

**REPORT OF  
EMERGENCY CARE SYSTEM  
ASSESSMENT AND CONSENSUS-BASED  
ACTION PRIORITIES:**

**THE REPUBLIC OF LIBERIA**

**MAY 2022**



Report of Emergency Care System Assessment and Consensus-based Action Priorities:  
Liberia

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**Contributors**

The individuals who contributed significantly to the Emergency Care System Assessment (ECSA) and participated in the workshop are presented in Annex 1.

**Acknowledgements**

Rose Buhain, WHO Headquarters, is acknowledged for her work in WHO ECSA planning, compiling response data, and preparing meeting materials.

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## **FOREWORD**

The Ministry of Health with support of development partners has made progress towards attainment of SDG3 targets which include Emergency Preparedness and Response to health emergencies. The Ministry in collaboration with partners this year elaborated the National Health Policy(2022-2031) and Health Sector Strategic Plan(also known as Universal Health Coverage road map) 2022-2026.

The new National Health Policy and Strategic Plan focused on the attainment of Universal Health Coverage (UHC) to ensure that everyone who needs quality health care can have it at all times and without enduring financial hardship. One of key components of the new policy and strategy is emergency and critical care. As part of the efforts to strengthen emergency care systems in Liberia, the Ministry requested WHO to support Liberia to conduct the ECSA and come up with priority actions for joint implementation by stakeholders.

This first ever Emergency Care Systems Assessment (ECSA) for Liberia followed my request to WHO and I am happy that it has come to fruition. The ECSA was planned and implemented through a very participatory and inclusive process involving various stakeholders from multiple sectors in Liberia. The ECSA is fully aligned to PAPD 2018-2023, National Health Policy 2022-2031, Health Sector Strategic Plan 2022-2026 and other national, regional and global instruments. It has provided critical and strategic information and framework of engagement with stakeholders for the short and medium terms.

I would like to underscore that this ECSA report and priority actions aim to consolidate gains and improve access to Universal Health Coverage (UHC) and strengthen the overall national Emergency Preparedness and Response efforts.

The Ministry of Health remains committed and determined to continue working with WHO and other partners to deliver effective, equitable and quality health services and move towards attainment of UHC and health security.

I am confident, that we can collectively support the implementation of the priority actions to improve the health and wellbeing of all people in Liberia.

Finally, I would like to sincerely thank WHO and AFEM for supporting the ECSA and consensus building workshop to develop priority actions. Special thanks go to the WHO Country Representative, Dr Peter Clement for the support and guidance that he has tirelessly provided for health and wellbeing of the people in Liberia. Special thanks go to

**Wilhelmina S. Jallah,**  
**Minister of Health**

## **PREAMBLE**

A strong Primary Healthcare (PHC) system is at the core of Universal Health Coverage. A primary health-care approach to service delivery optimizes both primary and hospital-based care. The provision of quality essential health services, which is a prerequisite for UHC, involves healthcare services that are effective, safe and responsive to peoples' needs and preferences. These includes time-sensitive and out-of-hours emergency care and access to critical care services that can only be delivered safely in a hospital setting.

The WHO Integrated people-centred service delivery framework emphasizes emergency, critical and operative care (ECO) services that are linked to communities through primary care and by communication, transportation, referral and counter-referral mechanisms. An integrated planning approach that places longitudinal primary care relationships at the centre of this ECO-system will ensure timely and appropriate access to needed care across the life course.

Liberia health system has suffered multiple shocks ranging from a 14-year civil war, through the Ebola virus disease outbreak to the COVID-19 pandemic. These events have weakened an already fragile emergency care system. The current COVID-19 outbreak highlighted the urgent need of a functional critical care system for the treatment of COVID patients with severe-critical disease. In response to a request from the Ministry of Health of Liberia, WHO, through its Headquarters, Regional and Country Office and in collaboration with the African Federation for Emergency Medicine (AFEM), conducted a system-level assessment of emergency care using the WHO Emergency Care System Assessment (ECSA) tool. Thereafter, a two-day stakeholders' consensus building meeting was held to identify the critical gaps and define a common roadmap for the improvement of emergency care in Liberia.

This report presents a contextual narrative of the emergency care system in the health system of Liberia, the results of the ECSA, priority interventions/actions (System organization, governance & financing; Scene care, data and quality improvement; Facility-based and Emergency preparedness), the implementation matrix and next steps.

I would like to underscore that the successful implementation of the priority actions together with other key instruments in the sector will go a long way towards attainment of UHC and other SDG3 targets in Liberia

I call upon all the stakeholders, Government Ministries, Agencies, development partners including United Nations Country Team, Civil Society Organizations, Private Sector and Academia to support and be part of the implementation of this priority actions to strengthen emergency and critical care in Liberia.

I would like to acknowledge and in special way thank the Minister of Health, Hon Dr Wilhelmina S. Jallah for her leadership and guidance for the successful implementation of the first ever ECSA and development of the priority actions to strengthen emergency and critical care systems for Liberia.

I thank all the stakeholders including government representatives, UN, donors, Civil Society, Private Sector, and Academia for supporting and being part of the ECSA and consensus building workshop to define and validate the priority actions. Let us embark on resource mobilization, joint implementation, coordination and monitoring the implementation of these actions.

**Dr. Clement Lugala Peter**  
WHO Representative for Liberia



## **ABBREVIATIONS**

AFEM	African Federation for Emergency Medicine
CPR	Cardiopulmonary resuscitation
DHIS	District Health Information System
ECS	Emergency Care Systems
ECSA	Emergency Care Systems Assessment
EMS	Emergency Medical Services
EOC	Emergency Operations Control
ESRP	Economic Stabilization and Recovery Plan
EU	Emergency unit
EVD	Ebola Virus Disease
FETP	Field Epidemiology Training Program
HMIS	Health Management Information System
ICS	Incident Command System
IHR	International Health Regulations
IMS	Incident Management System
IPC	Infection Prevention and Control
JEE	Joint External Evaluation
KOICA	Korea International Cooperation Agency
LMIC	Low- and middle-income countries
MOH	Ministry of Health
NAPHS	National Action Plan for Health Security
NRC	National Response Committee
PRF	Patient report form
SPACO	Special Presidential Advisory Committee
SPAR	State Party Self-Assessment Annual Reporting Tool
UHC	Universal Health Care
WHO	World Health Organization

## EXECUTIVE SUMMARY

Integrated people-centred health service delivery requires emergency, critical and operative care services that are linked to communities through primary healthcare and by communication, transportation, referral, and counter-referral mechanisms. The emergency care system is key in this integrated approach. Emergency care systems address a wide range of common medical, surgical, and obstetric conditions, including injury, complications of pregnancy, exacerbations of non-communicable diseases (e.g., asthma, heart attacks, strokes), and acute infections (e.g. sepsis, acute respiratory infections and diarrhoea) as well as in case of outbreaks of communicable diseases and other all-hazard public health emergencies. Robust everyday emergency care systems are essential to preparing for extraordinary complex mass emergencies and preventing collapse of the health system in the face of a stressor, thereby preventing secondary mortality. In this regard, essential components include disaster response and syndromic surveillance.

In Liberia, the Emergency Care System (ECS) is an evolving system, having begun to incorporate pre-hospital services as a vital component of health care service delivery and inclusion of dedicated emergency units within some health facilities. Despite previous experience with Ebola Virus Disease (EVD) outbreaks, the increasing demands and needs brought about by the COVID-19 pandemic exposed the gaps and challenges faced by the ECS. The pandemic exposed the urgent need to re-organise, re-orientate or consolidate ECS to be ready to impact outcomes of patients both in regular and pandemic situations.

With sound planning and organisation, ECS has the potential to address half of the deaths and more than a third of disabilities in low- and middle-income countries. Given the potential to reduce death and disability in Liberia through improvements in emergency care, the government, in collaboration with the World Health Organization (WHO) and the African Federation for Emergency Medicine (AFEM) and the Korea International Cooperation Agency (KOICA), undertook a national system-level assessment using the WHO Emergency Care System Assessment (ECSA) tool.

Key stakeholders were asked to complete the WHO ECSA, an instrument designed to help policymakers and planners assess a national emergency care system and identify country-specific action priorities for high-impact improvements to the emergency care system. A working group was convened from the 4th to 5th May 2022 to facilitate assessment of the existing national emergency care system and identify action priorities for key, context-appropriate improvements to the system.

Each component of the ECSA tool was reviewed with the answers provided by frontline providers prior to the meeting, and the group reached a consensus answer for each item. Based on the consensus responses to the tool, the stakeholders defined action priorities. Finally, the specified action priorities were stratified by the group according to highest priority based on agreed-upon criteria.

Representatives from the following major groups dealing with emergency care in Liberia were represented at the consensus, including:

- Ministry of Health  
Minister of Health; Deputy Minister for Planning; Policy and M&E; Assistant Minister for Planning, Research, and M&E; Policy Advisor to the Minister of Health; Director of Family Health; Acting Director of Nursing; Director of EMR/EMS
- County Health Officers (CHOs): Grand Gedeh, Bong County, Margibi, Montserrado and Nimba
- Medical Directors, Phebe Hospital, CB Dunbar Hospital, Bong Mines Hospital, Liberia Government, Grand Bassa, St. Timothy Hospital, Redemption Hospital, Rally Time Hospital, Jackson F. Doe Memorial Hospital, Tellewoyan Memorial Hospital



- Emergency care providers (doctors, Nurses, and emergency care practitioners from tertiary/regional/district levels)
- National Blood Bank
- Civil Society Organisation
- Non-governmental organisation
- WHO Country Office

The WHO ECSA consensus meeting enabled the key stakeholders to identify critical gaps in the emergency care system, develop a set of priority actions for each component of the system and rank the action priorities to be prioritised into an implementation roadmap. The working group proposed a total of 40 action priorities, these are presented for each component of the ECS below, and details of the discussion on each topic are described in the main document. The Action Priority Matrix shows the top 29 high-priority actions and associated timeframes.

Emergency care is a priority in Liberia, aiming for significant developments in both the pre-hospital and facility-based care system. There is a range of opportunities for improvement, including developing minimum standards for provision of emergency care services, improving data collection and its use for system planning; increasing efficiency through the provision of a national public pre-hospital care service; improved coordination between pre-hospital and hospital-based services; standardising emergency unit processes and clinical care protocols, and developing human resource capacities through a training framework and capacity building efforts, including simulation exercises.

WHO remains committed to supporting the government of Liberia towards implementation of these priorities.

## **ACTION PRIORITIES**

Based on the key stakeholders' discussion and consensus-based results, the following 40 action priorities were identified. These priorities were presented according to the five main domains of the WHO ECSA and further subdivided according to the high priority actions and expected timeframe for implementation. Five of the 40 priorities require document checks to ensure appropriate policies are in place; these are included here and can be easily completed if already in existence and enforced.

### **System organisation, governance and financing**

1. Strengthen the lead national government agency (EMS) to oversee the emergency care system
2. Update legislation regarding access to the emergency care system (including migrants, refugees and other non-citizens)
3. Ensure that the National Health Strategy explicitly includes all elements of emergency, critical and operative care, with financial risk protections
4. Ensure that the UHC benefit package explicitly includes all elements of emergency, critical and operative care
5. Introduce a bystander protection law to ensure that those rendering assistance face no legal problems
6. Develop/strengthen a dedicated funding scheme for emergency care

### **Emergency care data and quality improvement**

7. Implement standardised clinical documentation in the pre-hospital and emergency unit setting
8. Develop a standardised data set for emergency care, link data from multiple sources, amalgamate and analyse data regularly, and use data to inform system design, service planning, and quality improvement at facility, provincial and national levels
9. Formalise interdisciplinary quality improvement systems (e.g. Morbidity and Mortality meetings) in emergency units and ambulance services, with dedicated quality improvement training]

### **Scene care, transfer and transport**

10. Introduce a national community first aid responder system to support ambulance services and, through this process, link to community health assistants
11. Introduce a regulatory framework for public and private ambulance services, including norms and standards for staffing, equipment and medication
12. Introduce a "no refusal" policy ensuring that hospital emergency units assess and stabilise all ambulance patients prior to onward referral
13. Strengthen call taking and dispatch services through computer-aided call taking and dispatch; separating calls into highest priority (P1) and other (P2); introducing dedicated training programs for call takers and dispatchers; introducing bystander advice through scripted services; and introducing medical direction of pre-hospital providers
14. Develop and implement: destination protocols; referral pathways for common emergency conditions, including standardised criteria for referral; and communication protocols
15. Introduce a dedicated training pathway with a defined scope of practice for ambulance providers, and roll out pre-service and in-service training
16. Increase proportion of the population with access to pre-hospital services by

addressing gaps in cellular network coverage

17. Introduce national certification pathways for all clinical ambulance providers

18. Implement a centrally coordinated national first-aid training programme for lay people

### **Facility-based care**

19. Introduce a regulatory framework for emergency units, including norms and standards for equipment, medication, and staffing

20. Introduce formal standardised triage (including a requirement to be triaged prior to registration) in all emergency units, with dedicated triage personnel, time targets, and compliance tracking

21. Strengthen laboratory capacity for emergency diagnostic services

22. Improve access to blood transfusion nationally by strengthening hospital level and national blood services

23. Introduce specific pre-service and in-service training in emergency care for all cadres, including initial resuscitation for dyspnoea, shock, injury and other emergency conditions

24. Introduce standardised emergency care clinical protocols for common emergency conditions

25. Introduce an ambulance diversion policy

26. Introduce a regulatory framework for critical care units, including norms and standards for equipment, medication, and staffing

27. Strengthen rehabilitation service capacity nationally

28. Improve electricity supply to emergency and critical care units

29. Strengthen primary care services

30. Introduce medical specialisation in emergency medicine, critical care and trauma surgery

31. Introduce the WHO safe surgery checklist at all hospitals

32. Develop a national poisons information centre, accessible to clinicians

33. Introduce protocols for written communication with patients about discharge and disposition and with clinicians about patient encounters

34. Strengthen national biomedical engineering capacity

### **Emergency Preparedness:**

35. Introduce regulation requiring facility-level emergency response plans, with annual updates and structured exercises

36. Establish security strategies to protect staff, patients, and infrastructure from violence at all hospitals

37. Strengthen coordination and capacity of existing Health Emergency Operations Centre

38. Expand resource mapping and multi-sector inventory for emergency response using an all-hazards approach

39. Support revision of national multi-hazard emergency response plans and associated coordination mechanisms, ensuring appropriate implementation at regional level with associated monitoring and evaluation

40. Improve national system for detection of, and response to, radiological and nuclear emergencies

**Action Priority Matrix.** 29 High Priority Actions and expected time frames

	<b>REGULATION</b>	<b>COORDINATION</b>	<b>DATA AND QUALITY IMPROVEMENT</b>	<b>PROTOCOLS AND GUIDELINES</b>	<b>TRAINING AND CLINICAL SERVICES</b>
<b>SHORT TERM</b>	Ensure that the National Health Strategy explicitly includes all elements of emergency, critical and operative care, with financial risk protections		Implement standardised clinical documentation in the pre-hospital and emergency unit setting	Introduce formal standardised triage (including a requirement to be triaged prior to registration) in all emergency units, with dedicated triage personnel, time targets, and compliance tracking	Introduce specific pre-service and in-service training in emergency care for all cadres, including initial resuscitation for dyspnoea, shock, injury and other emergency conditions
	Introduce an ambulance diversion policy			Develop and implement: destination protocols; referral pathways for common emergency conditions, including standardised criteria for referral; and communication protocols	Introduce a national community first aid responder system to support ambulance services, and through this process, link to community health assistants (CHAs)
	Introduce a "no refusal" policy ensuring that hospital emergency units assess and stabilise all ambulance patients prior to onward referral				Introduce standardised emergency care clinical protocols for common emergency conditions

				Introduce the WHO safe surgical checklist at all hospitals	
<b>MEDIUM-TERM</b>	Introduce a regulatory framework for public and private ambulance services, including norms and standards for staffing, equipment and medication	Establish a dedicated lead national government agency to oversee the emergency care system		Establish security strategies to protect staff, patients, and infrastructure from violence at all hospitals	Introduce a dedicated training pathway with a defined scope of practice for ambulance providers, and roll out pre-service and in-service training
	Introduce a regulatory framework for emergency units, including norms and standards for equipment, medication, and staffing	Strengthen call taking and dispatch services through: computer-aided call taking and dispatch; separating calls into highest priority (P1) and other (P2); introducing dedicated training programs for call takers and dispatchers; introducing bystander advice through scripted services; and introducing medical direction of pre-hospital providers			Improve electricity supply to emergency and critical care units
	Introduce a regulatory framework for critical care units, including norms and standards for equipment, medication, and staffing				Strengthen laboratory capacity for emergency diagnostic services
	Support revision of national multi-hazard emergency response plans and associated coordination	Strengthen coordination and capacity of existing			Strengthen primary care services

	mechanisms, ensuring appropriate implementation at regional level with associated monitoring and evaluation	Health Emergency Operations Centre			
		Expand resource mapping and multi-sector inventory for emergency response using an all-hazards approach			Improve access to blood transfusion nationally by strengthening hospital level and national blood services
<b>LONG TERM</b>	Update legislation regarding access to the emergency care system (including migrants, refugees and other non-citizens)	Strengthen rehabilitation service capacity nationally			Introduce medical specialisation in emergency medicine, critical care and trauma surgery
	Introduce regulation requiring facility-level emergency response plans, with annual updates and structured exercises				

## 1. INTRODUCTION TO GLOBAL ECS AND THE WHO ECSA

Integrated people-centred service delivery requires emergency, critical and operative care services that are linked to communities through primary care and by communication, transportation, referral, and counter-referral mechanisms. Functional ECS addresses a wide range of common medical, surgical, and obstetric conditions, including injury, complications of pregnancy, exacerbations of non-communicable diseases (e.g., asthma, heart attacks, strokes), and acute infections (e.g., sepsis, acute respiratory infections, and diarrhoea) as well as cases of outbreaks of communicable diseases and other all-hazard public health emergencies (1). A strong ECS is foundational to an integrated approach to everyday emergencies and is essential to preparing for complex mass emergencies and preventing collapse of the health system in the face of surge, thereby preventing secondary mortality. The emergency care system is often the first point of contact with the health system, particularly in areas with barriers to access (2). With sound planning and organisation, emergency care systems have the potential to address half of deaths and more than a third of disability annually in low- and middle-income countries (LMICs) (3,4). The COVID-19 pandemic has shown the key role of the ECS in both responses to acute needs arising directly from SARS-COV-2 infection and providing access as an essential health service when other parts of the health system are unable to function normally.

Despite the potential benefit of an organised ECS, it remains underdeveloped in many countries (5). As a result, emergency care delivery is often compromised due to a lack of supportive legislation, governance and regulation, gaps in funding, and insufficient human and physical resources (5).

The WHO ECSA is a tool designed for systematic assessment of essential components of a country's emergency care system. The main goal of the ECSA is to identify country-specific action priorities for high-impact improvements in emergency care system processes and outcomes. The following components of a national emergency care system are assessed via the ECSA: system organisation; governance; financing; emergency care data; quality improvement; scene care; transport and transfer; facility-based care; and emergency preparedness and security.

Answers to the ECSA are aggregated and presented to a working group consisting of at least a core set of respondents at a two-day in-country consensus meeting. Each question is discussed, and a definitive answer to each is determined. At the end of an ECSA meeting, policymakers and planners discuss and gain consensus on action priorities for emergency care system strengthening. A given country's participants may choose to create a strategy for implementing identified action priorities together at the end of the ECSA consensus meeting or convene a separate implementation meeting with partners.

Given the potential for a strong ECS to reduce morbidity and mortality in Liberia, the Liberian MOH and the WHO employed the evidence-based WHO Emergency Care System Assessment (ECSA) tool with a working group of national emergency care experts and key stakeholders. The working group convened from the 4th to 5th May 2022 to facilitate assessment of the existing national emergency care system as well as to enable identification of action priorities for key, context-appropriate improvements to the system. Each component of the ECSA tool was reviewed with the answers provided by frontline providers prior to the meeting, and the group reached a consensus answer for each item. Based on the consensus responses to the tool, the stakeholders defined key action priorities. Finally, the specified action priorities were stratified by the group according to highest priority based on agreed-upon criteria.

## 2. EMERGENCY CARE IN THE REPUBLIC OF LIBERIA

Liberia is located on the Atlantic coast of West Africa. It covers an area of 111,369 square kilometres and has a population of 5,2 million people – with more than half of all residents (52%) living within cities. Liberia has a pronounced youth cohort, with 60% of the population under age 25 and a median age of 18 years (6, 7).

Currently, there are 861 operational health facilities that provide healthcare across the 15 counties; 62.6% of the health facilities are state-run, and the remainder are private, for-profit, or NGO-led (8). Malaria is the leading cause of mortality and morbidity across the population, followed by communicable diseases such as diarrheal disease and lower respiratory tract infections - common in countries with poor access to clean water and sanitation and vulnerability to food shortages. The burden of HIV/AIDS and injuries is increasing in the 15-49-year age group (8).

Up until 2003, Liberia was affected by more than a decade of civil war and political instability, which left the health system with damaged infrastructure and severe health workforce shortages. In 2014 the EVD outbreak had a devastating impact on the fragile, recovering health system and underdeveloped ECS. The EVD outbreak brought about critical reforms from the Ministry of Health and led to implementation of new health policies such as the Economic Stabilization and Recovery Plan, which included all the key components of Liberia's Investment Plan for a resilient health system (2015-2021). The COVID-19 pandemic further challenged this plan.

The National Health Strategy reports on a 2018 Service Availability & Readiness Assessment (SARA) which was conducted in 35% of the health facilities (8). Improvements since 2016 include increased bed density, increased emergency transport availability, and a slight overall lower health worker density. The readiness or capacity of health facilities to offer required health services was assessed based on the presence and functionality of equipment and supplies necessary to provide services within the following five domains: I) basic amenities, II) basic equipment, III) standard precautions, IV) diagnostic testing, and V) essential medicines. The results showed the following:

- Overall, the capacity for health facilities to provide health services in Liberia, measured by the general service readiness index, is 56% (compared to 53% in 2016).
- Basic amenities essential to providing health services, such as availability of clean and safe water, power, and communication were readily available in 79% of the health facilities (compared to 57% in 2016).
- Availability of basic equipment was 60% (compared to 77% in 2016).
- Standard precautions for infection prevention were available in 68% of the health facilities (compared to 73% in 2016).
- Availability of diagnosis services was 39% (compared to 42% in 2016)
- Availability of essential medicines was 35% (compared to 44% in 2016)

Specific emergency care data from Liberia are limited; however, system-wide challenges are reflected in the ECS. Challenges reported in the situational analysis of the National Health Policy Plan include poor geographical access to care- with a significant proportion of the rural population living more than one hour's walk from a health facility; resource allocation challenges - as hospitals consume a large number of resources, despite their size and utility not being studied using relevant data; poor referral linkages between the various levels of care and a lack of the appropriate skills mix in the health workforce(10). Emergency care is provided by nurses and medical officers, or medical doctors from different specialities. Emergency unit staffing policies differ between facilities, with both rotating and non-rotating staff schedules. There are no formal basic emergency care training programmes available at



present.

Liberia has an Emergency Medical Response Unit within the Ministry of Health, which is responsible for pre-hospital and inter-facility transfer of patients; in addition, some health facilities have their own facility-based ambulances with some fragmentation of limited services.

All health facilities experience ongoing challenges with infrastructure, and interruptions in clean water, sanitation, electricity, and oxygen supplies are frequent. While all facilities provide emergency care out of necessity, a regulatory framework with norms and standards for services and equipment and staffing across the health system is lacking. Where standard guidelines and protocols exist- problems with supply chain, availability of medicines and consumables, and equipment maintenance need to be addressed.

### **COVID-19 and emergency care in the Republic of Liberia**

Liberia had dealt with the most severe Ebola virus outbreak in recorded history between 2014 and 2016 and had learned many lessons in outbreak response, Infection Prevention and Control (IPC) and the value of community-based services in surveillance and management of communicable disease (10).

The COVID-19 response was governed by four separate response structures, each of which had defined roles and responsibilities in the campaign against COVID-19: The Special Presidential Advisory Committee (SPACO), the National Response Committee (NRC), the Incident Management System (IMS) to coordinate the outbreak response and maintain supply lines, and the subnational incident command system (ICS). 14-Military Hospital operated by the Ministry of Defence, and later the former UNOMIL/Star Base, served as the national COVID-19 treatment unit, with basic resources for oxygen provision and critical care.

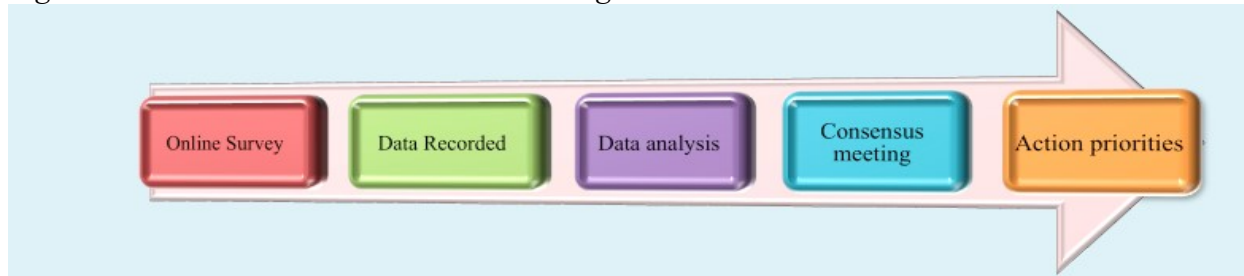
Despite significant investments in healthcare, the COVID-19 pandemic still had a substantial social, economic and health impact on Liberia. In a country with widespread poverty and a large informal sector which serves as a direct source of income for many people (who had been exposed to EVD only a few years beforehand), it was difficult to maintain the same level of vigilance regarding COVID-19. Public health measures and lockdown conditions contributed to a partial/complete disruption in routine health services (~40% disruption in June 2020), and placed an additional burden on the pre-hospital emergency medical response unit and ambulance services. The pandemic exposed existing gaps in emergency care provision and disproportionately affected the health workforce, with a 15% infection rate among health care workers compared to 3% in the general population (8). The lack of emergency and critical care services and standard protocols combined with medication and oxygen supply shortages posed challenges for managing severe cases of COVID-19 that required hospital admission. These severe and worsening resource constraints and increasing demands on the health care system showed an urgent need to re-organise, re-orient, or consolidate resources into a workable national emergency medical service.

## **2.1 EMERGENCY CARE SYSTEM ASSESSMENT WORKING GROUP**

Given the potential to reduce mortality and morbidity in Liberia through improvements in emergency care, the MOH, in collaboration with the WHO, undertook a system-level assessment using the WHO ECSA tool. First, the MOH, supported by the WHO and AFEM, identified key stakeholders from across the country in district and referral hospitals and then collected survey responses to the ECSA survey over two weeks using an online WHO HQ survey through "Token Link". The MOH and WHO identified key stakeholders who have a direct or indirect role and interest in the emergency care system of Liberia. These stakeholders

were asked to complete the ECSA questionnaire with the goal of using the findings to inform the development of action priorities for strengthening the Liberian emergency care system. 22 stakeholders completed the ECSA survey. Responses were submitted to the technical team of WHO HQ.

Figure 1. Data collection to consensus meeting



The MOH organised a working group composed of the stakeholders who had received the ECSA survey and other key stakeholders identified by MOH and WHO. This included representatives from:

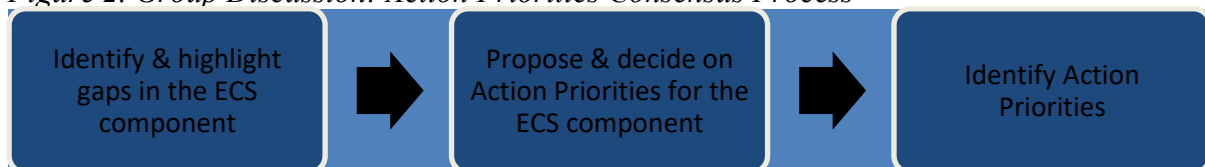
1. Ministry of Health
2. Liberia Medical and Dental Association
3. Liberia Medical and Dental Council
4. National Disaster Management Agency
5. Emergency care providers
6. Non-Governmental organisations

A 2-day multi-level WHO mission preceded the ECSA consensus meeting. The mission included multiple site visits, including the Emergency Medical Services ambulance operational and training base, and 5 referral hospitals (JFK, Redemption, CH Rene, Phebe and CB Dunbar hospitals) in 3 counties (Montserrado, Margibi and Bong). This approach, coordinated across MOH and key Liberian stakeholders, all WHO levels (HQ, region, and country offices), and external stakeholders, added greater understanding of the system and allowed for more in-depth recommendations beyond those captured in the ECSA survey.

The ECSA survey answers were aggregated, and the results were analysed. From 4 to 5th May 2022, the MOH, WHO, and AFEM hosted a working group meeting to review the WHO ECSA results, establish consensus on all responses, identify gaps in the emergency care system, and develop consensus-based action priorities for system development.

The following sections summarise the discussions and conclusions of the ECSA working group. Action priorities are listed together in the executive summary above and are listed by section with discussion highlights below.

Figure 2. Group Discussion: Action Priorities Consensus Process



### 3. RESULTS FROM THE WHO ECSA AND DISCUSSION

#### 3.1 SYSTEM ORGANISATION, GOVERNANCE AND FINANCE

Healthcare is accessed in two ways: private and state-funded health services. The public health system is provided in a tiered structure: primary, secondary, and tertiary facilities. Under the National Health and Social Welfare Policy 2011-2021, two distinct packages of services have served as the cornerstones of the national strategy to improve the health and social welfare of all people in Liberia: the gender-sensitive Essential Package of Health Services, which includes all elements of the Basic Package of Health Services, and the Essential Package of Social Services. Social Welfare has subsequently been transferred to the Ministry of Gender, the National Health Policy is currently under review, and the UHC benefit package is in development (8). Within the MOH, the Department of Health Services embeds Emergency Medical Services within the Division of Curative Services, which encompasses emergency care pre-hospital services. At present, there is no emergency care lead office or agency in the government responsible for all components of emergency care. This has resulted in a lack of central coordination of emergency care activities and a lack of advocacy for appropriate resource allocation to ensure effective implementation of emergency care activities. Participants strongly supported the introduction of such an agency; it was suggested that it should be independent if it were to function most effectively.

The legal framework for emergency care is guided by the 2019 Public Health Law of Liberia. Chapter 26.11 states that "*a health institution shall not refuse a person emergency medical treatment for any reason whatsoever.*" It goes on to state that "*a health institution must attend to a user's immediate and urgent health care needs before asking questions of the user or any member of the user's family concerning payment. The user or the user's family shall supply any requested information promptly before and/or after the user's condition is stabilised.*" (11). As such, the legal framework ensures that the population can access emergency care prior to payment and supports financial risk protection for those needing emergency care. The legislation does not explicitly include all those in the republic, regardless of citizenship or other status, and there is no bystander protection law.

There is no National Health Insurance scheme. The National Health and Social Welfare Financing Policy has established a mixed approach to funding health and social welfare that includes a sustainable level of Government financing, donor support, out-of-pocket user fees and potential areas for risk (10). Funding for emergency care comes from the general taxation base, with no dedicated streams, while users primarily pay for private emergency care out of pocket. Pre-hospital and facility-based emergency care services do not have dedicated budgets; all funding comes from the general fiscus and is supported by user fees.

Clear definitions of the breadth (the range of conditions that count as an emergency) and depth (the extent to which hospital services for an emergency presentation still fall under that emergency definition) of emergency care services covered are lacking. Currently, the decision to manage a condition as an emergency is at the discretion of frontline clinicians with variable training. Participants noted that some of the legislation should be updated, but given that there is health legislation in parliament currently, this would need to wait.

The National Health Policy and the UHC benefit package do not include all elements of emergency, critical and operative care: there is some language about pre-hospital care, and there is mention of emergency care as a priority (10). Participants agreed that these elements should be explicitly mentioned in these documents.

## **ACTION PRIORITIES: SYSTEM ORGANISATION, GOVERNANCE AND FINANCE**

1. Strengthen the dedicated lead national government agency (Emergency Medical Services) to oversee the emergency care system
2. Update legislation regarding access to the emergency care system (including migrants, refugees and other non-citizens)

3. Ensure that the National Health Policy explicitly includes all elements of emergency, critical and operative care, with financial risk protections
4. Ensure that the UHC benefit package explicitly includes all elements of emergency, critical and operative care
5. Introduce a bystander protection law to ensure that those rendering assistance face no legal problems
6. Develop/strengthen a dedicated funding scheme for emergency care

### **3.2 EMERGENCY CARE DATA AND QUALITY IMPROVEMENT**

There is no local or national coordinated, systematic approach to data gathering, management and utilisation. There are isolated data gathering systems within facilities for maternal and paediatric mortality, and emergency care data, including data on emergency conditions, management, and outcomes, are inconsistently gathered for use by policymakers for system planning. EUs have registers, but these are used for statistical reporting purposes and not for case-based data aggregation and analysis. The National EMS teams use registers and patient report forms to collect data, but this is not standard practice in the private sector. Public Health and Disaster Management teams collect data within their remit, but this data is not shared for the purposes of central coordination. Participants recognised the need for standardisation of data sources and for improved utilisation of data to drive system improvement; this was not felt to be the highest priority now but should follow other system interventions.

The National HMIS Policy supports the use of DHIS-2 as a health information system being implemented nationally with the potential to include emergency care data points; however, standardised clinical documentation is inconsistently used in both pre-hospital and EU settings. As a result, clinical data are variably aggregated and analysed within health facilities for quality improvement purposes, and there is no system to link quality improvement data to corrective actions. There are few formalised quality improvement activities in the pre-hospital setting or EUs. Some hospitals run morbidity and mortality meetings, but this is infrequent. Given the potential for data to inform system design and service planning, all participants agreed that it is crucial to introduce a standardised documentation process that supports the future introduction of a quality improvement system.

#### **ACTION PRIORITIES: DATA AND QUALITY IMPROVEMENT**

7. Implement standardised clinical documentation in pre-hospital and emergency unit settings
8. Develop a standardised data set for emergency care, link data from multiple sources, amalgamate and analyse data regularly, and use data to inform system design, service planning, and quality improvement at facility, provincial and national levels
9. Formalise interdisciplinary quality improvement systems (e.g. Morbidity and Mortality meetings) in emergency units and ambulance services, with dedicated quality improvement training.

### **3.3 SCENE CARE, TRANSPORT, TRANSFER AND REFERRAL**

Within the MOH, the Department of Health Services embeds Emergency Medical Services within the Division of Curative Services. Public and private ambulance services function in the capacity of primary response and inter-facility transfer. Coordination of ambulance service coverage is decentralised, with coverage being more robust in urban than

rural areas. The National EMS has a fleet of 58 ambulances, John F. Kennedy Memorial hospital owns an ambulance, and the private ambulance services account for an additional 10 ambulances. Bases are located at hospitals; however, vehicles will be deployed to strategic postings along major transport routes when staffing allows.

Participants reported that 5888 had been allocated as the National emergency ambulance number. Although there is no legislation mandating a toll-free number, the telecommunications companies have committed to supporting this service without incurring an out-of-pocket cost to the user. Private ambulances are contacted individually, not through the national emergency number. A National Public Health Institute hotline, 4455, for medical response to public health-related conditions, e.g. COVID-19, Ebola is also in existence. There is a need to improve public awareness of the difference between the 5888 and 4455 numbers, as participants reported that these are frequently used interchangeably.

The National Ambulance service has been involved in sporadic CPR training for the general public; however, first-aid training courses are not routinely available in the country, and there was strong support for a national plan in this regard. All participants agreed that a national community first-aid responder system to support ambulance services would be valuable and that any new initiatives should consider how best to incorporate existing community health assistants.

Ambulance services are not well regulated, and there are no norms or standards guiding service provision. While there is variation in the operations and management of the private and public ambulance services, it was agreed that in both arenas, particular areas of concern relating to scene care, transport, transfer and referral include:

- Inconsistent use of standardised clinical protocols for triage, medical guidance or referral pathways.
- Absence of systems to determine the most appropriate destination for a given patient.
- Inadequate governance processes relating to the use of ambulances and minimum operating standards.

There are no referral pathways and no policies guiding where ambulances should take patients. In rural areas, this is less of an issue as there is usually only one referral hospital. In urban areas, a policy is needed to guide more appropriate distribution of patients to facilitate the right care, to the right patient, at the right time. A "closest, most appropriate" policy was strongly supported, along with referral pathways for high-priority conditions.

Participants noted that lack of regulations, inadequate equipment, and lack of EMS structure results in inadequate service provision and poor but preventable clinical outcomes. Less than half of ambulances have adequate functioning equipment. Participants all strongly agreed that it is necessary to develop and strengthen regulations and guidelines governing emergency medical services, particularly equipment, consumables, human resources, and vehicle configuration.

#### **ACTION PRIORITIES: SCENE CARE, TRANSPORT AND TRANSFER**

10. Introduce a national community first aid responder system to support ambulance services and, through this process, link to community health assistants
11. Introduce a regulatory framework for public and private ambulance services, including norms and standards for staffing, equipment and medication
12. Introduce a "no refusal" policy ensuring that hospital emergency units assess and stabilise all ambulance patients prior to onward referral
13. Strengthen call taking and dispatch services through: computer-aided call taking and dispatch; separating calls into highest priority (P1) and other (P2); introducing dedicated training programs for call takers and dispatchers; introducing bystander

- advice through scripted services; and introducing medical direction of pre-hospital providers
14. Develop and implement destination protocols; referral pathways for common emergency conditions, including standardised criteria for referral; and communication protocols
  15. Introduce a dedicated training pathway with a defined scope of practice for ambulance providers, and roll out pre-service and in-service training
  16. Increase proportion of the population with access to pre-hospital services by addressing gaps in cellular network coverage
  17. Introduce national certification pathways for all ambulance clinical providers
  18. Implement a centrally coordinated national first-aid training programme for lay people

### **3.4 FACILITY-BASED CARE**

Respondents estimated that very few of the population, in both urban and rural settings, have 24-hour access to facility-based emergency care, defined as a dedicated EU in which patients are I) seen by non-rotating providers trained in emergency care II) formally triaged and seen in order of acuity and III) seen without a requirement for payment prior to care. In rural areas, access is limited primarily due to challenges in geographical proximity to facilities and availability of emergency transportation. In contrast, physical access is better in urban areas, but few facilities meet the minimal functional criteria. Hospitals are not accredited through a national system, although there are definitions of hospital levels.

Referral and first-level hospitals are staffed by a combination of rotating and non-rotating providers. When human resources allow, nurses and physician assistants may be permanently assigned to the EU; however, physicians from inpatient services have on-call responsibilities to cover EU patients but are not assigned to be stationed in the EU. Providers who regularly care for emergency patients are not required to undergo emergency-specific training as part of initial or ongoing certification. There are no emergency-specific post-graduate degree courses for nurses (e.g. a Master's in emergency, trauma or critical care nursing). For doctors, emergency medicine, critical care, and trauma surgery training are not available as speciality programs. The Liberia College of Physicians and Surgeons supports speciality certification in psychiatry, internal medicine, general surgery, obstetrics and gynaecology, paediatrics, and family medicine - with the option for providers to thereafter register as a fellow with the West Africa College of Surgeons and West Africa College of Physicians. Discussions to establish emergency medicine specialist training is ongoing, and while it is a desired outcome, participants agreed that this requires a long-term strategy. An achievable target identified by participants is advocacy for recruitment of adequate human resources with minimum acceptable skills in emergency care provision and introduction of specific pre-service and in-service training in emergency care for all cadres, including initial resuscitation for dyspnoea shock, injury, and other emergency conditions.

Most facilities lack the necessary components to perform formal triage. Participants all strongly agreed that triage is fundamental to the provision of care in the emergency setting with the potential to significantly impact morbidity and mortality, and as such, it is a priority activity to introduce formal standardised triage (including a requirement to be triaged prior to registration) in all emergency units, with dedicated triage personnel, time targets, and compliance tracking.

Accessibility of diagnostic services and functionality of equipment is suboptimal in most facilities. There is limited staffing capacity to support an after-hours diagnostic laboratory and radiology service resulting in challenges in obtaining time-critical diagnostic results.

Intermittent interruptions in the national electricity supply and limited generator capacity further contribute to the ability to provide reliable diagnostic services. Participants agreed that the introduction of a regulatory framework for EUs, including norms and standards for equipment, medication, and staffing is a useful mechanism to establish a benchmark against which services can be compared and serves as a valuable tool for future advocacy efforts to improve emergency care services.

Caesarean sections, emergency laparotomies, management of open fractures, and blood transfusions are infrequently provided at first-level hospitals but are an established package of care provided at referral hospitals. Access to blood transfusion within two hours of injury is limited, particularly in first-level hospitals.

There are no nationally agreed time targets for length of stay for EU patients and no protocols for management of EU throughput (to improve patient flow, such as ambulance diversion policies, overcrowding protocols, or "hold" orders for patients pending admission). There are no standardised protocols or guidelines for emergency conditions. All participants felt that system-wide protocols for emergency care (including clinical and process guidance protocols) for a core set of emergency conditions should be developed.

There is no poison information centre, and while this is a desired service, this was not identified as an immediate priority.

#### **ACTION PRIORITIES: FACILITY-BASED CARE**

19. Introduce a regulatory framework for emergency units, including norms and standards for equipment, medication, and staffing
20. Introduce formal standardised triage (including a requirement to be triaged prior to registration) in all emergency units, with dedicated triage personnel, time targets, and compliance tracking
21. Strengthen laboratory capacity for emergency diagnostic services
22. Improve access to blood transfusion nationally by strengthening hospital level and national blood services
23. Introduce specific pre-service and in-service training in emergency care for all cadres, including initial resuscitation for dyspnoea, shock, injury and other emergency conditions
24. Introduce standardised emergency care clinical protocols for common emergency conditions
25. Introduce an ambulance diversion policy
26. Introduce a regulatory framework for critical care units, including norms and standards for equipment, medication, and staffing
27. Strengthen rehabilitation service capacity nationally
28. Improve electricity supply to emergency and critical care units
29. Strengthen primary care services
30. Introduce medical specialisation in emergency medicine, critical care, and trauma surgery
31. Introduce the WHO safe surgery checklist at all hospitals
32. Develop a national poisons information centre, accessible to clinicians
33. Introduce protocols for written communication with patients about discharge and disposition and with clinicians about patient encounters
34. Strengthen national biomedical engineering capacity

### **3.5 EMERGENCY PREPAREDNESS AND RESPONSE**

Liberia has learnt important lessons in epidemic preparedness from experience with EVD, and follows the revised International Health Regulations (IHR 2005) as the overarching framework that defines its rights and obligations in handling public health events and emergencies that have the potential to cross borders. The State Party Self-Assessment Annual Reporting (SPAR) tool consists of indicators for the IHR capacities needed to detect, assess, notify, report and respond to public health risks and acute events of domestic and international concern (12). The tool consists of 24 indicators for the 13 core IHR capacities and captures elements of emergency response at national and subnational levels (12). Using the revised SPAR tool, Liberia scored 33% in the new health service provision capacity in 2018. Indicators for access to essential health services scored 40%, case management 20%, and IPC/chemical and radiation decontamination also achieved 40%.

In 2021, a regional SPAR was completed to identify the critical components of the public health emergency management system. The SPAR findings illustrate the regional variation in capacity; the AFRO region reported the lowest scores across all capacities (12). The lowest-ranked capacities (scoring <60%) and top challenges were reported in policy, legal and implementation of normative instruments (52%), preparedness for chemical events (55%) and preparedness for radiation emergencies (36%) (12). Among the lowest-ranked, three new indicators were highlighted: gender equality in IHR implementation (45%), workforce surge during a public health event (54%), and healthcare-associated infection surveillance. For the highest-ranked capacities (scoring 70% or higher), good regional performance was noted in: surveillance (81%), health service provision (72%), health emergency management (70%), early warning surveillance function (82%), event management (80%), case management (78%) and laboratory testing capacity modalities (77%) (12).

The first Joint External Evaluation (JEE) to assess the country's capacity to prevent, detect and rapidly respond to public health risks, whether occurring naturally or due to deliberate or accidental events, was conducted by the Liberian MoH, in collaboration with relevant stakeholders, in September 2016. The strengths reported in the JEE included a strong political will for developing capacities using a multi-sectoral approach; strong partnerships at all system levels; considerable progress after the EVD-crisis in all domains of human and public health; establishment of the Field Epidemiology Training Program (FETP); Emergency Operations Centres (EOCs) and IMS at national and intermediate levels; and strong foundations in IPC practices in health facilities.

The 2016 JEE also noted that significant weaknesses continued to exist. These included the absence of a multi-hazard National Public Health Emergency Preparedness and Response Plans; the shortage of a multidisciplinary workforce to implement the IHR core requirements; underdeveloped quality, management and laboratory systems; and poor multidisciplinary coordination and communication mechanisms.

In August 2019, a repeat mid-term assessment using the JEE and NAPHS indicators was carried out. Liberia's JEE score increased from 46 to 48, with improvements in laboratory services, human resources, and surveillance (9). The JEE helps countries identify the most critical gaps within their human and animal health systems to prioritise opportunities for enhanced preparedness and response- a follow-up JEE was planned for 2021 but was delayed by COVID-19. The National Public Health Institute of Liberia (NPHIL) is the lead agency for developing the NAPHS with joint supervision from MoH, One Health Secretariat, and other partners to monitor the progress of implementation of the NAPHS.

Emergency preparedness and response plans in Liberia need additional strengthening. Where multi-hazard response plans are in place, they frequently involve multiple agencies with poor coordination. Few regions hold multi-hazard response plan exercises annually involving pre-hospital hospital services. Current inventories or resource mapping for emergency response are not readily available. Facility-level multi-hazard emergency response plans remain to be



developed and tested- there are no norms and standards for these plans. Participants of the working group agreed that these were a critical priority.

The system for activation and coordination of medical countermeasures and health personnel during a public health emergency is partially developed and requires updating; this has been identified as a gap that needs to be addressed.

Violence against emergency care pre-hospital and hospital providers occurs intermittently. Some facility-level security plans are in place to protect staff, patients or infrastructure from violence, but there are less robust structures in the pre-hospital setting. Security protocols for disaster response, ambulance personnel, and hospital emergency care workers should be reviewed. Participants all agreed that it is necessary to introduce and reinforce security systems (protocols, staff and training) for all emergency and ambulance units.

#### **ACTION PRIORITIES: EMERGENCY PREPAREDNESS AND RESPONSE**

35. Introduce regulation requiring facility-level emergency response plans, with annual updates and structured exercises
36. Establish security strategies to protect staff, patients, and infrastructure from violence at all hospitals
37. Strengthen coordination and capacity of existing Health Emergency Operations Centres
38. Expand resource mapping and multi-sector inventory for emergency response using an all-hazards approach
39. Support revision of national multi-hazard emergency response plans and associated coordination mechanisms, ensuring appropriate implementation at county level with associated monitoring and evaluation
40. Improve national system for detection of, and response to, radiological and nuclear emergencies

#### **4. NEXT STEPS**

WHO ECSA consensus meeting enabled the key stakeholders to identify critical gaps in the Liberian emergency care system and agree on a set of actions for each component of the system. To facilitate further discussion on priority-setting within government and implementing partners, parameters of the action priorities were discussed (cost, impact, political will, urgency and time to execute) to help with prioritisation for implementation. At the conclusion of the meeting, all participants expressed enthusiasm and commitment to taking part in subsequent steps.

Some of these action priorities can be implemented without substantial added resources within the emergency care system. With engagement and coordination of the government, existing partners may be able to help provide technical assistance, program development and piloting as needed to operationalise the agreed-upon priorities.

These priorities represent reasonable and feasible next steps in the development of the Republic of Liberia's national emergency care system. Each of the action priorities above has the potential to significantly improve the emergency care system and the outcomes of acutely ill and injured persons countrywide.

The next steps after the finalisation of this report with input from stakeholders will involve the submission of the report to MOH, following which a multi-sectoral technical working group will be established to coordinate resource mobilisation and implementation of the action priorities at all levels.

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**ANNEX 1: PARTICIPANT LIST at the Stakeholders Consensus Building Workshop**

<b>No</b>	<b>Name of participant</b>	<b>Position</b>
1	Dr. Wilhemina S. Jallah	Minister of Health
2	A. Vaifée Tulay	Deputy Minister for Policy, Planning & M&E
3	Hon. George P. Jacobs	Ass. Minister, Policy, Planning, Research & M&E
4	Christine Brooks – Jarrett	Policy Advisor to the Minister of Health, ECSA- FP
5	Hon. Joseph N. Sonwarbi	Chair, House Committee on Health
6	Cllr. Abla Gadegbeku-Williams	Legal Advisor
7	Linda A.B. Jasper-Kokulo	Curative Services, Admin Assistant
8	Mark Luke	Director, EMR/EMS
9	Boiyan P. Kpadeh	PA/EMD/EMS
10	Abraham B. Tamba	Administrator, EMS
11	Diana Sarteh	Director, Nursing Division, MoH
12	Bentoe Tehoungue	Director, Family Health Division
13	Dr. Tebo Boduo	CHO, Grand Gedeh
14	Dr. Augustine N. Fannieh	CHO, Margibi
15	Dr. Netty N. Joe	CHO, Nimba
16	Dr. Yatta Wapoe	CHO, Montserrado
17	Dr. Cynthia Blapoo	CHO, Bong County Health Team
18	Dr. Jefferson Sibley	Medical Director, Phebe Hospital
19	Dr. Mamawah G. Annan	Medical Director, C. B. Dunbar Maternity Hospital
20	Dr. Seanan Subah	Medical Director, Bong Mines Hospital
21	Dr. Prince C. Mussa, MD	Acting Medical Director, LGH, Grand Bassa
22	Dr. Alvin V. Gray	Medical Director, St. Timothy Gover Hosp.
23	Dr. Daniel Koffa	Medical Director, Singe Health Center
24	Dr. Williamata W. Gibson	Medical Director, Redemption Hospital
25	Dr. John Yangroble	Medical Director, Rally Time Hospital
26	Dr. Wilmot G. Frank	Tellewoyan Memorial Hospital

27	Dr. Amani N. Sarephin	Curran Lutheran
28	Dr. Yarvo M. Wilson	C.H. Rennie Hospital
29	Dr. Phillip Ireland	Head of Emergency Department JFK
30	Yassah M. Barclay	J.F.K. Medical Center
31	Dr. Sia Watta Camanor	Chief Medical Officer, JFK
32	Dr. Fuhway D. Dickson	J.F.K. Medical Center
33	Dr. Edwin N. Sumowar	Head, Emergency, Depart 14 Military Hosp
34	Dr. Zoe Parwon	Chief Medical Officer, 14 Military Hospital
35	Dr. Ponnice R. Dolo	CEO/Medical Director, Jackson F. Doe Memorial Hosp
36	Dr. Emmanuel Ekinnabah	Internist, JFK
37	Dr. Ibrahim Ajami	Medical Coordinator, Star Base COVID-19 TU
38	Dr. Heounohu Hessou	Doctor, MoH
39	Albertha Clark-Kollie	President, LMDA
40	Mr. Henry O. William	Executive Director, NDMA
41	Dorbor Kolubah Kabbah	Clinical Director, LMDC
42	Dr. Onybkachci C. Subah	Director, Blood Bank and Safety
43	Norris George	Coordinator, Family Health Division, MoH
44	Frank P. Martin	Communication Officer, MoH
45	Morris Ellis	Dispatcher, EMS
46	Samuel Gibson	Emergency Medical Technician, EMS
47	Agatha Smith	Emergency Medical Technician, EMS
48	Charles R. McCarthy	Emergency Medical Technician, EMS
49	Joseph G. Teah, Sr.	Emergency Medical Technician, EMS
50	Martee L. Pewee	Emergency Medical Technician, EMS
51	Victoria Williams	Civil Society Organization (CSO)
52	Oliver Wleh Klark	CEO My-Watchman
53	John T. Sarboah, Jr.	Student Doctor, JFK
54	Dovina Rose Kiamu	Medical Student, AM Dogliotti

55	Dr. Clement Peter	WHO Country Representative for Liberia
56	Dr. Charles Ocan	HSS Adviser, WHO
57	Dr. Julius Rude Monday	Health Emergency Cluster Lead, WHO
59	Moses B. Bolongei	HSS Officer/KOICA-funded HSR Project Lead, Liberia

<b>No</b>	<b>Name of participant</b>	<b>Position</b>
60	Dr. Jethro W. Zawolo	JHPIEGO/STAIP
61	Dr. Rachel T. Idowu	US-CDC
62	Prof. Lee Wallis	<b>Lead</b> , Emergency Care and Critical Care, Integrated Health Services, WHO-HQ
63	Antoinette Vanessa Naidoo	Technical Officer, Clinical Services & Systems, Department of Integrated Health Services, WHO
64	Dr. Lauren Veronica Lai King	Chief Operating Officer

**ANNEX 2: ECSA AGENDA**

**Developing Consensus-Based Action Priorities from the Results of the WHO  
Emergency Care System Assessment**

Hosted by Ministry of Health Liberia

&

World Health Organisation, Liberia Country office

May 4<sup>th</sup> and 5<sup>th</sup>, 2022

Royal Hotel

Monrovia, Liberia

**Introduction:** Emergency care systems (ECS) address a wide-range of medical, surgical and obstetric conditions including injury, complications of pregnancy, exacerbations of non-communicable diseases (e.g. heart attacks, strokes), and acute infections (e.g. sepsis, malaria). ECS cover a range of services from care at the scene and transport, through emergency unit care, to early operative and critical care inside a fixed facility and are held together by legislative and governance frameworks. Given the potential to reduce death and disability in Liberia through improvements in emergency and critical care, the in collaboration with the WHO, plans to develop a system-level strategic and operational plan for emergency and critical care strengthening.

The WHO Emergency Care System Assessment Tool has been used to gather information about the national emergency care system from a wide range of experts. The information can then be used to assess the emergency care system, identify gaps and develop consensus around action priorities. The action priorities then become the substrate for an implementation plan that may inform policymakers, health system administrators, healthcare providers and other stakeholders.

**Overall goal:** Develop consensus-based action priorities for strengthening the emergency care system in Liberia using results from the WHO Emergency Care System Assessment Tool (ECSA). These action priorities will be used to guide development of a countrywide implementation plan.

**Working group aims:**

1. Review the WHO ECSA results and identify gaps in the Liberia ECS;
2. Build consensus on action priorities based the WHO ECSA results; and
3. Identify resources and stakeholders key to ECS strengthening in Liberia.

## Agenda

Wednesday, 4th May 2022

09:00 – 10:00	Arrival and Registration, breakfast	
10:00 – 10:05	Welcome and Overview	Hon A. Vaiffee Tulay, Deputy Minister Policy, Planning, Research & Dev
10:05 – 10:15	Opening Remarks	WHO Representative, Dr Clement Peter
10:15 – 10:30	Opening Remarks and Official Opening	Minister of Health, Hon Dr Wilhemina Jallah
10:30 – 10:45	Overview of the process	Prof. Lee Wallis, WHO
10:45 – 11:15	Liberia ECSA results	Prof. Lee Wallis, WHO
11:15 – 11:20	Tea and coffee break	
<i>For all ECS elements listed in italics and grey boxes below, we will: i) review WHO ECSA responses with consensus and responses with discord; ii) highlight system gaps; iii) propose action priorities; and iv) identify key resources and stakeholders for strengthening the respective ECS elements in Liberia.</i>		
11:20-12:00	<i>System Organisation and Governance and Financing</i>	Prof. Lee Wallis, WHO
12:00–13:15	<i>Emergency Care Data and Quality Improvement</i>	Dr. L Lai King, AFEM
13:15-14:15	Lunch	
14:15-15:00	<i>Scene care, Transport and Transfer</i>	Prof. Lee Wallis, WHO
15:00–15:30	Tea and coffee break	
15:30–17:00	<i>Scene care, Transport and Transfer (cont.)</i>	Prof. Lee Wallis, WHO

Thursday, 5th May 2022



08:00 – 08:15	Day 1 Recap and Agenda	WHO, MOH
<p><i>For all ECS elements listed in italics and grey boxes below, we will: i) review and discuss WHO ECSCA responses; ii) highlight system gaps; iii) propose action priorities; and iv) identify key resources and stakeholders for strengthening the respective ECS elements in Liberia.</i></p>		
08:15 –9:00	<i>Facility-Based Care</i>	Prof. Lee Wallis, WHO
09:00 – 09:30	Tea and coffee break	
09:30 –11:00	<i>Facility-Based Care</i>	Prof. Lee Wallis, WHO
11:00 – 12:30	<i>Emergency Preparedness and Response</i>	Dr. L Lai King, AFEM
12:30 – 13:30	Lunch	
13:30-15:30	Review and ranking of action priorities	Discussion
15:30-16:00	Implementation Strategies and way forward	MOH