Priority investments	Description	Milestones			
			Baseline	End transition	2017	2021
<b>RESOURCE NEEDS (US\$)</b>	<b>FUNDING, GOVERNMENT</b>	<b>FUNDING, PARTNERS</b>				
<b>86,031,362</b>						
<b>Build adequate capacity for management of required medicines and supplies</b>	Build institutional capacity for the National Drug Service to ensure it can carry out its expected functions					
	Construction of a National Drug Warehouse					
	Rehabilitation of county depots and construction of 2 regional cold rooms					
	Strengthen the national medicines regulatory authority to assure quality of medicines					
	Improve logistical information systems and database					
	Accelerate procurement according to quantified needs for drugs, supplies, equipment & machinery					
	Build required storage and distribution capacity for inventory management, tracking, and analysis of health products supplies					
	Improve capacity for adequate medical waste management					
<b>RESOURCE NEEDS (US\$)</b>	<b>FUNDING, GOVERNMENT</b>	<b>FUNDING, PARTNERS</b>				
<b>192,797,654</b>						
<b>Restore and enhance service delivery systems to ensure quality of care for clients and a safe working environment for health staff</b>	Establish systems to build capacity and monitor adherence to appropriate clinical practice					
	Scale up of IPC strategies and triage protocol established during the epidemic, to address all new / re-emerging health threats					
	Roll out facility improvement strategies to improve facility water, sanitation and environments					
	Monitor and implement continuous improvement of client experiences in use of services					
	Put in place functional quality assurance and quality improvement processes in all facilities					
<b>RESOURCE NEEDS (US\$)</b>	<b>FUNDING, GOVERNMENT</b>	<b>FUNDING, PARTNERS</b>				
<b>212,860,598</b>						
<b>Strengthen the health information, research and communication systems</b>	Strengthen and harmonize data collection systems (HMIS with LMIS, FMIS, iHRIS, CBIS)					
	Build capacities for information management					
	Establish adequate systems for sector information dissemination (UReport, Mhero, website, process diagrams/posters)					

Investment area	Priority investments	Description	Milestones			
			Baseline	End transition	2017	2021
	Strengthen the national health research system (NHRS) to generate valid evidence for informing policy and decision-making					
<b>RESOURCE NEEDS (US\$)</b>	<b>FUNDING, GOVERNMENT</b>	<b>FUNDING, PARTNERS</b>				
<b>5,752,653</b>						

<b>Build on the strengthened community engagement to ensure households are continually aware of health threats, are practising appropriate healthy and health seeking behaviours</b>	Revitalize community ownership and involvement in health promotion, disease prevention, emergency response, and referrals					
	Strengthen functionality of community health structures and their linkage to facility services					
	Build facility capacities to coordinate and manage community-based services					
	Put in place systems for accountability to the population					
<b>RESOURCE NEEDS (US\$)</b>	<b>FUNDING, GOVERNMENT</b>	<b>FUNDING, PARTNERS</b>				
<b>39,829,632</b>						

<b>Expand capacity for leadership and governance to ensure effective guidance of health actions is provided</b>	Strengthen County and District Health Teams					
	Enhance management capacity for County and District health teams					
	Capacity building and support for health managers					
	Reinforce central, county, district, and community linkages					
	Establish a mechanism for inter-sectoral dialogue and collaboration					
	Strengthen sector coordination and collaboration					
<b>RESOURCE NEEDS (US\$)</b>	<b>FUNDING, GOVERNMENT</b>	<b>FUNDING, PARTNERS</b>				
<b>16,922,557</b>						

<b>Put in place sustainable health financing systems that will ensure efficiency and equity in use of health resources</b>	Strengthen systems and capacities for financial accountability					
	Establish a health equity fund to ensure financial risk protection					
	Put in place systems for regular monitoring of efficiency in resource allocation and use					
	Establish comprehensive financial monitoring system for all health resources					
<b>RESOURCE NEEDS (US\$)</b>	<b>FUNDING, GOVERNMENT</b>	<b>FUNDING, PARTNERS</b>				
<b>36,912,110</b>						