Joint External Evaluation of the Republic of Liberia

Mission Report

September 2016
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Executive Summary – Findings from the Joint External Evaluation

Since June 2007, countries are strengthening their core capacities required for the implementation of the international health regulations-IHR (2005). Various countries, international organizations, partners, donors, are supporting the implementation of IHR capacities. Under the Article 54 of the IHR (2005), countries were self-reporting annually their implementation status to World Health Assembly. IHR review committees and various experts panels recommended the review of events, AND voluntary independent external evaluation. The World Health Organization (WHO) and partners developed the joint external evaluation (JEE) tool based on available tools like the IHR monitoring questionnaires, the Global Health Security Agenda (GHSA) assessment tools and others.

This assessment was a WHO led IHR (2005) core capacity assessment using the IHR Joint External Evaluation (JEE) tool. A multi-sectoral team of experts (nominated by JEE secretariat) and observers from Eritrea and South Africa participated in the week long assessment which took place from September 5th to 9th 2016, in Monrovia Liberia. In the WHO, African region, Liberia is the fourth country to volunteer for the JEE, after Tanzania, Ethiopia and Mozambique. Importantly, Liberia is the first country in West Africa and also the first country in Africa where WHO/AFRO solely organized the JEE and was also the team lead.

All the 19 action packages/technical areas were assessed. Liberia first completed a self-assessment using the JEE tool. The results of this assessment, including host country self-assessed scores for the 19 Action Packages, were then presented to the External Assessment Team (EAT). The EAT and host country experts then participated in a facilitated discussion to jointly assess Liberia’s current strengths, areas which need strengthening, and priority actions; scores were developed through a process of consensus. Action Package scores, supporting information, and specific recommendations for priority actions are provided under the Action Package sections of this report.

The results of the assessment and observations of the Host Country’s Health Security preparedness were presented to Minister of Health (Hon. Dr Bernice T. Dahn), the Senator on the health committee in the Senate and Former Minister for Health (Hon. Dr. Peter Coleman), senior Government officials from the Ministry of Health and several other Ministries and Government departments, representatives from donor and technical partner agencies, County Health Officials, and the media.

**Overarching Issues and Priority Actions**
Key best practices

- There is strong political will to develop IHR capacities by taking forward a multi-sectoral health systems approach.
- There are strong partnerships and stakeholder involvement at sub-national, national, regional and global levels.
- The country has made significant progress post Ebola in all domains of human/public health.
- There is a robust surveillance system with country-wide coverage on the human side.
- The foundation for the Field Epidemiology Training Programme (FETP) has been set in collaboration with the University of Emory and the Africa Field Epidemiology Network-AFENET.
- Robust Emergency Operations Centers (EOCs) and Incident Management System (IMS) have been established at national and intermediate levels.
- The country has a good vaccine delivery system in the human health sector to deliver mass vaccinations if the need arises.
- The lessons for linking public health and security authorities in Liberia are commendable.
- There is a robust experience with deployment of medical countermeasures and personnel deployment and a strong foundation for infection prevention (IPC) practices that has been set up at health facilities through the safety quality systems (SQS) training programme.

Key areas for improvement

- Liberia is urged to revise laws and legislation in the context of IHR and One Health, for example the 1976 public health act.
- Key policies and strategies that are in draft form should be quickly finalized with relevant national stakeholders.
- In the context of One Health, the animal health sector needs additional efforts and interventions.
- Liberia’s IHR Focal Point and the organisation for animal health (OIE) focal point (which is still an individual and not an organizational set up or centre) should be made a centre and provided the relevant resources (information and communication technology, human, logistical and financial) to facilitate their reporting functions to WHO and or OIE and to be accessible on a 24 hour and 7 day basis (24/7).
- Liberia should develop a multi-hazard National Public Health (PH) emergency preparedness and response plan. The National PH Emergency Preparedness and Response Plan should be integrated with the points of entry (POEs) emergency plans. Moreover, IHR-compliant air and sea plans should also be under the umbrella of this plan. In addition cross border collaboration/initiatives should be addressed during the development of the Multi-hazard PH Emergency Preparedness and Response plan.
- It will be important to strengthen laboratory capacity and networks including supply chain systems, and to establish internal quality control and external quality assurance systems.
- Antimicrobial resistance detection, mitigation and stewardship strategies and plans are urgently needed and should be addressed using a One Health approach with close collaboration of all the relevant sectors, including agriculture and the Forestry Development Agency (FDA).
- The country needs to establish strategies for dealing with food safety.
- Finally, but not least, there is a need to create a budget line for IHR and to allocate funding for IHR core capacity building from domestic and international sources.
### Republic of Liberia Scores

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<th>Capacities</th>
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<td>P.1.1 Legislation, laws, regulations, administrative requirements, policies or other government instruments in place are sufficient for implementation of IHR.</td>
<td>2</td>
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<tr>
<td></td>
<td>P.1.2 The state can demonstrate that it has adjusted and aligned its domestic legislation, policies and administrative arrangements to enable compliance with the IHR (2005)</td>
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<tr>
<td><strong>IHR Coordination, Communication and Advocacy</strong></td>
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<td><strong>Zoonotic Disease</strong></td>
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<td></td>
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<tr>
<td><strong>Food Safety</strong></td>
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<tr>
<td><strong>Biosafety and Biosecurity</strong></td>
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<td><strong>Immunization</strong></td>
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<td><strong>National Laboratory System</strong></td>
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<td><strong>Reporting</strong></td>
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<td>R.2.3 Emergency Operations Program</td>
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<tr>
<td>Linking Public Health and Security Authorities</td>
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<td>Medical Countermeasures and Personnel Deployment</td>
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<td>4</td>
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<td>4</td>
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<tr>
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<td>R.5.1 Risk Communication Systems (plans, mechanisms, etc.)</td>
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<tr>
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<td></td>
<td>RE.2 Enabling environment is in place for management of Radiation Emergencies</td>
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**Note on Scoring of technical areas of the JEE Tool:**

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

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

Should there be significant and irreconcilable disagreement between the external team members and the host country experts or among the external or among the host country experts, the External Evaluation Team Lead will decide on the final score and this will be noted in the Final Report, along with the justification for each party's position.
PREVENT

National Legislation, Policy and Financing

Introduction
The IHR (2005) provide obligations and rights for States Parties. In some States Parties, implementation of the IHR (2005) may require new or modified legislation. Even if new or revised legislation may not be specifically required, States may still choose to revise some regulations or other instruments in order to facilitate IHR implementation and maintenance in a more effective manner. Implementing legislation could serve to institutionalize and strengthen the role of IHR (2005) and operations within the State Party. It can also facilitate coordination among the different entities involved in their implementation. See detailed guidance on IHR (2005) implementation in national legislation at [http://www.who.int/ihr/legal_issues/legislation/en/index.html](http://www.who.int/ihr/legal_issues/legislation/en/index.html).

In addition, policies which identify national structures and responsibilities as well as the allocation of adequate financial resources are also important.

Target
States Parties should have an adequate legal framework to support and enable the implementation of all of their obligations and rights to comply with and implement the IHR (2005). In some States Parties, implementation of the IHR (2005) may require new or modified legislation. Even where new or revised legislation may not be specifically required under the State Party’s legal system, States may still choose to revise some legislation, regulations or other instruments in order to facilitate their implementation and maintenance in a more efficient, effective or beneficial manner.

State parties should ensure provision of adequate funding for IHR implementation through national budget or other mechanism.

Republic of Liberia Level of Capabilities
There is a legal framework to support and enable the implementation of IHR. However, Liberia has been depending on the Public Health Law enacted in 1976. The Public Health Law and associated legislation and policies are being revised. There are inadequate human resources to implement legislations and policies. For example, there is a shortage of Veterinarians and Epidemiologists. Moreover, the financial resources are insufficient to implement legislations and policies hence the need to create a budget line and allocate resources for IHR in the national budget.

Recommendations for Priority Actions
The following are recommended in order to achieve the desired impact and sustainability:

1. Revise the 1976 Public Health Law to incorporate the IHR requirements so as to enable enforcement of the Public Health Law and other IHR legal instruments.
2. Build capacity on IHR core competence implementation and enhance inter-sectoral collaboration.

The Senator on the health committee in the Senate and Former Minister for Health, Hon. Dr. Peter Coleman, committed to expedite the formulation of the appropriate laws and legislation.
3. Sensitize all relevant stakeholders on their roles and responsibilities on IHR.
4. Create a budget line and allocate financial resources to support IHR implementation.

**Indicators and Scores**

**P.1.1 Legislation, laws, regulations, administrative requirements, policies or other government instruments in place are sufficient for implementation of IHR**

**Score: 2 (Limited Capacity)** Assessment of relevant legislation, regulation, administrative requirements and other government instruments for IHR (2005) implementation has been carried out.

**Strengths/Best Practices**
The availability of legislations such as: the Public Health Law, the Environmental Protection Act and other laws is a key strength in ensuring that the IHR core capacities are built and sustained, though some require revision. There is ongoing revision of the Public Health Law to address emerging issues. There is a very strong political and partners’ commitment to revise and implement public health laws and this was demonstrated by Hon. Dr. Peter Coleman (chairperson of the Senate Committee on Health) who committed that as legislators “they are available and ready to ensure the alignment of the laws with the requirements of IHR”. There is clear evidence of inter-sectoral collaboration and coordination to implement legislations in the country. The availability of staff especially at the national level will ensure alignment of the domestic legislation and policies with the IHR. There are efforts to adopt and scale up the “One Health” approach and to ensure that Public Health laws will increase the relevant capacity in both animal and human health.

**Areas which need strengthening/Challenges**
The existing 1976 Public Health law needs to be revised so that it will include all the IHR 2005 requirements. The framework for inter-sectoral collaboration and partnership needs to be clearly stipulated because it is key in the IHR implementation. The Government of Liberia needs to continue with capacity building at all levels. Limited financial and human resources at all levels to implement legislations needs to be addressed. Making One Health a national policy will increase government financial input which strengthens and speeds up implementation of IHR in all sectors of the Liberian society and increases collaboration of all stakeholders in the country.

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

**Score: 2 (Limited Capacity)** Assessment of relevant legislation, regulation, administrative requirements and other government instruments for IHR (2005) implementation has been carried out and adjustment needs have been identified.

**Strengths/Best Practices**
The Government of Liberia has developed or domesticated some of the laws and policies which are related to the aspects of the IHR core capacities.
Areas which need strengthening/Challenges
There is need for financial and human resource mobilization. Capacity building needs to be strengthened at all levels. Public education and awareness needs to done. One Health is a good platform to mobilize resources locally and internationally to build core capacities in all fields to fully implement One Health.

Relevant Documentation
The following documentation have been availed:

- National Forestry Reform Law,
- Agriculture Law,
- Liberia Maritime Law,
- Plant and animal quarantine law,
- 1976 Public Health Law,
- Fisheries and Food safety Policy,
- Maritime Authority Act
IHR Coordination, Communication and Advocacy

Introduction
The effective implementation of the IHR requires multi-sectoral/multi-disciplinary approaches through national partnerships for effective alert and response systems. Coordination of nation-wide resources, including the designation of an IHR NFP, which is a national center for IHR communications, is a key requisite for IHR implementation.

Target
The NFP should be accessible at all times to communicate with the WHO IHR Regional Contact Points and with all relevant sectors and other stakeholders in the country. States Parties should provide WHO with contact details of NFPs, continuously update and annually confirm them.

Republic of Liberia Level of Capabilities
Prior to the EVD outbreak, the strategy to enhance partner coordination included: information systems strengthening; common annual planning; standard guidelines, norms and evaluation. Partner coordination mechanisms included: the Health Sector Coordination Committee (HSCC); the National Disaster and Relief Commission; the Health Coordinating Committee (HCC), and numerous technical committees. In addition, there were special mechanisms including: the Global Fund, Pool fund, the World Bank funds, FARA; joint planning, annual reviews.

During EVD outbreak, a national EVD Task Force was set up that became the Presidential Advisory Committee on Ebola (PACE). Also set up were the Incident Management System (IMS), the IMS thematic/technical working groups, the County EVD Task Forces chaired by Superintendents, the County Technical Committees/IMS chaired by CHO, the District EVD Task Forces, and the Community EVD Task Forces.

Post the EVD outbreak, the following coordination mechanisms have been institutionalized: The national Task Force under the office of the President, the Health Sector Coordination Committee (HSCC); the Incident Management System (IMS); the One Health Coordination Committee; the National Surveillance Technical Coordination Committee; the County Disaster Task force chaired by the Superintendent; County Surveillance Technical Coordination Committee; District Disaster Task Forces; Community Disaster Task Forces. Key stakeholders and their roles and responsibilities have been stipulated including: The Office of the President for Policy, Coordination, Advocacy and resource mobilization, the Ministry of Finance and Development Planning (MFDP) for resource mobilization; the Ministry of Internal Affairs (MIA) for local leadership and community engagement during disaster; the Ministry of Health (MoH) for planning coordination and monitoring and evaluation, the Ministry of Agriculture (MOA) for zoonotic vaccine preventable disease control, partners for technical and financial support; capacity building and Monitoring and Evaluation (M & E) and the community for mobilization and demand generation.
**Recommendations for Priority Actions**

1. Strengthen and sustain a multi-sectoral and multi-disciplinary coordination and communication mechanism with animal health, wildlife, environment and all relevant sectors, including establishing Memoranda of Understanding (MoUs) for joint actions and trainings with relevant stakeholders, such as: security agencies/the Ministry of Defense (MOD). In addition establish a Focal Person (FP) for Veterinary Public Health in the MoH to drive the One Health efforts.

2. Revise the terms of reference for the national IHR centre in the MoH and in the MOA to make them more responsive and accountable to all the relevant sectors.

3. Increase advocacy, awareness raising and sensitization of the local population on the importance of IHR, as well as, promote multi-disciplinary and multi-stakeholders participation in the context of One Health approach and ensure that the IHR centers have necessary capacity and logistics (office, transport, information and communication) to make them more functional.

4. Strengthen cross border coordination, communication and advocacy with all neighbours and other countries in the West African region.

5. Establish a single information platform and regularly produce and disseminate information products (dashboards, bulletins, daily alert, weekly, monthly, quarterly and annual updates) and share them timely with all stakeholders.

6. Conduct annual IHR review meetings and foster a regional review. In addition conduct quarterly multi-sectoral meetings in each county.

**Indicators and Scores**

**P.2.1 A functional mechanism is established for the coordination and integration of relevant sectors in the implementation of IHR**

*Score: 3 Developed capacities* A multi-sectoral, multidisciplinary body, committee or taskforce addressing IHR requirements on surveillance and response for public health emergencies of national and international concern is in place and participated in latest event.
**Strengths/Best Practices**

There is very high political commitment as reflected in a high level coordination mechanism under the leadership of the President - President Advisory Committee on Ebola (PACE). There are efforts to formulate a One Health strategy and a national One Health Committee has been established. A National Disaster Commission has been established under the Ministry of Internal Affairs. A National Disease Surveillance Technical Coordination Committee exists in the MoH with technical working groups (CEBS, Border Coordination Group, EPR, etc.), Emergency Operations Centers established at central level and in all the 15 counties and Incidence Management System has been established at national & county levels. Coordination roles and responsibilities defined for the relevant stakeholders.

**Areas which need strengthening/Challenges**

There are major challenges with coordination with the Ministry of Agriculture and veterinary services. There are no SOPs to streamline coordination mechanisms, yet there are numerous committees and task forces. There is limited information management and sharing with other sectors such as veterinary services, port health authorities, abattoirs and slaughter houses, defense, and environmental health. There is a need to set up a single information platform. Sustaining funding for coordination, multi-disciplinary and multi-sectoral engagement; Capacity building for coordination at national and county levels; Increased advocacy with all stakeholders including line Ministries, Private sector, Faith-based institutions, Partners & the community; Proactive involvement of all stakeholders (multi-disciplinary & multi-sectoral) and Support for communication to facilitate information management. Moreover, there is need for sustained funding for coordination, information management and advocacy for One Health through development of a One Health strategy.

**Relevant Documentation**

- Terms of Reference for the PACE, HSCC, IMS, National Disaster Commission & National surveillance Technical Coordination Committee
- OIE Reports (World Animal Health Information System - WAHIS)
- National Health Transition Plan
- IDSR Guidelines
- EPR plans
- Disaster Management Policy and strategy
- REDISSE project documents
- Term of Reference for One Health Committee (Draft) (*This is the responsibility of the Preparedness and Response group under the Emerging Pandemic Threat (EPT-2)).
Antimicrobial Resistance

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

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

Target
Support work being coordinated by WHO, FAO, and OIE to develop an integrated and global package of activities to combat antimicrobial resistance, spanning human, animal, agricultural, food and environmental aspects (i.e. a one-health approach), including: a) Each country has its own national comprehensive plan to combat antimicrobial resistance; b) Strengthen surveillance and laboratory capacity at the national and international level following agreed international standards developed in the framework of the Global Action Plan, considering existing standards and; c) Improved conservation of existing treatments and collaboration to support the sustainable development of new antibiotics, alternative treatments, preventive measures and rapid, point-of-care diagnostics, including systems to preserve new antibiotics.

Liberia Country Level of Capabilities
The country has not developed any capabilities to address AMR. There is no planned activity to develop a National Action Plan to combat AMR and there is inadequate knowledge about the Global Action Plan on AMR promoted by WHO. AMR Detection, Surveillance and Stewardship programs are not in place. Liberia has a national Infection Prevention and Control program that covers aspects of the Health Care Associated Infections control program but does not have a stipulated health care associated infection –(HCAI) control program. A National Program on Health Care Associated Infection Prevention and Control was launched after the Ebola outbreak and has been established in all the Health Care Settings. There is a draft Laboratory Strategic Plan 2016-2021, but it does not include AMR testing and surveillance. There are documents, National Drug Formulary, National Drug Policy, National Therapeutic Guidelines for Liberia and National IPC plan and guidelines that need to be reviewed and updated according to the current situation of the country.

Recommendations for Priority Actions
1. Establish a National Committee to address the Global Action Plan on AMR involving the different sectors (Human, Animal, Agriculture, Environment, Scientific and Research community, Public and Civil Society) to develop the Liberian National Action Plan on AMR with a One Health approach.
2. Develop a National Surveillance System on AMR based on the Laboratory capacity in Health Care Settings and Hospitals supported by a National Reference Laboratory and a National Surveillance System at the Animal and Agriculture sectors.
3. Strengthen implementation of Health Care Associated Infections Prevention and Control program in Health Care Settings, including Surveillance on HCAI and the Core components of the HCAI programs.
4. Formulate clear policies and guidelines for Antimicrobial Stewardship.

Indicators and Scores

P.3.1 Antimicrobial Resistance (AMR) Detection
There is no National plan for AMR. There is inadequate capacity to handle bacteriology procedures. There is no laboratory network at national level and the National Reference Laboratory needs to establish and support a national laboratory network.

**Strengths/ Best Practices**
Address regular AMR testing and laboratory AMR detection and surveillance in the laboratory strategic plan.

**Areas which need strengthening/Challenges**
Conduct a needs assessment for all the laboratories to identify the main gaps so as to support the identification of AMR pathogens.

Improve the laboratory capacity at national level through the establishment of a laboratory network with an apex National Reference Laboratory to establish and maintain standards.

Conduct risk assessment in both human and animal pathogens and establish a database of all the antimicrobials used in the country.

Establish a National Action Plan for AMR in a One Health context.

**P.3.2 Surveillance of infections caused by AMR pathogens**

Score # 1

There is no Surveillance System developed or planned for AMR.

**Strengths/ Best Practices**
The Draft Five-Year Laboratory Strategic Plan will be updated to address regular AMR testing, detection and surveillance. Liberia has a National therapeutics and essential list of medicines to guide use of the most common drugs and medicines. The drug policy and a Medicines and Health Products Regulatory Authority (LMHRA) Act have been formulated to guide and reinforce rational use of medicines.

**Areas which need strengthening/Challenges**
Establish a surveillance system for infections caused by AMR pathogens, including designation of selected sentinel sites as part of the National Action Plan on AMR.


**P.3.3 Healthcare associated infection (HCAI) prevention and control programs**

Score # 2

The foundation for a National HCAI program has been set.
**Strengths/ Best Practices**

There is a draft National IPC plan and guidelines. Front-line health workers have been trained on IPC practices. IPC guidelines and material have been distributed to health facilities which have designated IPC focal points.

**Areas which need strengthening/Challenges**

Implementation of the Health Care Associated Infection guidelines at National Level, including regular training and monitoring and evaluation.

**P.3.4 Antimicrobial stewardship activities**

**Score # 1**

There is limited Antimicrobial stewardship in place.

**Strengths/ Best Practices**

**Areas which need strengthening/Challenges**

Establish a robust AMR stewardship program for the country.

**Relevant Documentation**

- Five year strategic plan for NLS of Liberia_draft4 2016
- Medicines & Health Products Regulatory Authority (LMHRA) Act
- National drug policy 2001
- Draft National IPC program and guidelines for health care
Zoonotic Disease

Introduction
Zoonotic diseases are communicable diseases and microbes spreading between animals and humans. These diseases are caused by bacteria, viruses, parasites, and fungi that are carried by animals and insect or inanimate vectors may be needed to transfer the microbe. Approximately 75% of recently emerging infectious diseases affecting humans is of animal origin; approximately 60% of all human pathogens are zoonotic.

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

Republic of Liberia Level of Capabilities
The Republic of Liberia’s zoonotic disease detection and response capabilities were tested during the Ebola Virus Disease (EVD) Outbreak in 2014-2015 and three (3) subsequent flare ups 2015-2016. Liberia implements a Community Event-Based Surveillance Program which includes community triggers for animal health events that notifies and engages the community and health sectors.

In addition, the Government of Liberia has worked to increase communication regarding zoonotic diseases by designating a representative from various government sectors including the Ministry of Health, Ministry of Agriculture, Forestry Development Authority and Environmental Protection Agency (EPA) to the One Health Coordination meeting.

Recommendations for Priority Actions
1. Identify priority zoonotic diseases of domestic and wildlife in the communities.
2. Educate and raise awareness in communities on zoonotic diseases control and good animal husbandry practices and welfare.
3. Prioritize resources in order to ensure the reduction of potential spill over of zoonotic diseases into the human population.
4. Enhance veterinary services and increase research into livestock diseases.
5. Develop the initial and continuous training of veterinary personnel.
7. Develop a multi-sectoral approach to zoonotic diseases at the National, County and Local levels.

Indicators and Scores

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

Score: 2 Country has determined zoonotic diseases of greatest national public health concern but does not have animal zoonotic surveillance systems in place

Strengths/ Best Practices
The Government of Liberia has committed potential implementing partners including the USAID Emerging Pandemic Threats-2 programme consisting of the FAO Component, PREDICT and Preparedness and Response; and NGOs to strengthen Veterinary service including zoonotic disease surveillance, diagnostic capacity and veterinary laboratory infrastructure improvement. Standard operating procedures have been developed for field sampling for zoonotic diseases. Some surveillance has been initiated and additional field training will be performed.
Areas which need strengthening/Challenges
There is currently no formal link (in terms of information sharing) between the animal health and human public health. Current surveillance for animal bites (suspect rabies) under the integrated disease surveillance and response system (IDSR) has established a “link” between human and animal health through collaboration between the ministry of health (MOH) and the ministry of Agriculture (MOA). However the practice of information sharing is rather inconsistent, non-systematic, or insufficient. There is a need to strengthen screening of Livestock entering border crossing points and inspect them at the Points of Entry, testing can be performed and animals quarantined, as necessary.

P.4.2 Veterinary or Animal Health Workforce

Score: 2 Country has animal health workforce capacity within the national public health system.

Strengths/ Best Practices
The Government of Liberia has identified the need for additional Veterinary and Animal Health Workforce and has assigned livestock officers to each of the 15 counties.

Areas which need strengthening/Challenges
Liberia currently does not have a field network and established procedures to conduct fully functional zoonotic disease surveillance due to inadequate staff and technical capacity. Workforce development should include the resources to train and compensate personnel including veterinarians, animal scientists, and laboratory technicians in order to provide a robust animal health infrastructure within Liberia. The current educational system in Liberia does not offer the option of a veterinary degree.

A human resource capacity in good agricultural practices and farmer’s empowerment in food security and healthy animal origin food production, including zoonotic disease control, would reduce the risk of transmission of zoonotic disease. In addition, establishment of public health and food safety sections under the Livestock Department at MOA would also limit zoonotic disease risk.

P.4.3 Mechanisms for responding to zoonoses and potential zoonoses are established and functional

Score: 2 National policy, strategy or plan for the response to zoonotic events is in place.

Strengths/ Best Practices
Animal health and wildlife sectors have led animal surveillance and performed research in animals and wildlife.

Areas which need strengthening/Challenges
Capacity Building in field veterinary service and disease surveillance is critical for response. There is a need to reactivate the veterinary laboratory to full functionality in order to respond to potential zoonotic disease events. It would also be beneficial to have a designated IHR focal point at Ministry of Agriculture

Relevant Documentation

IDSR technical Guideline for Liberia June 2016

Performance of Veterinary Services (PVS) January 2013
Food Safety

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

Target
State parties should have surveillance and response capacity for food and waterborne diseases’ risk or events. It requires effective communication and collaboration among the sectors responsible for food safety and safe water and sanitation.

Republic of Liberia Level of Capabilities
Liberian authorities state that food safety monitoring is on-going though it is not well coordinated in a structured integrated surveillance system. Currently, the Ministry of Health only issues food safety permits, instead of food safety certificates, to food establishments. Liberian authorities have noted that there are ongoing efforts amongst the Mano river union countries to strengthen inspection and quarantine measures for cross-border live food animal trade to control animal diseases of economic and public health importance. There are sector guidelines for food safety standards at the Ministry of Agriculture and Ministry of Health. However, there is no established surveillance system for foodborne diseases to assist in implementing these standards.

Recommendations for Priority Actions
In view of Liberia’s current lack of capabilities for detecting and responding to foodborne disease and food contamination, it is recommended that the following priority areas be addressed:

1. Establish a comprehensive foodborne disease surveillance system.
2. Build and sustain the capacity in human resource, logistics, infrastructure and technical support at all levels, including laboratories, to promote the enforcement of Public Health Law.
3. Strengthen Inter-sectoral collaboration according to institutional mandates to implement the Public Health Law.

Indicators and Scores

P.5.1 Mechanisms are established and functioning for detecting and responding to foodborne disease and food contamination:

Score: 1 No mechanism in place

This indicator refers to detection and response to food-related events and an enabling environment for putting food safety control mechanisms in place with appropriate legislation, laws or policy, and with the involvement of multiple sectors. The indicator also refers to the detection capacity which includes surveillance but also the laboratory capacity required for the verification of any events. From the country presentation, subsequent
discussions and site visits, no comprehensive evidence was found to suggest that Liberia has the capacity for detecting and responding to foodborne disease and food contamination.

**Strengths/ Best Practices**

Liberia has National Food Safety guidelines, though not enforced. The country is a member of International Food Safety Network, Codex and the West African Trade Organization. In addition, a National Standards Laboratory has been established with limited but developing capability. The National Standards Laboratory is currently involved in the testing of the different bottled water brands in Liberia and a number of locally available food items circulating in Liberian markets. There are also focal persons in relevant government ministries but there is limited coordination or communication amongst them. Given the constraints that Liberia faces, authorities have been able to conduct periodic inspection of food establishments and to issue permits and clearances before opening food establishments.

**Areas which need strengthening/Challenges**

Liberia requires capacity building in terms of human resources, logistics, infrastructure and technical expertise. The newly established National Standards Laboratory has limited capacity for microbiology and focuses only on detection. The National Standards Laboratory is in the process of becoming international organisation for standardisation (ISO) compliant and as a result cannot currently assist other national laboratories to develop quality systems. It is apparent that there is limited inter-sectoral collaboration in terms of enforcing the public health law. There are clear roles and responsibilities amongst stakeholders but with limited coordination. Lastly, Liberia shares its borders with other developing countries but these borders have been observed to be porous due to poor control. As a result there is unrestricted informal cross border trade of live food animals and other commodities.

**Relevant Documentation**

- Food Safety Guidelines
- National Fortification Alliance
- Liberia Public Health Law
- Fisheries Policy
- National Food Quality Policy
Biosafety and Biosecurity

Introduction
Working with pathogens in the laboratory is vital to ensuring that the global community possess a robust set of tools—such as drugs, diagnostics, and vaccines—to counter the ever evolving threat of infectious diseases.

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

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

Republic of Liberia Level of Capabilities
Liberia is working to improve Biosafety and Biosecurity (BS&S) following the Ebola Virus Disease (EVD) outbreak. Issues were identified during the outbreak relating to laboratory capacity, infection control and personal protective equipment and biosafety and biosecurity training. Liberia is working with international partners to improve in many areas of Biosafety and Biosecurity.

Currently, there are a number of draft regulatory documents relating to BS&S which need to be finalized. In addition, there is considerable goodwill between several stakeholders who are keen to shape the regulatory environment in the future, including: laboratorians, animal health personnel, border security and the Liberian National Police. Most of these stakeholders were actively involved in the EVD outbreak response.

In Liberia, the Environmental Protection Agency provides overall legislation and regulations for compliance with biosafety and biosecurity. Although a draft National Environmental Health Policy exists, it is not comprehensive, and needs to be updated. In addition, there are no national biosecurity or biosafety legislation, regulations or frameworks and there are no official biosafety or biosecurity monitoring activities.

However, partners have supported training for number of staff from the Ministry of Agriculture, the Ministry of Commerce and Industry, the Ministry of Health, the Ministry of Justice, the Liberian National Police, the Bureau of Immigration and Naturalization and the Armed Forces of Liberia. This has contributed to the current strengths of the country’s biosafety and biosecurity capabilities. Further, Liberia has existing documentation – although many of them are in draft form – such as the National Environmental & Health Policy (2010), the 5-year Laboratory Strategic Plan (2016), the National Laboratory Policy (2011), the Biosafety Manual (2012) and the National Infection Protection & Control Guidelines (2016). Furthermore, there exists a catalogue of the specimens collected during the 2014/2015 Ebola outbreak in the country, and there is consolidation of infectious specimens
at the National Reference Laboratory, although there is limited screening for biological weapons at the points of entry.

As with most technical areas of this report the major challenge for implementing measures for biosecurity and biosafety is the limited funding from the government and the dependence on partners for the funding of biosecurity and biosafety activities. There also exists a lack of an explicit national policy addressing biosafety and biosecurity as the latest available document generated in 2012, was never finalized and was largely focussed towards the laboratory. Other guidelines for biosecurity and biosafety were crafted with the assistance of the World Bank (2009) to aid the Environmental Protection Agency regulations, but these are in draft and are presently not implemented. To date there remains no biosafety level-3 laboratory in the country which is recommended for handling highly infectious pathogens.

As a result of the Ebola outbreak of 2014/2015, there has been investment in the development of medical waste management facilities at hospital level, infection, prevention and control standard operating procedures, Safe and Quality Services strategy, and safe specimen handling and transportation practices have been strengthened. From the laboratory perspective there has been a move towards molecular means of testing such as polymerase chain reaction and serology to limit the need for culturing dangerous pathogens.

Although training on biosecurity and biosafety does occur, it is partner driven and there is no official training program and plan. Consequently, the trainings are not well coordinated and often exclude some relevant sectors. There is also a lack of risk assessment or safety audit plan for biohazard procedures in all sectors and no framework exists to document, report, investigate and address incidents and accidents related to biological hazards. In addition, there is limited implementation of staff occupational health services in the health sector including vaccinations against pathogens that they may encounter.

There is a need for integration of biosafety and biosecurity training for all relevant stakeholders. Moreover, Liberia needs to develop and implement occupational health and safety and vaccination policies. Furthermore, there is a need for monitoring activities through coordinated biosafety and biosecurity surveillance and implementation of a solid management plan. This can be achieved through the development of a comprehensive national policy on biosafety and biosecurity; designation of focal persons in all relevant sectors, with well-defined roles and responsibilities; a clear monitoring plan for regular safety audits of facilities and institutions dealing in biological hazards; and regular risk assessment of processes and procedures.

**Recommendations for Priority Actions**

To address the challenges Liberia has in terms of biosafety and biosecurity, it is recommended that the country works towards addressing the following priority areas:

1. Develop and implement a comprehensive national policy on biosafety and biosecurity that includes all relevant sectors.
2. Establish linkages to address biosafety/biosecurity among human, animal and environmental health sectors in line with One Health approach and build capacity, as well as, implement strategic actions.
Indicators and Scores

P.6.1 Whole-of-Government biosafety and biosecurity system is in place for human, animal, and agriculture facilities

Score: 2 Some, but not all, elements of a comprehensive biosafety and biosecurity system are in place; country is: Starting the process to monitor and develop an updated record and inventory of pathogens within facilities that store or process dangerous pathogens and toxins and what they house.
Developing, but has not finalized, comprehensive national biosafety and biosecurity legislation. Developing laboratory licensing. Developing pathogen control measures, including standards for physical containment and operational handling and failure reporting systems. Not consolidating dangerous pathogens and toxins into a minimum number of facilities. Not employing diagnostics that preclude culturing dangerous pathogens. Not implementing oversight monitoring and enforcement mechanisms

Following the country presentation and subsequent discussions with input from relevant sectors, there was consensus that Liberia’s self-assessment on biosafety and biosecurity had been underscored. It was agreed that, since evidence had been provided that other sectors of government had undergone training in biosafety and biosecurity, all that was required was an intergovernmental body to coordinate biosecurity and biosafety issues regularly amongst the relevant stakeholders. As a result it agreed that Liberia has some (limited) capacity for biosafety and biosecurity and that the score be increased from 1 to 2. The JEE team site visit to three of Liberia’s national laboratories validated limited capacity for biosafety and biosecurity at all of the selected laboratories. Infrastructure development was viewed as a challenge; including equipment, water and electricity supply.

Strengths/ Best Practices

Partners have supported training for several staff from the Ministry of Agriculture, the Ministry of Commerce and Industry, the Ministry of Health, the Ministry of Justice, the Liberian National Police, the Bureau of Immigration and Naturalization and the Armed Forces of Liberia. This has contributed to the current strengths of Liberia's biosafety and biosecurity capabilities. In addition, Liberia has existing documentation – although many are in draft form as noted above. Additionally, as a result of the Ebola outbreak of 2014/2015, there has been investment in the development of medical waste management facilities at hospital level, infection, prevention and control standard operating procedures, Safe and Quality Services strategy, and safe specimen handling and transportation practices. From the laboratory perspective there has been a move towards molecular means of testing and serology to limit the need for culturing dangerous pathogens but these require further investment, development and accreditation.

Areas which need strengthening/Challenges

The limited funding from the government and the dependence on partners for the funding of biosecurity and biosafety activities remains a challenge. There is no explicit national policy addressing biosafety and biosecurity as the latest available document was, generated in 2012, and was never finalized. To date there remains no biosafety level-3 laboratory in the country which is recommended for handling highly infectious pathogens.

Additionally, there is a need for monitoring activities through coordinated biosafety and biosecurity surveillance as well as, implementation of a solid management plan. This can be achieved through the development of a comprehensive national policy on biosafety and biosecurity; designation of focal persons in all sectors, with well-defined roles and responsibilities; monitoring plan for regular safety audits of facilities and institutions dealing in biological hazards; and, regular risk assessment of processes and procedures. Further, it will be important to identify the locations of high-risk pathogens and to secure them in a minimum number of facilities.
P.6.2 Biosafety and biosecurity training and practices

**Score: 2** Country has conducted a training needs assessment and identified gaps in biosafety and biosecurity training but has not yet implemented comprehensive training or a common training curriculum.

General lack of awareness among the laboratory workforce of international biosafety and biosecurity best practices for safe, secure and responsible conduct.

Country does not yet have sustained academic training in institutions that train those who maintain or work with dangerous pathogens and toxins.

**Strengths/ Best Practices**

There has been training by partner organisations of a growing number of individuals from the Ministry of Agriculture, the Ministry of Commerce and Industry, the Ministry of Health, the Ministry of Justice, the Liberian National Police, the Bureau of Immigration and Naturalization and the Armed Forces of Liberia.

**Areas which need strengthening/Challenges**

Although training on biosecurity and biosafety does occur, it is partner driven and there is no official training program and plan. Consequently, the trainings are not well coordinated and often exclude some relevant sectors. There is also a lack of risk assessment or safety audit plan for biohazard procedures in all sectors and no framework exists to document, report, investigate and address incidents and accidents related to biological hazards. In addition, there is poor implementation of staff occupational health services in the health sector. What is needed is integration of biosafety and biosecurity training for all relevant stakeholders, and development and implementation of occupational health, safety and vaccination policies beyond the draft phase.

**Relevant Documentation**

- EVD specimen cataloguing report
- Five year Laboratory Strategic Plan - draft 4: 2016-2021
- Health & Safety guidelines for National Health Laboratory System for Liberia draft – 2012
- National IPC program and guidelines for HC settings for Liberia – 2016 (draft)
- National Laboratory Policy of Liberia 2011(out-dated)
- National Technical Guidelines for Integrated Disease surveillance and Response – 2016
- National Environmental and Occupational Health Policy 2010
Immunization

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

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

Republic of Liberia Level of Capabilities
The immunization system of Liberia has experienced some major setbacks during the devastating Ebola Virus Outbreak of 2014 when immunization coverage dipped compared to previous years. For example, the percentage of fully immunized children went from 70% in 2013 to 46% and 54% in 2014 and 2015, respectively. On the other hand, the country has invested resources both in terms of technical assistance, funding and building of infrastructure by international partners during the EVD crisis to also improve health services delivery including immunization. As a result, coverage rates are improving, reaching 70% for both yellow fever and measles vaccine coverage.

The country has a national-level comprehensive multi-year plan (cMYP) for the immunization program from which annual plans are developed. Vaccine preventable diseases that are covered in this program include: Tuberculosis, pertussis, diphtheria, tetanus, hepatitis B, haemophilus influenza type B, poliomyelitis, pneumococcal infections, rotavirus diarrhoea, measles, and yellow fever.

Recommendations for Priority Actions

1. Conduct Data Quality improvement to address issues such as over-reporting, incomplete reporting and use of correct denominators to determine vaccination coverage.
2. Improve access to vaccination, especially in geographically isolated areas and enhance equity between rural and urban areas.
3. Ensure the maintenance and/or replacement of aging cold chain equipment at health facilities

Indicators and Scores

P.7.1 Vaccine coverage (measles) as part of national program

Score: 3 Developed capacity: 70-89% of the country’s 12-month-old population has received at least one dose of measles containing vaccine, as demonstrated by coverage surveys or administrative data; plan is in place to reach 90% within the next three years.

Strengths/ Best Practices

Immunization is free in Liberia. Findings from KAP studies and Focus Group Discussions have been used to develop appropriate and robust communication messages. Community involvement such as the participation of community health workers and local authorities is significant and has helped create and sustain the demand for child vaccination including measles. The quarterly EPI review meetings organized among local staff offer unique opportunities for monitoring vaccination performance but also for sharing best practices and providing feedback to EPI service providers for improvements. Support by partners during campaigns and routine immunization
contribute to maintaining good vaccination coverage. The availability of the cold chain at central and regional levels also plays a major role in improving measles and other childhood vaccinations coverage.

**Areas which need strengthening/Challenges**
Current efforts to address community distrust experienced during the EVD outbreak must be enhanced; the country needs to improve data quality and build the capacity of EPI service providers; Communication to stimulate demand of routine vaccination; and the breakdown of aging cold chain equipment is a major challenge.

**P.7.2 National vaccine access and delivery**

**Score: 4** Demonstrated capacity: Vaccine delivery (maintaining cold chain) is available in 60-79% of districts within the country OR Vaccine delivery (maintaining cold chain) is available in 60-79% of the target population in the country; functional vaccine procurement and forecasting lead to no stock outs at the central level and rare stock outs at the district level.

**Strengths/ Best Practices**
Liberia has an extensive cold chain supply system with one national cold store and two additional regional cold stores—one in each of the fifteen counties. All the health facilities that provide immunization services have refrigerators. Vaccine delivery is available in 80% of districts. The country has built on the post EVD outbreak momentum and used international partner support to strengthen its immunization services delivery system.

**Areas which need strengthening/Challenges**
Immunization outreach services, especially in geographically isolated areas needs improvements. As Liberia is recovering from the Ebola Virus Disease Outbreak and while it is currently receiving substantial resources and technical assistance, it is important that it builds on its experiences and uses this opportunity to strengthen logistics in the health sector in general and its cold chain system in particular. Liberia needs to address problems of frequent breakdowns of refrigerators at health facilities and poor management of vaccine stock at the periphery.

**Relevant Documentation**

WHO EPI Program:

WHO Measles and Polio eradication programs

DETECT

National Laboratory System

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

Target
Real-time bio-surveillance with a national laboratory system and effective modern point-of-care and laboratory-based diagnostics.

Republic of Liberia Level of Capabilities
Significant improvements were made in Ebola Virus Disease laboratory testing during and following the EVD outbreak in 2014-2015 and three (3) subsequent flare ups in 2015-2016 where there was a significant influx of foreign medical teams and trainers. Since containment of the EVD outbreak, Liberia no longer relies on foreign personnel to perform EVD testing.

A temporary laboratory space has been set-up at the Liberian Institute for Biomedical Research (LIBR) to test for EVD. However, this space requires significant personnel protective equipment and to adequately allocate the space to ensure protection from exposure to EVD. In addition, the regional laboratories also have EVD testing capability. The LIBR conducts microbiology testing and houses the National Reference Laboratory. The facilities, areas and some equipment are in place but it will be necessary to establish a national plan to develop the other areas including: bacteriology with special focus on Antimicrobial Resistance, Foodborne diseases surveillance and quality control. The LIBR which is housing the National Public Health Reference Laboratory (NPHRL) should evaluate the situation and capacity of the laboratories in the different health facilities and establish a plan to implement a National Laboratory Network, Laboratory Surveillance System and provide support to the Ministry of Health. In addition, the NPHRL should join efforts with other reference laboratories at the Ministry of Agriculture and Ministry of Commerce and Industry in order to support the national activities related to emerging and re-emerging public health risks and IHR.

Recommendations for Priority Actions
1. Update the Laboratory Policy and Finalise the Strategic Plan
2. Expand testing capacity for the IDSR Priority diseases
3. Improve Laboratory data management and reporting – Laboratory Information System development
4. Build Human Resource capacity for the laboratory system
5. Strengthen the Laboratory system at all levels - Public Health and Clinical
   a. Based on Essential Package for Health Services
   b. Supply chain of Laboratory Commodities and Equipment
   c. Enhance and Expand Laboratory Infrastructure
   d. Develop Quality Management System (QMS) including external quality assurance (EQA) and Biosafety/biosecurity
6. Pursue Accreditation of Laboratories
**Indicators and Scores**

**D.1.1 Laboratory testing for detection of priority diseases**

**Score: 2** National laboratory system is capable of conducting 1-2 core tests

**Strengths/ Best Practices**

Significant progress has been made regarding the detection of EVD. The National Public Health Reference Laboratory (NPHRL) and two additional regional laboratories (Bong and Tappita EVD laboratories) have the capability to test for EVD. During the last three outbreaks, the flares were detected early and were contained within the first 24 hours and the country administered the required Medical Counter Measures (MCMs) locally. This shows the progress that Liberia has made in the area of EVD detection and MCM deployment. A five year Laboratory Strategic Plan exists and the NPHRL has good facilities.

**Areas which need strengthening/Challenges**

Liberia does not have the capability to test for a number of IDSR Priority Diseases in country, therefore samples are sent out of the country for testing. During the EVD outbreak and response, the NPHRL discontinued all bacteriology testing and is beginning to re-establish these capabilities. It is necessary to establish a National Plan to improve the Laboratory capacities in order to respond to public health threats. Joint efforts among NPHRL, Veterinary Laboratory and the National Standard Laboratory (NSL) should be established. In addition, there are significant issues with equipment availability and maintenance at the laboratories. It is important to establish a mechanism to maintain and repair biomedical equipment. Many pieces of equipment have been damaged by the fluctuation of power. Consequently, the laboratories need to have uninterrupted power supply with functional emergency generators.

**D.1.2 Specimen referral and transport system**

**Score: 3** System is in place to transport specimens to national laboratories from 50- 80% of intermediate level/districts within the country for advanced diagnostics

**Strengths/ Best Practices**

The specimen transportation system is partially funded and resourced. The designated partner, Riders-for-Health supports with the transport of clinical and public health specimens from health care facilities in the counties to centrally located laboratories.

**Areas which need strengthening/Challenges**

The road system in Liberia is not very well maintained and it can be very difficult to transport materials in a timely manner. Cold-chain management, collection and transportation of samples continues to be a challenge.

**D.1.3 Effective modern point of care and laboratory based diagnostics**

**Score: 2** Minimal, laboratory diagnostic capability exists within the country, but no tier specific diagnostic testing strategies are documented. Point of care diagnostics being used for country priority diseases.
**Strengths/ Best Practices**
There is donor funding to procure medical laboratory equipment, reagents and consumables, and renovation of some laboratory facilities. IDSR specimen collection materials are procured and distributed to all counties.

**Areas which need strengthening/Challenges**
During the EVD outbreak the national laboratory system was devastated, including human laboratory diagnostic testing other than for EVD. Currently, the National Reference Laboratory (NPHRL) for human samples does not have mycological testing capability and the bacteriological testing capacity is under development. In addition, the animal disease testing and surveillance capabilities are limited due to lack of infrastructure and equipment.

### D.1.4 Laboratory Quality System

**Score: 1 There are no national laboratory quality standards**

**Strengths/ Best Practices**
The Liberia National Standards Laboratory has initiated a quality management program and the country is working to get ISO certification. The government is also working to establish a National Standards Board. There is capacity for food and water testing services to support public health.

**Areas which need strengthening/Challenges**
The National Standards Laboratory should support the National Public Health Reference Laboratory and Veterinary Laboratory in order to develop and establish a Quality Management System.

**Relevant Documentation**
1. Five Year Strategic Plan for the National Laboratory System of Liberia, 2016-2021
2. Integrated Guidelines for Prevention, Testing, Care and Treatment of HIV/AIDS in Liberia, December 2007
5. National Laboratory Policy, October 2011
Real-Time Surveillance

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

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

Republic of Liberia Level of Capabilities
Liberia adopted and rolled out the IDSR strategy in 2004 though it was not fully functional. Following the revision of the strategy by WHO AFRO in 2010, the country commenced adaptation of the second edition of the IDSR Technical Guidelines in 2014 but this was interrupted by the Ebola outbreak later in the same year.

Following the lessons learnt during the EVD outbreak, the MOH embarked on full implementation of the revised strategy in 2015 beginning with completion of adaptation and printing of the second edition guidelines, training materials and reporting tools and building capacity among health workers through training of over 1500 health workers. The list of priority diseases, conditions and events for surveillance was also revised to include:

- 14 immediately reportable epidemic prone diseases & events, including those notifiable under the IHR 2005
- 14 weekly reportable diseases, conditions and events
- 26 monthly reportable diseases, conditions and events of public health importance

Currently, the country is implementing the following real-time surveillance strategies:

Community Events-Based Surveillance (CEBS): CEBS has been implemented in 11 out of the 15 counties in the country. Events occurring are notified to the nearest designated health facility. Also, members of the community who fulfill the CEBS case definitions for IDSR priority diseases are notified and also referred to health facilities. The health facilities report to the District Surveillance Officers (DSOs) or Zonal Surveillance Officers (ZSOs) who are charged with the responsibility for responding. CEBS data are reported to the district, then county and national level on a weekly basis.

Indicator based surveillance that includes syndromic surveillance is health facility based. When a person fulfills the IDSR case definition for any disease, condition or event,

- Appropriate clinical care is provided
• The District Surveillance Officer is notified immediately using the quickest method (VHF radio, phone, text) for immediately notifiable diseases, conditions and events
• Laboratory specimen are collected in accordance with the IDSR guidelines
• The IDSR Case Alert and Lab Submission Form is filled as required
• For weekly reportable diseases, conditions and events, all cases identified in the week are summarized by each health facility at the end of each epidemiological week and reported to the district level, including zero reporting. Districts report to County level which maintains an excel spreadsheet of weekly reports. Counties submit their excel reports to the national level weekly. At the national level, data from clinical sites is matched with laboratory results.
• For monthly reportable diseases, conditions and events, all cases identified in the month are summarized by each health facility and reported to the district level using a paper-based system. Districts collate their data and report to the County level which enters the data in DHIS2.

**Sentinel Surveillance** is conducted for selected diseases and pathogens. Currently, sentinel surveillance is ongoing for:

- Neglected Tropical Diseases (NTDs) and Lassa Fever (LF) at 11 sentinel sites
- Rotavirus at 1 sentinel site
- HIV at 30 sentinel sites

The MOA has identified 11 priority diseases, 2 diseases (rabies and brucellosis) of public health importance and 9 diseases of economic importance. FAO and MOA have a surveillance project active in areas where there is an interface between domestic and wild animals. Every county has one livestock officer who liaises with County Health Teams (CHT) and reports to MOA as needed. There exists a formal reporting system for animal health though this system faces challenges that include inadequate numbers of staff at community and district levels.

**Recommendations for Priority Actions**

The recommended priority actions are:

1. Build technical capacity for surveillance, including continuing training in IDSR, IHR, data management, clinician’s role in IDSR and use of innovative technology in IDSR.
2. Develop electronic web-based reporting platforms with harmonization, integration and interoperability of public health and animal health data sources and platforms.
3. Develop a comprehensive animal health surveillance system that sources data from diverse animal health platforms including: clinical, slaughter houses, surveys and the community.
4. Improve collaboration of public health, animal health and environmental health under the One Health platform at national and sub-national levels.
5. Supervise, monitor and evaluate IDSR processes and procedures, including systematic data quality audits (DQA) and IDSR indicator performance monitoring.
Indicators and Scores

D.2.1 Indicator and event based surveillance systems

**Score: 4** Indicator and event-based surveillance system(s) in place to detect public health threats.

**Strengths/ Best Practices**

The surveillance system in Liberia has the following strengths and best practices:

- The country revised the IDSR strategy in line with the AFRO 2010 revision. The revised IDSR Technical guidelines were developed, printed and disseminated in 2015.
- The country has developed a national IDSR 5-year strategic plan that covers the period 2016 to 2020. This will give direction to stakeholders on the implementation of IDSR.
- Surveillance structures have been established at all levels of the health care system.
  - The national structure is within the DPC in the MOH.
  - Counties have public health surveillance officers and livestock officers.
  - Each district and health facility has a public health surveillance focal person.
  - In support of the CEBS system that is operational in 11 out of the 15 counties, the country has trained 3,247 out of the deployed 7,158 Community Health Volunteers who collect and report information on diseases and events in the community.
- IDSR technical capacity has been developed at national, county, district, health facility (HF) and community levels through training of the personnel on IDSR.
- The introduction of the FETP frontline training in the country is further contributing to strengthening of real-time surveillance. There is planned scale-up to intermediate and advanced degree training. There is also collaborative arrangement that allows personnel from Liberia to undertake advanced training in Ghana.
- Notable best practices include:
  - Recruitment of district surveillance officers for all 90 districts in Liberia
  - Roll out of Community Event-Based Surveillance to increase the sensitivity of the surveillance system
  - The MOH has been holding National Surveillance Technical Coordination Committee Meetings that review IDSR implementation and provide direction.
  - The implementation of the surveillance for zoonotic viruses at the interface between human and domestic animals and wildlife supported by PREDICT, FAO and P&R is generating valuable information on circulating zoonotic viral agents.
  - The establishment of the Rabies Technical Working Group (TWG) is a demonstration of collaboration between public health and animal health sectors.
  - Piloting of Electronic Disease Early Warning System (eDEWS) in four (4) counties.

**Areas which need strengthening/Challenges**

To achieve a strong real-time surveillance system, there is need to:

- Roll out of CEBS to the remaining 4 counties.
- Release laboratory results to the requesting units and districts in a timely manner so as to guide disease management and public health measures.
• Adopt feedback platforms that will ensure surveillance information is widely disseminated to all levels.
• Strengthen coordination between DPC and other programs collecting surveillance information as well as
  the specific disease control programs such as Expanded Program on Immunization, Family Health Division,
  Community Health, Health Management Information Systems, Monitoring and Evaluation, Research, and
  Health Promotion.
• Establish and strengthen the animal health surveillance network to ensure information collection and
  reporting from all levels.
• Establish and strengthen collaboration for surveillance and response between public health as well as
  animal health sectors.

The following challenges still exist:

• CEBS is resource intensive. There currently exists a deficit in the funding commitment for the
  implementation of all components of CEBS in the country.
• There is limited capacity for clinical and public health laboratory services to support real-time surveillance.
• The MOA does not have adequate personnel at all levels to support implementation of surveillance
  activities.

D.2.2 Inter-operable, interconnected, electronic real-time reporting system

Score:  2 Country is developing an interoperable, interconnected, electronic real-time reporting system, for either
public health or veterinary surveillance systems.

Strengths/ Best Practices
• A reporting structure exists at all levels of the public health system
• An Excel based system is being utilized at national and county level for priority disease weekly reporting.
• An electronic early warning system has been developed and is being piloted in 4 out of 15 counties
• An animal health gap analysis was conducted in 2015 and is being acted on.
• The MOH has been working with sub-national levels to increase reporting coverage since 2015 through
  IDSR training
• Counties conduct support supervision to improve IDSR reporting.

Areas which need strengthening/Challenges
• There is need to strengthen reporting IDSR data from all sites including referral hospitals.
• There is incomplete reporting from some facilities.
• Only 1 livestock officer has been trained to use One Health platform for MOA. There is need for training
  more livestock officers.
• According to the national health workers census (2016), the health facility mobile network coverage is
  estimated to be 76%. This will be a challenge to the expansion of eDEWS for real-time surveillance.
• Inadequate numbers of personnel for animal and wildlife surveillance at all levels will hamper real time
  surveillance.

D.2.3 Analysis of surveillance data
Score: 4 Annually or monthly reporting; attributed functions to experts for analyzing, assessing and reporting data.

Strengths/ Best Practices
- The national level analyses and interprets data on epidemic prone diseases on weekly basis
- All counties analyse surveillance data and present the findings at weekly surveillance meetings
- Laboratory data are usually matched to clinical surveillance data at national and county levels.
- The surveillance program produces a national weekly epidemiological bulletin which is disseminated to stakeholders (partners, counties, etc.). The bulletins are used for information sharing and feedback on priority diseases, conditions and events.
- There is validation of data from county level with that at the national level
- The MOA reportable diseases are analysed monthly.
- There is regular production of the weekly epidemiological bulletins and weekly presentation of data on epidemic prone diseases to stakeholders during weekly incident management meetings
- The MOA disseminates surveillance information through the web and by the Livestock Communication Officer.

Areas which need strengthening/Challenges
- Analysis and dissemination of surveillance data on diseases reported on a monthly basis is currently not done.
- Surveillance data should be analysed in longer time periods (quarterly and annually to show longer term trends).
- Information from data analysis should be disseminated widely by use of wider-reach platforms.
- The MOA should be supported to establish a database and to establish capacity for consistent data analysis and information sharing
- The MOA should be supported to produce epidemiological bulletins of events in animal populations, establish databases that will be of historical value and to build capacity for data managers.

D.2.4 Syndromic surveillance systems

Score: 4 Syndromic surveillance system(s) in place to detect three or more core syndromes indicative of public health emergencies.

Strengths/ Best Practices
- Syndromic surveillance is the core of IDSR, allowing for surveillance of most IDSR priority diseases, conditions and events like AFP, SARs, influenza and cholera. It is fully functioning in the country at all levels.

Areas which need strengthening/Challenges
- Strengthen the interoperability of the IDSR, DHIS2, Logistics Management Information System, etc.
- Strengthen capacity for laboratory confirmation of the IDSR priority diseases, conditions and events to support syndromic surveillance.

Relevant Documentation
The following legislation, guidelines and policy documents are provided:
• Public Health Law 1976 and revised version
• MOH National Technical Guidelines for IDSR (2016)
• MOH 5 year IDSR Strategic and Operational Plan (2016-2021) draft
• MOH Investment Plan 2015
• Draft IDSR Training Modules 2015 and 2016
Reporting

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

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

Republic of Liberia Level of Capabilities
The Liberia IDSR Technical Guidelines have a list of priority diseases, conditions and events for reporting within the IDSR strategy. The reporting frequency is immediate, weekly or monthly. The reporting flow is initiated by either the community or a health facility that first detects the event. The community focal person reports to the designated health facility which collates the community reports and reports to the zonal or district surveillance officer (DSO). The DSO or ZSO in turn collates all reports/submits to the County Surveillance Officer (CSO) via a paper-based system. CSOs transcribe the reports to an excel template and submit this to the national level.

The Ministry of Agriculture also has a list of priority reportable conditions. The reporting flow is from County to National level, though this is not well developed as the country lacks adequate numbers of livestock officers at all levels.

The designated IHR National Focal Point at the MOH is the Disease Prevention and Control Director who reports to WHO in case of a PHEIC in the country. The NFP rapidly reported confirmed cases of Ebola during the last two flare-ups as well as Lassa fever cases in 2016. The OIE country delegate and focal point for disease reporting exists at the Ministry of Agriculture and reports according to OIE guidelines. The focal point reported rabies and PPR events in 2016.

There is weak collaboration between the MOH and MOA in information sharing. It is noted that even though health facilities have been given the animal health contacts for rabies in the MOA, the contact does not usually receive calls, nor offer technical support to health facilities in need. The opportunity for improvement now exists with the current strengthening of collaboration by operationalizing One Health Committee meetings, and by deploying livestock officers in all counties.

Recommendations for Priority Actions
The following are identified as priority areas:

1. Institutionalize One Health Committee structures at national and sub-national levels with structured information sharing between the IHR NFP and OIE Delegate.
2. Strengthen reporting the structure for animal health events within MOA and develop a surveillance database at the MOA.
3. Build capacity for IHR reporting within the MOH and MOA, including training personnel and providing continued training for the IHR NFP and OIE Delegate.
4. A Food safety focal point SHOULD to be identified and relationship with THE IHR NFP established.
Indicators and Scores

D.4.1 System for efficient reporting to WHO, FAO and OIE

Score: **3 (public health)** Country has demonstrated ability to identify a potential PHEIC and file a report to WHO based on an exercise or real event, and similarly to the OIE for relevant zoonotic disease.

Score: **2 (animal health)** Country has identified National IHR Focal Point, OIE delegates and WAHIS National Focal Points; focal point is linked to learning package and best practices as provided by WHO, OIE and FAO.

**Strengths/Best Practices**

For public health:

- The IHR NFP exists and reports to WHO as prescribed by the IHR 2005 guidelines. This has been tested through real events in 2016.
- Reporting completeness and timeliness are well above the target 80%.

For MOA:

- An OIE designate is in place and reports to OIE-WAHIS within 3 days. PPR and Rabies have been reported in 2016.
- MOA delegates attend MOH Incident Management System meetings for coordination of management of zoonoses.

**Areas which need strengthening/Challenges**

- Nominating dedicated focal persons/IHR focal points in line ministries
- Institutionalizing and supporting formal communication between IHR NFP and OIE delegate
- Training MOH IHR NFP and OIE delegate on reporting PHEICS

D.4.2 Reporting network and protocols in country

Score: **3 (public health)** Country has established protocols, processes, regulations, and/or legislation governing reporting and processes for multi-sectoral coordination in response to a potential PHEIC to WHO and to the OIE for relevant zoonotic disease.

Score: **2 (animal health)** Country is in the process of developing and establishing protocols, processes, regulations, and/or legislation governing reporting to start implementation within a year.

**Strengths/Best Practices**

- Standardized reporting forms are used across the country
- Health facilities have designated and trained surveillance focal persons
- All districts and zones have dedicated and trained surveillance officers.
- During the EVD outbreak and subsequent flare-ups, the country’s protocols were put in place and tested.
- An effective MOH Incident management system (IMS) exists which produces and disseminates daily situation reports to all stakeholders.
The information flow system is strong right from communities to health facilities, districts, counties and national level in accordance with the IDSR strategy.

- The MOA has developed guidelines and SOPs that include reporting.

**Areas which need strengthening/Challenges**

- Establish and strengthen capacity for the MOA reporting from all levels.
- Strengthen capacity for implementation of One Health.
- Establish a central database at the MOA

**Relevant Documentation**

The relevant documents presented are:

- Public Health Law 1976
- IDSR Guidelines June 2016
- IHR Reports of Ebola Virus Disease 2014-2016
Workforce Development

Introduction

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

Target

State parties should have skilled and competent health personnel for sustainable and functional public health surveillance and response at all levels of the health system and the effective implementation of the IHR (2005). A workforce includes physicians, animal health or veterinarians, biostatisticians, laboratory scientists, farming/livestock professionals, with an optimal target of one trained field epidemiologist (or equivalent) per 200,000 population, who can systematically cooperate to meet relevant IHR and PVS core competencies.

Republic of Liberia Level of Capabilities

The country is commended for the post-Ebola efforts to build workforce capacity at national and intermediate levels, as well as, the quick mobilisation of human resources, financial and technical support during the EVD outbreak. While human health has appreciable human resource capacity at national level, animal health is grossly under resourced. Moreover, there are other cadres that are still needed to ensure full compliance with the requirements of workforce development. One-Health workforce is therefore a critical area that needs a lot of improvement. To address this gap, the Ministry of Health plans to include the workforce development as one of the agenda items during their inter-sectoral meetings.

There exists a human resources for health (HRH) plan in Liberia. For the frontline, intermediate and advanced levels of training in epidemiology, the focus presently is on the in-service training. However, there are plans for pre-service training. The Ministry of Health has plans to select the top and competent staff with basic epidemiology training and move them to the intermediate or advanced level. There are plans to have one additional cohort of basic epidemiology training for the remaining quarter of this year. By end of October, 2016 the Ministry of Health will have trained 100% of all surveillance officers. In addition, the US CDC will be supporting the country to ensure that they have in-country field epidemiology training programme (FETP) at both intermediate and advanced level. Generally, continued professional development/training and training of trainers is one critical area for the country for continuous improvement.

The country is exploring ways of retaining trained animal and human health personnel such as FETP graduates and those that were trained during the recent EVD outbreak through mobilisation of government and donor funding, as well as offering contracts with the agreements from the outset that the trained personnel will serve the public for a specified time period (bonding). In addition, the country is looking at various ways such as salary increment, creating conducive working environment such as regular supply of equipment and medicine. The trained personnel are being encouraged to take ownership and to assist with teaching of the new graduates or staff. Developing a strategy to track and retain qualified staff is challenging because the current government pay is not attractive unless there is donor funding.

Documentation and sharing of lessons learnt during response to major public health events/outbreaks such as the EVD outbreak is being conducted.
Unavailability of a system to track performance was noted as a challenge. There is a gap between communities and health facilities. However, there are efforts to make use of communities (gCHV) in addressing maternal health related issues. The country is keen to improve infrastructure, including: roads, health facilities, and emergency/referral transport-ambulances.

**Recommendations for Priority Actions**

1. Mobilize resources to enable continued professional development and training programme in the context of One Health.
2. Ensure that “One-Health” is emphasized in all the trainings such as FETP and laboratory training.
3. Put in place mechanisms to retain trained animal and human health personnel such as FETP graduates and those that were trained during the recent EVD outbreak.
4. Collaborate with training institutions to review the pre-service training curricular to ensure that One Health, IHR 2005, IDSR and Disaster Management are addressed.
5. Proactively enrol professionals from the animal health sector into the field epidemiology and laboratory training programs (FELTP) to build the technical, leadership and managerial skills for national and sub-national surveillance and health leadership (basic, intermediate and advanced FELTP courses).
6. Support exchange visits to established centers for mentoring attachment of critical staff from human and animal health.

**Indicators and Scores**

**D.5.1 Human resources are available to implement IHR core capacity requirements**

*Score: 1 Country doesn’t have multidisciplinary HR capacity required for implementation of IHR core capacities*

**Strengths/ Best Practices**

Although not adequate, human health has appreciable human resource capacity at national level. However there are major gaps for animal health.

**Areas which need strengthening/Challenges**

Firstly the country has limited multidisciplinary capacity for the implementation of IHR core capacities. Critical cadres that are needed include: biostatisticians, information systems specialists and veterinarians for both animal and human health.

**D.5.2 Field Epidemiology Training Program or other applied epidemiology training program in place**

*Score: 3 Developed capacity. One level of FETP (Basic, Intermediate, or Advanced) FETP or comparable applied epidemiology training program in place in the country or in another country through an existing agreement*

**Strengths/Best Practices**

The country has initiated the basic FETP training of frontline health workers through collaboration with Emory University and the African Field Epidemiology Network (AFENET). There are 5 FETP fellows that are undergoing
the advanced training programme in Ghana and there are plans to introduce the intermediate FETP for intermediate level health workers.

**Areas which need strengthening/Challenges**
Additional staff are needed and training should be considered for both animal and human health sectors.

**D.5.3 Workforce strategy**

**Score: 2 Limited Capacity.** A healthcare workforce strategy exists but does not include public health professions (e.g. epidemiologists, veterinarians and laboratory technicians).

**Strengths/ Best Practices**
A health care workforce strategy exists for human health but not for animal health.

**Areas which need strengthening/Challenges**
Capacity development for public health professionals in the human and animal sectors.

**Relevant Documentation**
- Sample field epidemiology training curriculum used in the country
- Public health workforce strategy
- Annual report based on workforce strategy
PREPAREDNESS

Preparedness

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

Target
The effective implementation of the IHR (2005) requires multi-sectoral/multidisciplinary approaches through national partnerships for effective alert and response systems. Coordination of nationwide resources, including the sustainable functioning of a National IHR Focal Point (NFP), which is a national centre for IHR (2005) communications, is a key requisite for IHR (2005) implementation. The NFP should be accessible at all times to communicate with the WHO IHR Regional Contact Points and with all relevant sectors and other stakeholders in the country. States Parties should provide WHO with contact details of NFPs, continuously update and annually confirm them.

Republic of Liberia Level of Capabilities
The country has a national Pandemic preparedness and response plan which was developed in collaboration with MOA in 2007 that needs to be updated. Similarly a national Epidemic Preparedness and Response (EPR) plan exists which focuses on the IDSR epidemic prone diseases. However the country does not have a multi-hazard national public health emergency preparedness and response plan, although an EVD surge capacity is available.

Risk and resource mapping has been conducted – to address IHR relevant hazards and priority risks. The government mobilizes resources and allocates funding for the existing coordination mechanism. Emergency response capacity is available to some extent, however it requires, additional capacity to address chemical, radiological, and nuclear threats; There are inadequate stockpiles available and those available do not include provisions for response to other IHR-related hazards.

The country has been able to develop Disaster management strategy and a national disaster management agency has been established. There is a strong political will and strong governmental leadership as well as strong collaboration between MOH and key stakeholders. The country has a strong experience from the Ebola outbreak response and has been able to develop 15 county EPR plans in line with the National EPR plan.

However, Liberia in the near future should develop a multi-hazard National public Health emergency preparedness and response plan while updating the Disaster Risk Reduction strategy. Permanent isolation sites need to be established and/or improved, accompanied by capacity building for health workers.. Similarly, capacity building in other areas (e.g. chemical, radiological, and nuclear) should be among the priorities while ensuring long term provision of adequate stockpiles.
Among the major challenges the country is facing include: inadequate financing; limited human resources; limited technical expertise in areas such as chemical, radiological, nuclear.

**Recommendations for Priority Actions**

1. Develop a multi-hazard National Public Health (PH) emergency preparedness and response plan. The National PH Emergency Preparedness and Response Plan should be integrated with the POE emergency plans. Moreover, IHR-compliant air and sea plans should also be under the umbrella of the plan. In addition cross border collaboration should be considered during the development of a Multi-hazard PH Emergency Preparedness and Response plan.
2. Scale-up the establishment of permanent isolation sites at all major hospitals,
3. Strengthen the protection and safety of human resources for health,
4. Establish a pool of technical expertise in multi-hazard response including sustaining the smooth continuation of routine health services (including maternal and child health, EPI, OPD etc.),
5. Mobilize adequate resources for preparedness and response and provide adequate stockpile and storage capacity (including PPE, etc.).

**Indicators and Scores**

R.1.1 Multi-hazard National Public Health Emergency Preparedness and Response Plan is developed and implemented

**Score: 1** National public health emergency preparedness and response plan is not available to meet the IHR core capacity requirements. (Annex 1A Article 2)

Liberia has a strong political will and strong governmental leadership; the MOH has strong collaboration with other key stakeholders; the country has learnt a lot from its past Ebola outbreak response experience; it has developed a National and County EPR plans for each of the 15 counties with 15 County Rapid Response Teams (RRT) established and trained; there are trained responders at national and county level; a database has been established and there is Short-term pre-positioning of supplies. Risk mapping for priority public health risks and resources has been completed in 2016.

**Areas which need strengthening/Challenges**

Liberia needs to develop a multi-hazard National public Health emergency preparedness and response plan while updating and reviewing the current Disaster Risk Reduction strategy. Permanent isolation sites need to be established and/or improved and capacity built with subsequent strengthening of the safety of health workers. Similarly, capacity building in other areas (e.g. chemical, radiological, and nuclear) should be among the priorities while ensuring long term provision of adequate stockpiles.

The main challenges affecting the implementation of planned activities include: inadequate financing; limited human resources; limited technical expertise in areas such as chemical, radiological, nuclear.
R.1.2 Priority public health risks and resources are mapped and utilized

**Score: 2 A national risk assessment has been conducted to identify potential ‘urgent public health events’ and resource mapping has been done**

**Strengths/ Best Practices**
The country has a Political will and strong governmental leadership to identify the gaps and address the recommendations of the JEE accordingly. Risk mapping for priority public health risks and resources was completed through the participation of the government sectors and key stakeholders engaged in risk profiling exercise.

**Areas which need strengthening/Challenges**
There is a need for strong collaboration between the MOH and other relevant ministries and agencies. Supplies available in the country are EVD focused and this should be expanded to include other IHR-related hazards. There is inadequate technical expertise especially among the chemical, radiological, nuclear and thus capacity building is required in these areas. Similarly, there is inadequate provision of stockpiles. In general, inadequate financing and limited human resources hamper the smooth implementation of planned interventions.

**Relevant Documentation**
- *National Epidemic Preparedness and Response Plan (April 2016)*
- *15 County Epidemic Preparedness and Response Plans (January 2016)*
- *Rapid Response Team Training package (June 2016)*
- *Disaster Management Policy*
- *Pandemic Preparedness plan*
- *Integrated Risk assessment of public health threats (June 2016)*
Emergency Response Operations

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

Target
Countries will have a public health Emergency Operation Center (EOC) functioning according to minimum common standards; maintaining trained, functioning, multi-sectoral rapid response teams and “real-time” bio-surveillance laboratory networks and information systems; and trained EOC staff capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency.

Republic of Liberia Level of Capabilities
The establishment of the national and county Emergency Operation Centres (EOC) is one of the key strategies and approaches used to fight the Ebola Virus Disease (EVD) outbreak 2014/2015. During the EVD outbreak 13 county structures were rehabilitated and three counties EOC were fully constructed including the national EOC. The EOCs were furnished with office furniture, computers, TV monitors, internet, generators and telephones. These resources will need maintenance to remain operational hence sustainability is an issue. Currently, the EOC convenes meetings which include line ministries and national/multinational partners as the need arises and regularly hosts video conferences with the counties every Wednesday. The EOC is also home to the US Centres for Disease Control and Prevention, the African Field Epidemiology and Laboratory Training Network, the Disease Surveillance Unit and the national Emergency Medical Services 24-hour call centre.

The EOC is currently in a building adjacent to the Ministry of Health of Liberia and is a permanent, well-resourced structure. To operationalise the EOC there is an established Incident Management System, Emergency Operations Plan, EOC Operational Plan, and Emergency Operations Centre Standard Operating Procedure (SOP). There is also surge capacity as demonstrated by 15 County Rapid Response Teams but retention of trained staff remains a challenge.

Recommendations for Priority Actions
To ensure that efforts are made towards developing sustainable capacity for emergency response operations, it is recommended that Liberia prioritises the following:

1. Training and retention of surge capacity staff in emergency response operations competencies
2. Government ownership of the various EOCs so as to ensure funding and facilitate appropriate decision-making
3. Provide authority to the national EOC to mobilize resources required for emergency response
4. Encourage inter-sectoral collaboration by holding inclusive simulation exercises during deactivation phases to test preparedness plans
Indicators and Scores

R.2.1 Capacity to Activate Emergency Operations

Score: 3 EOC staff team is trained in emergency management and PHEOC standard operating procedures and is available for response when necessary.

Strengths/Best Practices
Liberia currently has functional EOCs in 15 counties and 1 national EOC. There is also evidence of district and county Rapid Response Teams that are constituted by staff trained particularly for the response to EVD. The principles of response have been practiced under other circumstances other than EVD such as the response to a measles outbreak, showing that the teams are adaptable to different scenarios.

Areas which need strengthening/Challenges
Areas that require improvement are staff training in emergency management, public health administration and logistics. Working closely with partners during the EVD response helps to transfer skills and knowledge in response to emergencies.

R.2.2 Emergency Operations Center Operating Procedures and Plans

Score: 4 In addition to meeting “developed capacity”, the following EOC plans are in place: concept of operations; forms and templates for data collection, reporting, briefing; role descriptions and job aids for EOC functional positions.

Strengths/Best Practices
Liberia has shown tested capacity of their EOC procedures and plans that were developed as a result of the EVD outbreak. These National and County Emergency Preparedness and Response Plans formed the guiding documents for the response to the outbreak that ravaged the country.

Areas which need strengthening/Challenges
To ensure that all the great strides that were made during and after the EVD outbreak are not lost there should be efforts made towards sustained funding to keep the EOCs functional.
R.2.3 Emergency Operations Program

Score: 4 EOC activated a coordinated emergency response or exercise within 120 minutes of the identification of a public health emergency; response utilized operations, logistic and planning functions.

Strengths/Best Practices
Emergency operations at national and county are decentralized and are guided by sound, well-structured documents. This allows for a certain level of autonomy and decision making. Evidence of this approach was the coordinated response during the EVD outbreak from the national and county EOCs. A key to the success was that, although not all the key stakeholders were involved, the EOC provided multi-sectoral coordination during the EVD outbreak.

Areas which need strengthening/Challenges
For the efficient coordination of response activities and the day-to-day operations of the EOC, logistics capacity and a long-term equipment maintenance plan, beyond the investment period of partners, must be developed. In addition, the mobilization of resources for EOC operations is still partner dependent as the EOC has no resource mobilization authority.

R.2.4 Case management procedures are implemented for IHR relevant hazards

Score: 2 Case management guidelines are available for priority epidemic-prone diseases

Strengths/Best Practices
At present Liberia has in place Hazard specific contingency plans.

Areas which need strengthening/Challenges
The Hazard specific contingency plans are not specific for case management. These plans require development, before they are institutionalized by all relevant stakeholders, as noted by the in-country representatives.

Relevant Documentation
Emergency Operations plan (March 2016)
National Epidemic Preparedness and Response Plan (March 2016)
Disaster management Policy
Emergency Preparedness and Response Plan
Hazard specific contingency plans
Draft National Influenza Pandemic Preparedness and Response Plan
Draft Military Support to Civil Authority Plan
Emergency Operations Center Standard Operation Procedure (March 2016)
Linking Public Health and Security Authorities

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

Target
In the event of a biological event of suspected or confirmed deliberate origin, a country will be able to conduct a rapid, multi-sectoral response, including the capacity to link public health and law enforcement, and to provide and/or request effective and timely international assistance, including to investigate alleged use events.

Republic of Liberia Level of Capabilities
In 2014-15, Liberia faced the Ebola outbreak (classified as public health emergency of international concern) with neighbouring Guinea and Sierra Leone, which necessitated a multi-sectoral response involving both national and international stakeholders. Liberian security services (Armed Forces of Liberia (AFL), Police, border forces) played a critical role to provide the security, order and logistics support to enable the safe delivery of response and other essential health services. They also helped in community focussed surveillance and conducting safe and dignified burials. There has been considerable goodwill and motivation to sustain and expand the public health and security linkages.

Health security is covered in the Liberian Armed Forces Training manual, “Healthcare and Danger”; there is a proposal to extend it to the Police and other security authorities. The role of security services is identified in the 2016 Epidemic Preparedness and Response Plan.

There are clear needs and expectations to institutionalise the existing linkages. A review of existing legal and policy instruments is necessary which could lead to formalized partnership arrangements and development of standard operating procedures. The anticipated framework for national emergency preparedness and response plan could be instrumental to further take forward the linkage between public health and security services.

Recommendations for Priority Actions
1. Integrated capacity development (training, simulations, exercise, experience sharing) on integration and joint working involving relevant security authorities and those in public health.
2. Development and harmonization of appropriate legal, policy instruments and operational package (MOU, SOPs) to ensure multi sectoral health preparedness and response.
3. Reporting and information sharing mechanisms including cross border collaboration
4. Collaboration with stakeholders - outside of the Governments sector
Indicators and Scores

R.3.1 Public Health and Security Authorities, (e.g. Law Enforcement, Border Control, Customs) are linked during a suspect or confirmed biological event

Score: 4 Demonstrated Capacity At least 1 public health emergency response or exercise within the previous year that included information sharing with Security Authorities using the formal MOU or other agreement (i.e. protocol

Strengths/ Best Practices
Liberia has demonstrated capacity to integrate security authorities (AFL, Police, border security) with public health and associated sectors to deliver national emergency response such as 2014-15 Ebola outbreaks and floods. The security sector was critical to ensure the security and logistical platform to mobilise international support and response at the frontline.

There are legislation and policy documentation (Epidemic Preparedness and Response plan) that require security services to collaborate with national health authorities in responding to outbreaks and disasters. The flow of information between the security and relevant sectors has been established and security services play an important role in emergency medical stocks and supplies. The participation of a range of security services during the JEE process further suggests the success of coordination.

Areas which need strengthening/Challenges
There are yet to be organisational and systematic approaches to sustain and further strengthen the good integration demonstrated during the context of Ebola. There is lack of integrated training and limited capacity building within security, public health and associated sectors related to specific roles and responsibilities, information sharing, and coordinated investigation and response.

There is a need for further legal, policy and operational instruments (Memorandum of Understanding, Standard Operating Procedure) to support and sustain the coordination within the security services and with those in public heath nationally and internationally. Funding, logistics and skills are recognised as inadequate and in short-supply.

Relevant Documentation
- Epidemic Preparedness and Response (EPR) Plan
- National Public Health Law  1976
- Military Support to Civil Authority (MSCA) Plan (draft) 2013
Medical Countermeasures and Personnel Deployment

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

Target
A national framework for transferring (sending and receiving) medical countermeasures and public health and medical personnel among international partners during public health emergencies.

Republic of Liberia Level of Capabilities
Liberia has developed policy documents and has attained the political will for the deployment of medical countermeasures. Bodies to govern and oversee the deployment of medical personnel and utilisation of human health products and technology have been formed. These governing bodies have demonstrated their function in the most recent Ebola outbreak (EVD) in 2014-2015 and three (3) subsequent flares ups in 2015-2016 where there was significant influx of medical countermeasures and foreign medical teams.

Medical Countermeasures including vaccines or drugs are not currently produced in Liberia. The only national plan that addresses the use of medical countermeasures is the Republic of Liberia, Avian and Human Influenza Integrated National Action Programme (AHI INAP). In addition, Liberia has no provisions for procuring and distributing animal medical counter measures-MCMs.

The Ebola vaccine has been tested and used in Liberia to prevent potential EVD. Since initially acquiring the vaccine, the stockpiles have been transferred to the Ministry of Health. The Government has increased its ability to actively respond to outbreaks and has prepositioned MCMs in all 15 counties. The last three outbreaks were managed by the counties and the response was initiated within the first 24 hours. This shows the progress that Liberia has made in the area of MCM deployment.

Recommendations for Priority Actions
1. Identify existing collaborations, any gaps, and, where necessary, finalize and exercise plans, guidelines, and relevant agreements for sending and receiving MCM during a public health emergency.
2. Update the pandemic preparedness plan
3. Develop regulations for countermeasures and agreements with other institutions/or with regional/institutional bodies
4. Sustain mobilization of emergency medical supplies and vaccines
Indicators and Scores

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

Score: 4 At least one response OR a formal exercise or simulation within the previous year in which medical countermeasures were sent or received by the country

Strengths/ Best Practices
Liberia’s capacity has increased significantly following the recent EVD outbreaks. National guidelines for receiving drug donations exist and there is logistical capacity to manage and distribute medical supplies and equipment. The Liberian MCM deployment strategy is a best practice and has shown their ability to detect, diagnose, treat and contain EVD quickly in order to prevent additional exposures and save lives. In addition, pharmacists are being trained regarding MCM as a part of their curriculum to increase capacity in the future and to assist with long-term sustainment.

Areas which need strengthening/Challenges
Sustainability of the current MCM stockpiles and infrastructure is likely to be a challenge without donor support due to inadequate resources. Liberia needs to develop a long-term MCM sustainability strategy.

R.4.2 System is in place for sending and receiving health personnel during a public health emergency —

Score: 4 At least one response OR a formal exercise or simulation within the previous year in which health personnel were sent or received by the country

Strengths/ Best Practices
Liberia has shown successful experience of working with foreign medical teams (FMTs) during the recent EVD outbreak. In addition, the Government coordinated the deployment, monitored the work of the FMTs, and facilitated the licensing of FMTs.

Liberia is member of AFENET which helps facilitate rapid exchange of personnel in public health emergencies. Access to technical assistance from existing development partners (e.g. WHO, UNICEF, FAO, MSF, CDC, IOM, USAID) under the leadership of the Government has been demonstrated in recent emergencies.

Areas which need strengthening/Challenges
- Availability of readily available funds for countermeasures and personnel deployment
- Mobilization and deployment of multi-disciplinary, skilled and motivated personnel for any public health emergency
- Documentation of the procedures on deployment of FMTs

Relevant Documentation
- Republic of Liberia, Avian and Human Influenza Integrated National Action Programme (AHI INAP)
- Republic of Liberia, Investment Plan for Building a Resilient Health System, 2015 to 2021
- Republic of Liberia, National Medicines Policy, October 30, 2011
- Medicines & Health Products Regulatory Authority (LMHRA) Act
Risk Communication

Introduction
Risk communication should be a multi-level and multi-faceted process which aims at helping stakeholders define risks, identify hazards, assess vulnerabilities and promote community resilience, thereby promoting the capacity to cope with an unfolding public health emergency. An essential part of risk communication is the dissemination of information to the public about health risks and events, such as outbreaks of diseases. For any communication about risk caused by a specific event to be effective, the social, religious, cultural, political and economic aspects associated with the event should be taken into account, as well as the voice of the affected population. Communications of this kind promote the establishment of appropriate prevention and control action through community-based interventions at individual, family and community levels. Disseminating the information through the appropriate channels is essential. Communication partners and stakeholders in the country need to be identified, and functional coordination and communication mechanisms should be established. In addition, the timely release of information and transparency in decision making are essential for building trust between authorities, populations and partners. Emergency communications plans need to be tested and updated as needed.

Target
State parties should have risk communication capacity which is multi-level and multi-faced real time exchange of information, advice and opinion between experts and officials or people who face a threat or hazard to their survival, health or economic or social well-being so that they can take informed decisions to mitigate the effects of the threat or hazard and take protective and preventive action. It includes a mix of communication and engagement strategies like media and social media communication, mass awareness campaigns, health promotion, social mobilization, stakeholder engagement and community engagement.

Republic of Liberia Level of Capabilities
Risk communication is a core component of the EPR plan in Liberia. The Ministry of Health plays a stewardship role with the objective of timely and appropriate communication of public health threats before, during and after events. The country has developed a risk communication plan which involves roles played by other stakeholders such as the Ministry of Information and the media. Community outreach programmes are being implemented, and communities are educated on risk reduction related to public health. However, there is still a need for strengthening partnership coordination and increasing resource allocation.

Recommendations for Priority Actions
1. Increase resource allocation to implement the risk communication plan and reach areas that are hard to reach
2. Sustain community involvement and participation
3. Identify, train and support more staff at county and district level
4. Improve internal and multi-sectoral stakeholder communication and engagement
Indicators and Scores

R.5.1 Risk Communication Systems (plans, mechanisms, etc.)

**Score: 3** Formal government arrangements and systems in place with standard operating procedures and capacity with multi-sectoral and multi-stakeholder involvement, but insufficient allocation and alignment of human and financial resources.

**Strengths/ Best Practices**
The EVD experience on risk communication made the country move to an outstanding level of practice; the public (including small children) understands and works very well with the risk communication team to improve disease prevention.

**Areas which need strengthening/Challenges**
Increase allocation and alignment of human and financial resources.

R.5.2 Internal and Partner Communication and Coordination

**Score: 4** Effective, regular communication coordination with all partners required by all preceding levels, and their coordination tested by a simulation exercise or tested by a real health emergency.

**Strengths/ Best Practices**
The EVD outbreak had led to improved skills in effective and regular communication with stakeholders and partners at national, county and district levels. The challenge is for the country to sustain this strength.

**Areas which need strengthening/Challenges**
Beside the EVD experience, the country still needs to demonstrate continuous capacity and sustainability over time.

R.5.3 Public Communication

**Score: 4** There is planned communication with continuous engagement and proactive media outreach (including regular media briefings) guided by risk communication best practices and achieves comprehensive geographical coverage, evidenced by regular coverage of health issues and risks in relevant languages as well as by media and social media activity during an emergency.

**Strengths/ Best Practices**
The country is in continuous engagement with communities on public health issues such as disease prevention and immunization. Messages are shared with the community before, during and after outbreaks in vernaculars.

**Areas which need strengthening/Challenges**
The country still needs to identify more communication channels in order to achieve comprehensive geographical coverage.
R.5.4 Communication Engagement with Affected Communities

**Score:** 2 Community level engagement system is semi-formed with mapping of existing processes, programmes, partners and stakeholders. Social mobilization, behaviour change communication and community engagement are included in the national risk communication strategy in the context of health emergencies. Some key stakeholders in this domain are identified at national and intermediate (provincial/regional) level.

**Strengths/ Best Practices**
The risk communication and EPR plan addresses issues of formal community level engagement with partners and stakeholders identified and involved.

**Areas which need strengthening/Challenges**
There is a need to improve regular briefing, training and engagement, monitoring and supervision of social mobilization and community engagement teams.

R.5.5 Dynamic Listening and Rumour Management

**Score:** 3 Routine and event-based systems for listening and rumour management or ongoing system with limited or unpredictable influence on the response

**Strengths/ Best Practices**
Mechanisms to monitor and investigate rumour are in place.

**Areas which need strengthening/Challenges**
Sustain mechanism to monitor rumours and implement risk communication.

**Relevant Documentation**
- National response plan
- Media departments strategy
- Community outreach plans
- Media response plans
- Communication research protocols and publications (formal/informal)
- Examples of rumours and methods for handling them
- Surge capacity plan
- Organisational chart
- Emergency risk communication staff plan
- Plans for communication coordination with external agencies
- Job description for communication staff
- Shared agreement with response agencies
- Emergency response budget sample
- Various meeting notes
- Exercise plans and results
- Training workshop objective/results
- Message clearance plan
- Plan alterations
- Mechanism of sharing plan alteration
- Long-term budget plan
- Agreed upon response plan and coordinated budget plan for emergency communication
OTHER

Points of Entry

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

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

Republic of Liberia Level of Capabilities
The country has set up multi-sectoral committee to discuss and monitor PoE activities. The stakeholders have
assigned focal persons for the PoE. There is the availability and implementation of various laws including: the
Public Health Law of Liberia, the Environmental Protection Agency Act, the Civil Aviation Authority Act, the Airport
Authority Act, the Maritime Authority Act, the Agriculture Law of Liberia and the National Forestry Reform Law.

The country has limited skilled capacity for both animal and human health at the PoE. However, there is good
coordination between the different governments departments. There is border control and security presence at
entry and exit points. At sea and airports; public health emergency plans and training modules are available but in
draft form. In-service trainings were conducted using EVD as an entry point. The Managements of Port Authorities
provided logistical support in coordination with relevant governmental bodies and the private sector also
provided support during the EVD emergency.

A major challenge is limited capacity and sustainability of the efforts put in place during the EVD outbreak.

Recommendations for Priority Actions
1. Develop a contingency plan for designated POEs (N=4) and other priority non-designated POEs per MoH
guidelines, including mechanisms for retaining staff and capacity at the PoE
2. Develop a roadmap for the next 5 years to move to four currently designated POEs and others as
prioritized by the MoH and ensure that these POEs have a sustained mechanism for proper referral of ill
travellers and to integrate the POEs into national surveillance/reporting systems.
3. Ensure that all designated PoE having facilities to detect public health threats
Indicators and Scores

PoE.1 Routine capacities are established at PoE

**Score: 2 Limited capacity;** Designated PoE have access to appropriate medical services including diagnostic facilities for the prompt assessment and care of ill travellers and with adequate staff, equipment and premises.

**Strengths/Best Practices**
There are guidelines and SOPs in place at PoE; and in some cases there are flow charts and information charts on the walls. The staffs are available from both animal and human health. Draft training materials are available for in-service training. The SOPs, Public Health Emergency Plans and Training Modules for sea and airports are under development (first drafts available).

**Areas which need strengthening/Challenges**
There are limited skilled human resources. Training is conducted separately for the human and animal health workforce. There is a need to build capacity at all levels for surveillance, preparedness and response. In addition, there is a need to develop a risk communication plan for sharing information to the public and travellers regarding entry/exit controls.

PoE.2 Effective Public Health Response at Points of Entry

**Score: 1 No Capacity;** No National public health emergency contingency plan exists for responding to public health emergencies occurring at points of entry.

**Strengths/Best Practices**
There are guidelines and SOPs for referrals if an incident happens at the airport for both medical and animal health. At the sea port, the health facility and port health staff respond to health emergencies on a vessel or at the port. Memoranda of understanding (MoUs) with referral centres for animal health are in place, between the MoA and private veterinary facilities. At ground crossing, staffs are available for both animal and human health. Transport is available for referral of both animals and human patients if required. However there is no official quarantine area available for animal health.

**Areas which need strengthening/Challenges**
The main challenges include: inadequately trained human resources, insufficient logistics, inadequate coordination between different partners and sustainability of efforts instituted.

**Relevant Documentation**
- National legislations
  - Public Health Law of 1976
  - Agriculture Act of 1950
  - Airport Authority Act
• Civil Aviation Safety Act
• Environmental Protection Agency Act
• IHR (2005)
• Liberia Demographic and Health Survey – LISGIS
• Liberia Maritime Authority Arrangement of Sections
• IHR core capacity assessment report for sea and air ports
• Land Crossings assessment report
• Sea and Air ports drafted SOPs.
• The act that created the BIN
Chemical Events and Radiation Emergencies

Introduction
State parties should have surveillance and response capacity for chemical risk or events / radio-nuclear hazards/events/emergencies. It requires effective communication and collaboration among the sectors responsible for chemical safety, industries, transportation and safe disposal.

For radiation, it requires effective communication and collaboration among the sectors responsible for radio-nuclear management

Target
State parties should have surveillance and response capacity for chemical risk or events / radio-nuclear hazards/events/emergencies. It requires effective communication and collaboration among the sectors responsible for chemical safety, industries, transportation and safe disposal.

For radiation, it requires effective communication and collaboration among the sectors responsible for radio-nuclear management.

Republic of Liberia Level of Capabilities
In Liberia, experience in managing the harmful impact of exposure to chemicals and radiation on public health is still in its infancy. Authorities (Environment Protection Agency, Land, Mines and Energy, National Standard Laboratory, Ministry of Agriculture, Liberia Medicine and Health Regulatory Authority, and Ministry of Defense) have developed organization specific guidance but lacks in legislative framework and multi-sectoral coordination to enable their implementation.

Reports of uncontrolled release of chemicals are not uncommon (industrial explosions, agro-chemical spillage, industrial affluent discharge) and public concerns over chemicals and radiation safety are on the rise in parallel to their increasing availability, use and the application.

There has been no chemical or radiation assessment done in the last 5 years, except the Liberia Medicine and Health Regulatory Authority inventory on expired chemicals in storage at the National Standard Laboratory. Liberia has ratified major international convention i.e. the Rotterdam Convention, Basel Convention, Stockholm Convention and Biological Weapons convention and the current emphasis is on the context of CBRN (chemical, biological, radiological and nuclear) health security.

Recommendations for Priority Actions
1. Develop and implement regulatory and coordinated institutional framework for the planning and management of chemicals, biological, radiation and nuclear public health risk and impacts.

2. Develop coordinated capacity, practical guidance and operating procedure for the detention, response and containment of the accidental and deliberate release of chemicals and radiological agents.

---

1 To align with GoL reporting format of national capacities on chemical and radiation, we submit here a combined report for these two technical areas from the JEE Team
3. Formulation of a National CBRN risk assessment team comprising stakeholder from ministries and agencies of government. This should include the development of a National Action Plan on CBRN and explore consideration of chemical and radiation monitoring into national public health surveillance programme.

Indicators and Scores

Chemical Events

CE.1 Mechanisms are established and functioning for detecting and responding to chemical events or emergencies

Score 1: No mechanism in place

CE.2 Enabling environment is in place for management of chemical Events

Score 1: No mechanism in place

Radiation Emergencies

RE.1 Mechanisms are established and functioning for detecting and responding to radiological and nuclear emergencies

Score 1: No mechanism in place

RE.2 Enabling environment is in place for management of Radiation Emergencies

Score 1: No mechanism in place

Strengths/ Best Practices

Liberia has made progress to establish a national platform for CBRN and has conducted needs assessment. The country has ratified a number of relevant global conventions and adopted the UN Security Council Regulation 1540. In addition, a national focal person for CBRN identified.

Areas which need strengthening/Challenges

For both chemicals and radiation, Liberia has shared a range of gaps which include:

No legislative or institutional framework to manage the public health risk of exposure to toxic chemical and radiation. This has limited the capacity of national authorities in enforcement and control jurisdiction.

There is a need to strengthen multi-sectoral communication, collaboration and coordination beginning with the National CBRN platform.

There is apparently an acute shortage of capacity to support public health surveillance of CBRN, response, containment and medical toxicology. There is also a lack of understanding of wider stakeholders over chemical and radiation risk.
Establish a robust coordination mechanism for systematic information sharing among relevant sectors to be involved in chemicals and radiation surveillance and emergency response.

**Relevant Documentation**
- The National Needs Assessment Analysis for CBRN (March 2016)
- Guidelines for handling chemicals and radiological materials
- Reference provided that Government of Liberia ratified to
  - The Rotterdam Convention
  - The Stockholm Convention
  - The Basal Convention
  - The Biological Weapons Convention
  - The International Atomic Energy Agency
Appendix 1: Joint External Evaluation Background

Mission Place and Dates
Monrovia, Republic of Liberia; 5 to 9 September, 2016

Mission Team Members:

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Country</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Ambrose Otau TALISUNA</td>
<td>Team Lead</td>
<td>Congo</td>
<td>WHO/AFRO</td>
</tr>
<tr>
<td>Dr. Yohannes GHEBRAT</td>
<td>Member</td>
<td>Eritrea</td>
<td>WHO</td>
</tr>
<tr>
<td>Dr Shikanga O-TIPO</td>
<td>Member</td>
<td>Sierra Leone</td>
<td>WHO</td>
</tr>
<tr>
<td>Dr. Roland SULUKU</td>
<td>Member</td>
<td>Sierra Leone</td>
<td>FAO</td>
</tr>
<tr>
<td>Ms. Susan WEEKLY</td>
<td>Co-Lead</td>
<td>U.S.</td>
<td>Department of Defence</td>
</tr>
<tr>
<td>Ms Mary Anne GROEPE</td>
<td>Member</td>
<td>South Africa</td>
<td>WHO</td>
</tr>
<tr>
<td>Dr. Sohel SAIKAT</td>
<td>Member</td>
<td>Switzerland</td>
<td>WHIO/HQ</td>
</tr>
<tr>
<td>MS. TAKALANI GIRLY NEMUNGADI</td>
<td>Member</td>
<td>South Africa</td>
<td>MoH</td>
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<tr>
<td>Dr Nevashan GOVENDER</td>
<td>Member</td>
<td>South Africa</td>
<td>NICD</td>
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<tr>
<td>Mr. Jorge MATHEU</td>
<td>Member</td>
<td>Switzerland</td>
<td>WHO/HQ</td>
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<tr>
<td>Dr. Faiqa K EBRAHIM</td>
<td>Member</td>
<td>Congo</td>
<td>WHO/AFRO</td>
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<tr>
<td>Dr. Donewell BANGURE</td>
<td>Member</td>
<td>African Union</td>
<td>Africa CDC</td>
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<tr>
<td>Dr. Serigne NDIAYE</td>
<td>Member</td>
<td>Cote d'Ivoire</td>
<td>Atlanta CDC</td>
</tr>
<tr>
<td>Mr. Roland K. WANGO</td>
<td>Technical Officer</td>
<td>Congo</td>
<td>WHO/AFRO</td>
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Objective
To assess (Host Country’s) capacities and capabilities relevant for the 19 technical areas of the JEE tool in order to provide baseline data to support (Host Country’s) efforts to reform and improve their public health security.

The JEE Process:
The Joint External Evaluation process is a peer to peer review. As such, it is a collaborative effort between host country experts and External Evaluation Team members. The entire external evaluation, including discussions around the scores, the strengths, the areas which need strengthening, best practices, challenges and the priority
actions should be collaborative, with external evaluation team members and host country experts seeking full agreement on all aspects of the final report findings and recommendations.

Should there be significant and irreconcilable disagreement between the external team members and the host country experts or among the external or among the host country experts, the External Evaluation Team Lead will decide the outcome; this will be noted in the Final Report along with the justification for each party’s position.

**Preparation and Implementation of the Mission**
- Hold weekly teleconferences on the mission
- Searched for team lead and co-lead
- Put together JEE team
- Shared self-assessment report and other technical documents with JEE team
- Provide logistics assistance to JEE team
- Liaise with WHO Liberia Country Office for routine update on preparations
- Dispatch Advance team from WHO/AFRO to provide technical and logistics support
- Ensure smooth coordination and implementation of the JEE

**Limitations and Assumptions**
- The evaluation was limited to one week’s time which limited the amount and depth of information which could be managed.
- It is assumed that the results of this evaluation will be made publically available.
- The evaluation is not an audit and information provided by the Republic of Liberia will not be independently verified. Information provided by the Republic of Liberia will be discussed and evaluation rating will be mutually agreed to by the Republic of Liberia and evaluation team. This is a peer to peer review.

**Key Host Country Participants and Institutions**
- Senate Committee on Health
- Ministry of Foreign Affairs
- Ministry of Health
- Ministry of Agriculture
- Ministry of Internal Affairs
- Ministry of Defense/ Armed Forces of Liberia
- Ministry of Justice/ Liberia National Police, Bureau of Immigration and Naturalization, Liberia National Fire Service
- Ministry of Commerce and Industry
- Liberia Maritime Authority
- Environmental Protection Agency
- Liberia Airport Authority/ Civil Aviation Authority
- National Port Authority
- Liberia National Red Cross Society
- WHO
- CDC
- USAID
- IOM
- FAO
- UNICEF
- IRC/PACS
- Media Institutions
(See appendix 2 for details)

Supporting Documentation Provided by Host Country

See appendix 3
## Appendix 2: Participants IHR Joint External Evaluation

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<td>Minister of Health</td>
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<td>Deputy Minister for Health Services/ Chief Medical Officer</td>
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<td>Deputy Minister for Planning</td>
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<td>Deputy Minister for Disease Surveillance and Epidemic Response</td>
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<td>Assistant Minister for Planning /Statistics</td>
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## Appendix 3: List of Supporting Documentation Provided by Host Country

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| **Antimicrobial Resistance (AMR)** | - National IPC Program and Guidelines for Health Care Settings, August 2016  
- Five Year Strategic Plan for the National Laboratory System of Liberia, 2016 – 2021  
- National Drug Policy (2001)  
- National Laboratory Policy, September 2011  
- National Technical Guidelines for Integrated Disease Surveillance &Response, June 2016  
- National Therapeutic Guidelines For Liberia and Essential Medicines List, 2011  
- LMHRA act 2010  
- National TB Infection Control Guidelines – 2012 |
| **Food Safety** | - Agriculture Law, Liberian Codes Revised, VOL. II  
- Fisheries And Aquaculture Policy and Strategy, 2014  
- Food and Agriculture Policy and Strategy; “From Subsistence to Sufficiency  
- National Guidelines on Hygiene Promotion, January 2014  
- Public Health Law, 1976 |
| **IHR coordination** | - An Act to establish the National Disaster Management Agency (NDMA), May 2012  
- Avian and Human Influenza Integrated National Action Programme (AHI INAP) 2007  
- Investment Plan for Building a Resilient Health System, 2015 -2021  
- National Disaster Management Policy, October 2012  
| **Legislation, Policy and Financing** | - Agriculture Final Annual Report English  
- Agriculture Law  
- Fisheries Policy_  
- Food and Agriculture Policy and Strategy  
- Hygiene_Promotion_Technical_Guidelines_final_2.6  
- Liberia-GHSA-5-year-RoadMap-2016 (2)  
- Maritime Authority Act  
- National Forestry Reform Law  
- National Technical Guidelines for IDSR, June 2016  
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