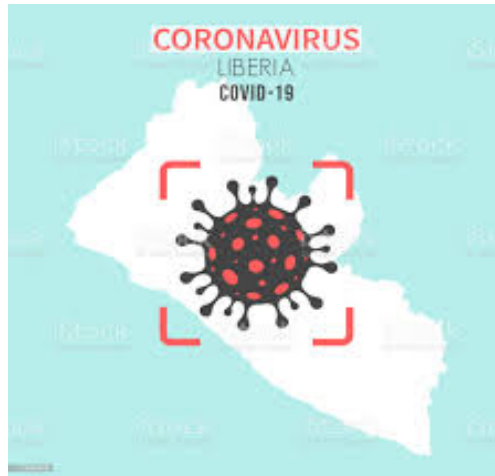


Republic of Liberia



COVID-19 Intra Action Review (IAR) Report



October 30, 2020

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Executive Summary

Introduction

Since the confirmation of COVID-19 on March 16, 2020, Liberia has been battling to interrupt community transmission and reduce the burden of the epidemic on the health system, economic and the population. Liberia is amongst few countries in the Afro region with sporadic cases, very high recovery and low positivity rate of 5.4%. As of October 29, 2020, 1,427 cases were confirmed, 82 deaths and 216 health workers' infection recorded. Liberia with over seven months of response has an opportunity to take stock of what has happened through the intra action review process and proffered recommendations to mitigate the impact of COVID-19 and strengthen the health system to deal with future resurgence.

The overall objective of the Intra Action Review (IAR) is to improve future disease outbreak response based on documented lessons learned and evidence.

The IAR was conducted in mid-September 2020 at the national and county levels with the involvement of all response pillars. At all levels of the exercise, 540 participants attended, including key stakeholders and the Government of Liberia represented by the Ministry of Health and the National Public Health Institute of Liberia. These stakeholders met for a day at the national level and for two days at the county level to discuss and analyze the current COVID-19 response. Participants documented best practices, identified gaps, challenges and proffered recommendations for improving the response and future disease outbreaks.

The IAR was an interactive, structured approach with generic materials developed by WHO. The IAR was not an evaluation of Liberia's COVID-19 response. However, it provided a forum for stakeholders to assess the performance of the response and identify areas for improvement to effectively respond to future resurgence. The review meetings were organized to be virtual and face-to-face to ensure adherence to physical distancing protocol.

Key Findings

The Incident Management System (IMS) is a standardize approach and best practice to manage any public health threat. Considering the experience in Ebola Virus Disease (EVD) epidemic management five years ago, the IMS was activated upon the confirmation of the COVID-19 index case. The COVID-19 consists of four strategic levels; the special presidential advisory committee (SPACO), the National Response Committee (NRC), the IMS that serves as the operational arm of the response with technical experts, pillar leads and the Counties Incident Command System (CICS). These committees were mandated to mobilize resources and make high level decisions to control and manage the response. Liberia's COVID-19 response was characterized by a multi-sectorial approach in order to strengthen resource mobilization, ownership, and holistic decision-making. The daily incident management system meetings at the national and county levels improved coordination among stakeholders and strengthened information sharing. However, the scarcity of financial resources to effectively manage the response operations such as the regular supply of fuel, calling cards, vehicle repairs, risk benefit payment to surge team among others, directly affected the response.

The use of surge teams that had experiences with investigating Ebola Virus Disease (EVD) cases helped reduce risk of infection and improved case investigation. During the response, various strategies were implemented to heighten surveillance and increase testing. Some of these initiatives included the introduction of voluntary samples collection (i.e. enhanced surveillance) in COVID-19 hotspots communities, designated specimen collection centers in Monrovia for voluntary testing, testing of low and high-risks contacts, orientation of stakeholders, consistent airing of risk

communication messages, testing at the airport, testing at the work places and encouraging students to test during the re-opening of schools. These ingenuities helped to increase the number of COVID-19 tests performed. Also, the involvement of community-based organizations and local authorities facilitated community voluntary testing through the enhanced surveillance strategy. The development of an Incident Action Plan with an estimated budget, guided partners to support the plan.

Few of the challenges encountered, were the incomplete investigation of some cases and the refusal of cases to disclose their contacts information. This negatively contact tracing and fuelled community transmission. Additionally, the delay in the transfer of confirmed cases transfer to treatment facilities due to limited ambulance services and community resistance resulted in almost a quarter (25%) of confirmed cases recovering at home.

Unlike in urban areas where contact tracers were recruited from their communities to serve, the deployment of community health workers as contact tracers facilitated community entry, the identification of contacts, daily monitoring, and easy communication between contacts and their tracers.

Laboratory confirmation of suspected and probable cases during disease outbreak is crucial for evidence based and timely decision making. In Liberia's response, persistent delay in the release of lab results compelled contacts to overstay in quarantine beyond the prescribed 14-days, resulting in difficulties in quarantining contacts, especially among the poorer segments of the population who fetch for their basic livelihood daily.

Early training of lab personnel (Diagnostics Officers) and surveillance officers on specimen collection and management including the use of the existing specimen transport structure and platform (Riders for Health) for sample transport facilitated testing of samples. Liberia is testing all travelers (incoming and outgoing) and self-isolation of incoming travelers until their PCR test result is released.

The mental health and psychosocial pillar of the response was fundamental for the counseling and provision of psychosocial support cases and contacts in the treatment units (TUs) and precautionary observation centers (POCs). This pillar provided information to newly diagnosed cases in order to reduce their level of fear and anxiety while they were taken to either a treatment unit or precautionary observation center (POC). The team also reintegrated cases and high-risk contacts into their communities after being discharged to reduce stress and associated stigma from family and community members. The use of mental health clinicians, psychosocial and social workers was key to the success of this pillar.

In response to an initially high number of confirmed cases among health workers, county and health facility level infection prevention and control (IPC) focal persons were deployed with the responsibility to ensure proper triaging of patients at healthcare facilities. This decreased the risk of infection amongst service providers and clients. The establishment of a triage system in healthcare facilities helped to detect and isolate patients presenting with COVID-19 symptoms.

The use of the national EVD cemetery for burial of COVID-19 cases, coupled with the restructuring of the EVD burial team, lowered the risk and infection among members of the team and was proven to be cost effective and sustainable.

Persistent community refusal and denial of COVID-19 due to lack of public trust in the response and insufficient tracking and management of COVID-19 rumors accelerated misinformation and lack of public trust in the response. However,

the use of existing county and community structures to mobilize communities to adhere to health safety measures such as regular hand washing, wearing of nose masks and physical distancing were keys for the response.

Recommendations

The immediate actions formulated to improve the COVID-19 response include the following:

- Revise, consolidate and publish all relevant protocols and SOPs in the response and devise a clear strategy to resolve the payment issues of responders;
- Develop a De-escalation Plan with clear activities, budget, and timelines indicating the cutoff point for the response and threshold for activation;
- Continue the enhanced surveillance strategy (community voluntary samples collection) to increase voluntary testing and improve surveillance at POE especially at ground crossing points;
- Establish voluntary sample collection sites at major hospitals across Liberia;
- Improve the lab turn-around time for testing and results sharing and institute a well-structured data collection and management system at the lab and sample collection sites;
- Implement the revised Airport Protocol for Travelers;
- Maintain the operations and functionality of the national and county Emergency Operation Centers (EOCs) with all necessary equipment and supplies until the outbreak is contained;
- Procure psychotropic drugs for severe mental health cases and continue the roll out of the Mental Health and Psychosocial Support (MHPSS) trainings for counties where the training has not been conducted;
- Develop a comprehensive discharge plan for patients in POCs and treatment units in consultation with MPHSS and all relevant health workers and shared to facilitate proper and easy community reintegration;
- Integrate COVID-19 response activities into routine health services with a clear strategy to guarantee sustainability of response and reduce the high operational cost associated with the COVID-19 fight;
- Revise Risk Communication and Community Engagement (RCCE) strategy and plan to address emerging situations in the response;
- Develop a comprehensive COVID-19 preparedness plan for counties not currently in active outbreak response mode;
- Finalize and implement the COVID-19 transitional plan;
- Integrate COVID-19 related IPC measures in the continuum of essential health services; and
- Establish a health care worker (HCW) infection tracking system and reinforce compliance to COVID-19 IPC measures
- Establish lab sample tracking system to improve management of specimens and results turn-around time.

To ensure effective and robust response for future disease outbreak, the following interventions and actions have been recommended:

- Decentralize Lab capacity to improve testing and ensure timely release of results during future disease outbreaks;
- Rehabilitate the water, sanitation, and hygiene (WASH) infrastructure in public healthcare facilities to ensure adherence to IPC measures
- Support internet connectivity at all Public Health Emergency Operation Centers in the counties to enhance reporting and coordination;

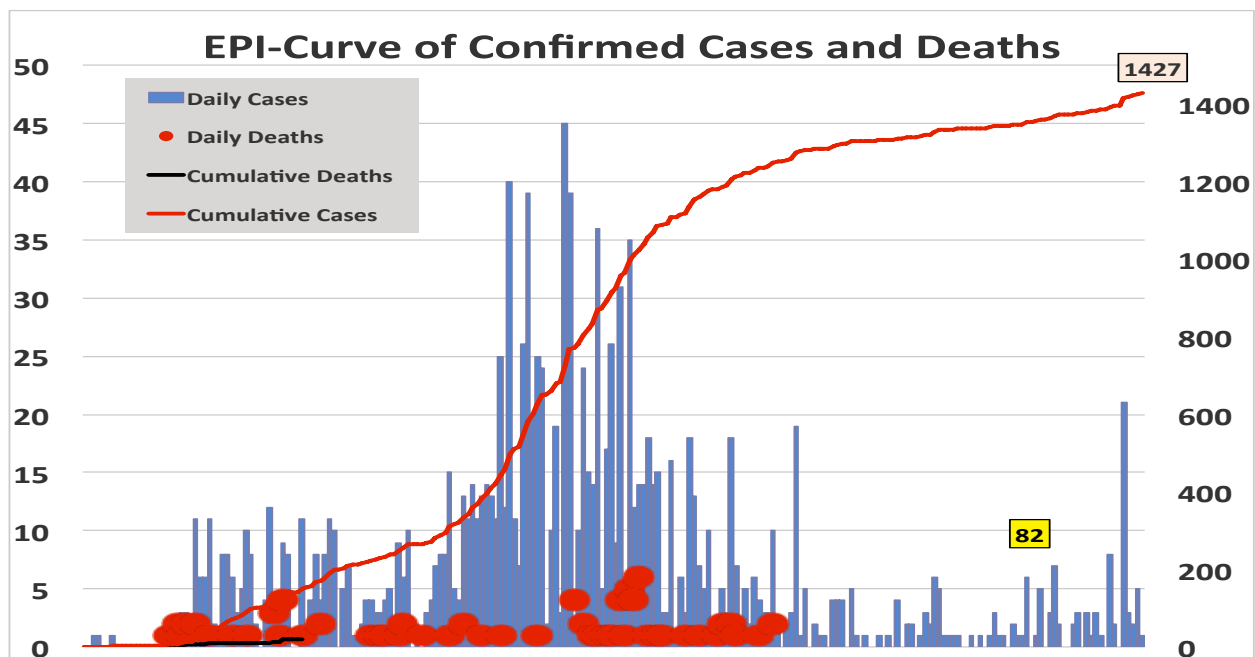
- Orientate CICS or County Health Teams (CHTs) on the concept of Operation in transitioning COVID-19 response into routine service and provide clear direction on activation;
- Ensure the availability of medical and non-medical supplies at county and health facility levels for routine health services and outbreak response
- Introduce home based care for mild and moderate COVID-19 cases
- Strengthen the capacity for RCCE in Liberia
- Integrate COVID-19 related measures in the continuum of essential health services
- Develop standard integrated referral pathways for service delivery and outbreak response
- Implement MHPSS interventions as embedded in the MPHSS SOP and Action Plan
- Conduct MPHSS orientation trainings for students, HCWs and community members for further awareness on MHPSS
- Establish Wellness Units and deploy psychosocial support (PSS) counselors in all county hospitals

Section 1: Introduction

1.1 Country's COVID-19 Situation Analysis

Coronavirus disease 2019 (COVID-19) is a potentially severe acute respiratory infection caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).¹ The virus was identified as the cause of an outbreak of pneumonia in Wuhan City, Hubei Province, China, in December 2019.² The clinical presentation is a respiratory infection with a symptom severity ranging from a mild common cold-like illness, to a severe viral pneumonia leading to acute respiratory distress syndrome that is potentially fatal.

On 16 March 2020, Liberia reported her first confirmed case of COVID-19. At the end of March 2020, Liberia had three confirmed cases, one in treatment facility, 434 contacts line listed and 70 samples tested. As of October 29, 2020, 1,427 confirmed cases have been recorded across Liberia including 82 deaths. All 15 counties recorded at least a case of COVID-19 with Montserrado being the epicenter. Important to note during the first 220-days of COVID-19 Response, 216 HCWs were confirmed, accounting for 16% of total confirmed cases in Liberia. The number of samples tested from March 15 – 29th October 2020 is over 30,000 with 1,427 cases translating to a positivity rate is less than 6%. The number of treatment facilities raised from a single unit in Montserrado County, the nation's capital to 21 across the country. Below is the EPI Curve depicting the COVID-19 situation in Liberia as of October 25, 2020.



Liberia is among 37 countries within the WHO African region that are battling sporadic cases of COVID-19 and also the second with the highest number of HCW infections on the continent.

¹ Coronaries Study Group of the International Committee on Taxonomy of Viruses. The species severe acute respiratory syndrome-related coronavirus: classifying 2019-nCoV and naming it SARSCoV-2. *Nat Microbiol.* 2020 Apr;5(4):536-44

² Ren LL, Wang YM, Wu ZQ, et al. Identification of a novel coronavirus causing severe pneumonia in human: a descriptive study. *Chin Med J (Engl).* 2020 Jan 30

1.2 Rationale of the Review

With over 200-days of an active COVID-19 response, the need to review the current strategy and adapt a cost-effective approach that will halt this pandemic was necessitated by the declining number of daily confirmed cases, impact of the pandemic on routine health services, demotivated workforce due to delayed payment of risk benefits for responders and dwindling donor support. The fight against COVID-19 is faced with mammoth challenges ranging from scarce resources to inadequate logistics and supplies to implement a current plan that will avert the spread of the virus. Currently, there are less than 50 high-risk contacts that are not in isolation, less than 11 confirmed cases in treatment facilities and 29 active cases that are asymptomatic. The population's denial of COVID-19's existence in Liberia and the non-compliance to public health measures remains the greatest impediments of the response. Therefore, this IAR provides relevant stakeholders the opportunity and platform to identify best practices, gaps, binding constraints and lessons learned over the past 6-months of Liberia's COVID-19 response. Additionally, it offers a forum to propose remedial actions that will improve and enhance the current response and any resurgence as well as integrating the response to provide routine health services.

1.3 Objectives of the Review

The overall objective of Liberia's IAR is to improve future disease its outbreak response based on documented lessons learned and evidences. The specific objectives are as follows:

- To share experiences and collectively analyze the current COVID-19 response by identifying challenges and best practices;
- To build consensus and compile lessons learned to improve the current response and sustain best practices that have demonstrated success;
- To document and apply lessons learned from the response efforts to date for health systems strengthening; and
- To validate and update Liberia's COVID-19 Strategic Preparedness and Response Plan and other strategic plans.

1.4 Review Process

The IAR was held at the national and county levels. Participants included UN agencies, the United States Centers for Disease Control and Prevention (US CDC), United States Agency for International Development (USAID), non-governmental organizations (NGOs), government agencies and ministries (e.g. Liberia Immigration Services, Ministry of Gender, Children and Social Protection, National Public Health Institute of Liberia, Ministry of Health), the private sector (e.g. health training institutions, etc.), civil society organizations (CSOs), among others. These stakeholders met for a day at the national level and for two days at the county level to discuss and analyze the current COVID-19 response. The participants documented best practices, identified gaps and challenges and proffered recommendations for improving the response and future disease outbreaks.

Section 2: Methodology

The IAR involved an interactive, structured methodology and generic materials developed by WHO. The IAR was not an evaluation of Liberia's COVID-19 response. However, it provided an opportunity for stakeholders to reflect on the work done and identify areas of improvement to further strengthen the response. The review meetings were virtual and face-to-face to ensure adherence to a physical-distancing protocol.

The review covered twelve (12) pillars of the Incident Management System (IMS). Participants were arranged into seven groups that met concomitantly to conduct the three sessions of the IAR as proposed by WHO (See agenda in annex A). The three sessions are indicated below:

Session 1: Objective observation;

Session 2: Analysis of gaps, best practices and contributing factors; and

Session 3: Identification of areas of improvement (recommendations)

Pillar leads with support from the IAR coordinator and WHO technical assistance facilitated the review at national and county levels. At the review meetings, a general presentation was made on the IAR standard approach and another on the COVID-19 situation in the country. The groups identified and developed activities to address challenges identified in the current COVID-19 response as well as activities to institutionalize best practices. They ensured that activities were harmonized, realistic and achievable.

2.1 National Level Review

The national level review was held on September 22, 2020 with the involvement of sixty (60) participants. The process was both virtual and physical with the majority of the participants attending in person. There were six groups consisting of 5- 10 persons per group with most of the pillar leads in attendance. However, the WASH and Port of Entry (POE) Pillars were not represented at the review meeting but conducted their review at a later date for inclusion into the IAR.

2.2 County Level Review

In order to conduct a comprehensive review of the COVID-19 response, all counties (15) organized a two-day review meeting with their partners and responders, particularly county pillar leads and stakeholders. This exercise provided an opportunity for counties to document their experiences, challenges and recommendations. The county level reviews were held from 16-24th September 2020. Each county selected dates that were convenient for them and was endorsed by the IAR lead facilitator.

Section 3: Findings

3.1 Governance, Leadership and Coordination

The COVID-19 response is governed by four separate and distinct response structures; the Special Presidential Advisory Committee (SPACO), the National Response Committee (NRC), the Incident Management System (IMS) and the counties Incident Command System (ICS). The IMS was activated on March 16, 2020 to manage the day-to-day affairs of the response. The Minister of Health chairs the IMS health pillars. These include: Case Management; Case Investigation; Contact Tracing; Epi-Surveillance; Mental Health and Psychosocial Support (MHPSS); Water, Sanitation and Hygiene (WASH); Dead Body Management; Port of Entry; Risk Communication; Community Engagement; Logistics; Laboratory; and Finance, with the mandate to:

- Develop the COVID-19 response strategies, protocols and plans;
- Mobilize resources for the response;
- Coordinate response efforts at all levels of the health system; National, County, district and community levels;
- Build the capacities of the surge team; and
- Ensure the eradication of COVID-19 in Liberia.

The President of the Republic of Liberia appointed a head of the NRC on 7th April 2020 and she is responsible for both the health and non-health response pillars. The non-health response team is comprised of Security, Agriculture, Youth, Women, Children and other vulnerable groups. The role of the NRC is to coordinate the national COVID-19 multi-sectorial plan in collaboration with the United Nations (UN), donors, Ministry of Health (MOH) and the National Public Health Institute of Liberia (NPHIL).

SPACO is the highest decision-making body of the response and is headed by the President of Liberia. This committee brings together all cabinet ministers and senior members of the Government, Donors, and UN agencies.

Governance, Leadership and Coordination	
Observations	
Best practices	<ul style="list-style-type: none"> • The timely activation of the national IMS and the County Incident Command System (ICS) developed during Liberia’s 2014-2016 EVD outbreak enhanced the management of the COVID-19 response. • The development and implementation of the COVID-19 preparedness plan that led to the identification and training of surge team facilitated a robust response at all levels. • Development of COVID-19 Incident Action Plan which provided guidance on the activities implemented at all levels • Coordination of partners’ activities including resource mapping which provides understanding of sources partners contributed over the period of the response • The existence of various health sector coordination platforms (Health Coordination Committee, Health Sector Coordination Committee and the One-Health Platform) that meets quarterly and brings together donors, UN agencies, NGOs and civil society organizations. • Orientation of pillar leads, deputies, and stakeholders at both National and County levels on the concept of COVID-19 response which provided understanding on the IMS Concept of Operations.

	<ul style="list-style-type: none"> • The establishment of a special presidential advisory committee with previous experience in eradicating EVD in Liberia with the mandate to mobilize resources and make high level decisions. • The multi-sectorial approach to the response of COVID-19 strengthened resource mobilization and holistic decision-making process. • The activation and maintenance of national and county levels Emergency Operation Centers (EOCs) which consist of call centers from EVD enhanced coordination, communication and information sharing from and to the public • The regular holding of daily incident management system meeting at the national and county levels to improve coordination among stakeholders and strengthen information sharing • Developed one UN Response Plan aligned to the national COVID-19 preparedness and response plan and re-purposing of UN resources to support the response. • The daily tracking and review of action points from the IMS meeting enforces implementation and kept personnel on the alert
<p>Challenges</p>	<ul style="list-style-type: none"> • The appointment of senior government officials (Ministers) as pillar leads impacted the organization of regular pillar meetings and did not add value to the response. • Irregular pillars meeting impeded timely decision-making and delayed the pillar response for effective implementation of activities and actions. • The scarcity of financial resources to effectively manage the response operations such as the regular supply of fuel, calling cards, vehicle repairs, payment of staff among others directly affected the response. • At the early stage of the response, all resources were mobilized and directed by the national level with limited involvement of the counties. This delayed response activity at the county level.
<p>Recommendations</p>	
<p>Immediate Actions</p> <ul style="list-style-type: none"> • Review the IMS structures at national and county levels to accommodate current realities and the integration of COVID-19 response into routine health services • Strengthen inter-sectorial coordination and information-sharing to disrupt transmission and end COVID-19 in Liberia • Finalize and disseminate the National Transitional/integrated Plan • Conduct a rapid assessment of the health sector to establish synergy between Universal Health Coverage (UHC) and health security <p>Medium and Long-Term Actions</p> <ul style="list-style-type: none"> • Improve cross-borders coordination to reduce importation of cases • Use the One Health Platform to continue the multi-sectorial coordination and information sharing to improve human and animal disease surveillance • Develop a national emergency preparedness plan which encompasses all forms of health emergencies • Update the National Action Plan for health security as well as the national health sector resilient plan post COVID-19. 	

3.2 Financing the COVID-19 Response

Financing health emergency is a critical component of the entire response. The Government of Liberia with support from donors, mobilized US\$ 17.07 million United States out of \$48.6 million projected for the implementation of the COVID -19 Response Plan. Funds mobilized were inadequate to finance the operations of the response but it was managed efficiently with impressive results. It is evident that resources are scarce due to the global pandemic, therefore, cost-effective strategies needed to be adapted to disrupt transmission and end COVID-19.

Finance	
Observations	
Best practices	<ul style="list-style-type: none"> • The use of the Public Finance Management (PFM) law to manage and disburse COVID-19 funds imbue trust and confidence in the IMS financial management system. • The use of the MOH and the NPHIL financial management system, structure and personnel added efficiency and integrity to the response. • Resources from partners filled the critical gaps and complemented efforts of government.
Challenges	<ul style="list-style-type: none"> • Insufficient financial resources have negatively impacted the operations of the response and demotivated responders. • Difficulties in cashing checks and getting cash from commercial banks impeded effective operations of the response. • The Government's prolonged procurement processes created delays in the response • Lack of a Trust Fund or Pool Fund to fight COVID-19 in the wake of dwindling donors and partners funds rendered the response vulnerable to external shocks and unpredictable financial resources.
Recommendations	
<p>Immediate Actions</p> <ul style="list-style-type: none"> • Create a Trust Fund for the fight against COVID -19 • Engage the Ministry of Finance and banking institutions to alleviate the plight associated with accessing cash from commercial banks. • Organize a follow-up donor conference to mobilize additional resources to fight COVID-19 • Develop and disseminate clear SOPs for financial request and liquidation • Reduce procurement bottlenecks <p>Medium and Long Term-Actions</p> <ul style="list-style-type: none"> • Establish a budget line in the National Budget for health emergencies • Develop a national financial regulation for health emergency procurement and expenditure 	

3.3 Human Resources for Health (HRH)

The finance and Human Resources for Health (HRH) pillar plays a key role in the response. Without proper management of resources and surge team, the response will be impacted greatly. The major drawbacks of this pillar are the persistent complains of delayed disbursement of responders' risk benefit, insufficient resources to fund the response operations of the response and the huge number of surge team. The IMS made a decision to integrate the

response into routine health services which means, the use of employees of the MOH and NPHIL to take on the response which has reduced the COVID-19 wage bill significantly.

Human Resources for Health (HRH)	
Observations	
Best practices	<ul style="list-style-type: none"> • The use of civil servants within the health sector to fight COVID-19 helped to build their capacities and ensure sustainability • The deployment of personnel with EVD experience enhanced the capacity of the workforce
Challenges	<ul style="list-style-type: none"> • Lack of recruitment procedures huge monthly wage bill and increased the response budget • Lack of standardized procedures for incentive and deployment of responders at the initial stage of the outbreak; • Inadequate financial resources to compensate responders has negatively affected the efficiency and effectiveness of the response • Insufficient training of surge personnel due to scarce resources to carry out comprehensive training • Persistent delay in the disbursement of risk benefit to responders has demotivated the surge teams thereby negatively impacting the response • Poor coordination and communication between the HRH team and the other pillars contributed to late submission of payment requirements (e.g.: payroll, attendance rosters, contracts, etc.) which consequently delayed responders' monthly compensation
Recommendations	
<p>Immediate Actions</p> <ul style="list-style-type: none"> • Develop SOPs for recruitment and termination of contractors services • Develop criteria for COVID-19 workforce hiring based on different scenarios and stages of the response • Establish requirements for regular risk benefits for COVID-19 responders. <p>Medium and Long Term-Actions</p> <ul style="list-style-type: none"> • Develop a data base for surge personnel to ease recruitment during a resurgence • Develop a comprehensive training module that covers all surge teams • Consolidate all protocols into a single national response protocol 	

3.3 Disease Surveillance

The COVID-19 pandemic was first diagnosed on March 16, 2020 in Liberia. The country developed its preparedness plan and established structures to manage the outbreak based on previous EVD experiences. A surge team was organized and trained on case detection, isolation, testing and monitoring of contacts in anticipation of an outbreak. IPC materials were prepositioned and treatment facilities were identified at the national and county levels.

3.3.1 Case Investigation

Early detection and isolation of suspected and confirmed cases are vital to interrupting the transmission of COVID-19 in both healthcare facilities and communities. The case investigation teams at all levels of the response comprised of surveillance officers that are graduates of the field epidemiology training program (FETP), public health experts and epidemiologists from WHO, US CDC, USAID and partners. These teams were able to investigate majority of the cases particularly outside of Montserrado which facilitated the isolation of cases and the follow-up of contacts. These interventions resulted into disruption of community transmission.

Case Investigation	
Observations	
Best practices	<ul style="list-style-type: none"> • The use of Field Epidemiology Training Program (FETP) graduates to lead case investigation improved early detection, listing of contacts, and isolation of contacts • The availability and use of Integrated Disease Surveillance and Response (IDSR) structures and personnel (surveillance officers) for case investigation facilitated early cases detection and testing • Enhanced coordination between active case finders and case investigation helped to identify cases and contacts • Use of surge team that had experienced with investigating EVD cases reduced risk of infection and improved case investigation • The existence of standard protocol for case investigation • The introduction and implementation of enhanced surveillance strategy increase community testing
Challenges	<ul style="list-style-type: none"> • Incomplete investigation of some cases impacted contact tracing and fuelled community transmission • Proliferation of technology for case investigation (case-base form) lead to inconsistent data • Cases refusal to disclose their contacts information and to be managed in treatment unit • Delay in the movement of confirmed cases to treatment facilities due to limited ambulance services and community resistance • Inconsistency of case investigation procedures and protocol impacted the management of cases and contacts • Incomplete identifier of cases and contacts led to cases and contacts not being found • The case investigation SOP was never finalized
Recommendations	

Immediate Actions

- Improve and complete identifiers of those who seek voluntary testing
- Ensure case based forms are completed before sample collection begins
- Ensure all cases are investigated and contacts line listed for follow-up
- Compile a complete line list of all cases and contacts
- Continue with enhanced surveillance in affected counties and hotspots
- Conduct mortality survey to establish the burden of COVID-19 related deaths
- Continue active case finding, case investigation and contact tracing for sporadic cases through the network of CHAs and passively through health facilities
- Strengthen cross border activities using IDRS platform
- Enhance border communities' surveillance
- Finalize and update the Case Investigation SOP and make it available to case investigation teams

Medium and Long Term Actions

- Continue capacity building for surveillance officers to improve case investigation
- Establish sentinel surveillance in selected health facilities

3.3.2 Contact Tracing

Contact tracing is a fundamental and integral element of infectious disease response strategy. The primary goal of contact tracing and monitoring is to isolate early and reduce the rate of exposure within the population. Contact tracing can only be useful with effective and efficient case investigation, comprehensive listing of contacts and willingness of contacts to be monitored daily.

Contact Tracing	
Observations	
Best practices	<ul style="list-style-type: none">• The deployment of community health workers as contact tracers improved community entry, contacts identification and daily monitoring especially in rural communities• Recruitment of contact tracers from communities where cases and contacts live facilitated easy communication between contacts and their tracers• Developed and use of standard protocol for contacts monitoring reduced the risk of infection amongst tracers and improve the quality of contacts follow-up• The introduction of precautionary observation centers (POCs) for managing high-risk contacts improved contacts monitoring and reduce community exposure and infection• The provision of basic needs (e.g. food, water, etc.) for vulnerable families during quarantine made it possible for contacts to adhere to isolation protocol
Challenges	<ul style="list-style-type: none">• The complete listing and classification of contacts by case investigation was difficult due to the refusal of cases to provide the right information on their contacts and poor investigation by investigation teams.• Persistent delay in the release of lab results compelled contacts to overstay in quarantine beyond the prescribed number of days (14-days)• Difficulties in quarantining contacts (poor families) who fetch for their basic livelihood daily

	<ul style="list-style-type: none"> • Lack of POCs in few counties made isolation of high-risk contacts impossible and exposed family and community members • Denial of COVID-19 existence in Liberia affected contact tracing and daily monitoring • Refusal of most low risk contacts to be tested for COVID -19 affected the testing rate • The contact tracing SOP was never finalized
Recommendations	
Immediate Actions	
<ul style="list-style-type: none"> • Identify public facilities to be used for POCs for isolating high-risk contacts • Encourage all contacts to be tested for COVID-19 • Improve the turn around time for the release of lab results to reduce undesired overstay of cases and their contacts • Reduce the rate of contacts lost to follow-up and refusal through community awareness and tailored messages • Finalize and update the Contact Tracing SOP and make it available to contact tracing teams 	
Medium and Long Term Actions	
<ul style="list-style-type: none"> • Integrate contact tracing into the community health program training module • Establish POC in each county to manage high-risk contacts • Develop a standard training module for contact tracing 	

3.3.3 Port of Entry

The importance of surveillance at the point of entry is to reduce importation of cases. Multi sectorial collaboration and coordination have been instrumental in cases detection and isolation of travelers and accomplishing the overall objectives of the pillar.

Port of Entry (POE)	
Observations	
Best practices	<ul style="list-style-type: none"> • Elaborated and disseminated POEs management guidelines with clear knowledge of roles of pillar members • The introduction of electronic data collection and reporting at POEs • Comprehensive capacity-building of POE actors to heighten surveillance at POE reduced cases importation into the country • Heightened surveillance at POEs ensured early detection and isolation of cases • Testing of all travelers (incoming and outgoing) and self isolation of incoming travelers until their PCR test results are released
Challenges	<ul style="list-style-type: none"> • Insufficient coordination of actors supporting POEs negatively affected the comprehensive management and information sharing within the pillar • Pillar meetings not being used for technical discussion platform contributed to duplication of interventions • Lack of POCs or isolation facilities at port of entry • Lack of effective surveillance system (e.g. lack of testing and tracking of travelers) at ground-crossing points
Recommendations	

Immediate Actions

- Institute random testing of travelers at ground crossing points
- Introduce and implement the revised Airport Travelers Protocol to further enhance surveillance
- Reorganize pillar leadership and meetings for an improved coordination of pillar activities

Medium and Long-Term Actions

- Develop and implement a database for tracking ground crossing travelers
- Harmonize standard operation procedures among the counties in the region with the contribution of regional institutions (MRU, ECOWAS, etc.)
- Organize simulation exercises at ground crossings
- Intensify cross-border collaboration for better coordination, data sharing and improved COVID-19 surveillance across borders of the countries in the region

3.3.4 Epi Data

In any disease outbreak, information is key for evidence based decision making and early interventions. The significance of this pillar is to gather, collate, analyze and disseminate data on the pandemic in a holistic and integrated manner. The main focus of this pillar is to disseminate a daily situational report (sitrep) and set standards for data collection, management, analysis and reporting.

Epi Data	
Observations	
Best practices	<ul style="list-style-type: none"> • Developed and implemented Epi data SOP to harmonize daily reporting and improve data quality • Deployed an end-to end technological solution for data management and reporting to facilitate real time information dissemination for decision-making and create a central repository of the response data • Use of FETP-trained data managers at the national and county levels • Hired Liberian-owned company to develop technological data collection and management solution. • Engagement of MOH County-level monitoring and evaluation (M&E) officers to manage COVID-19 data and information system
Challenges	<ul style="list-style-type: none"> • Persistent delay in the submission of daily report by counties to the national Epi team to generate the daily COVID-19 sitrep. • Limited coordination between response pillars and epi data team negatively impacted the quality of COVID -19 data • Insufficient computers and internet services to report daily
Recommendations	
<h3>Immediate Actions</h3> <ul style="list-style-type: none"> • Ensure response data are properly managed and secured on a server or in the cloud • Develop a cut off point for the submission of the daily COVID-19 sitrep • Provide operational support to epi data team (e.g. calling cards, computers, etc.) • Reinforce data collection at ports of entry from incoming migrants 	

- Develop and implement data base for tracking ground crossing travelers
- Develop and implement data sharing systems with neighboring countries

Medium and Long-Term Actions

- Build response data collection and management on existing DHIS 2 platform
- Develop and implement the electronic IDSR infrastructure and system to manage future disease outbreak

3.4 Laboratory System

Liberia has a single National Reference Lab (NRL) that performs Real Time-Polymerase Chain Reactions (RT-PCR) module test. The NRL has the capacity to test over 300 samples within twenty-four (24) hours and has tested 28,017 samples over the past 6-months since the confirmation of the first case on March 16, 2020. There is no private lab with the capacity to test COVID-19 using PCR, however, there are Genexpert machinery available in country with limited cartridges to test for COVID-19. The overall positivity rate from samples tested is 5.4% but the rate has declined to 1.7% in recent weeks.

Laboratory System	
Observations	
Best practices	<ul style="list-style-type: none"> • Early training of lab personnel (diagnostics officers) and surveillance officers on specimen collection and management facilitated speedy sample collection • Regular risk assessment of national and regional laboratories • Use of existing specimen transport structure and platform (operated by Riders for Health) for sample transport • Effective partners' coordination through virtual daily meetings • Availability of molecular testing capacity from EVD experience • Developed Lab Guidelines and Protocols for sample collection, management, transport, testing and release of results
Challenges	<ul style="list-style-type: none"> • Poor waste management system due to lack of waste transport system and malfunctioning incinerator at the National Reference Lab (NRL) • Delay in the supply of fuel and stationeries due to prolonged procurement processes • Delay in testing and release of lab results due to operational and technical issues • Erratic maintenance of lab equipment due to lack of maintenance contract
Recommendations	
<h4>Immediate Actions</h4> <ul style="list-style-type: none"> • Repair and install incinerator at the NRL • Establish lab equipment maintenance agreement with service provider • Project and procure lab reagents and consumables • Institute measure for the timely disbursement of monthly risk benefit to lab personnel • Establish a robust system for tracking and monitoring lab reagents and consumables • Set-up an effective sample reception and monitoring system 	
<h4>Medium and Long Term Actions</h4>	

- Expand and decentralize RT-PCR testing platform for COVID -19 to increase testing capacity and reduce the turn around time for the release of results
- Increase the number of qualified lab experts in Liberia through capacity-building initiatives

3.5 Case Management

Early detection and isolation of suspected and confirmed cases is vital to disrupting the spread of the virus within the population. The establishment of precautionary observation centers and treatment units across the country was crucial in interrupting community transmission and effective in case and contact management.

Case Management	
Observations	
Best Practices	<ul style="list-style-type: none"> • Developed clinical guidelines and SOPs for case management, psychosocial and mental health in line with evidence-based practices to improve patients’ outcomes and reduce health workers risk of infection • Established precautionary observation centers (POCs) to support the containment of community spread and relieve pressure on treatment facilities • The use of virtual platforms to build capacity facilitated knowledge sharing, capacity development and improve patients’ outcomes • Building on lessons learned from previous EVD response (coordination, structures, personnel, expertise, etc) enhanced the efficiency and effectiveness of case management • Use of county hospitals for managing cases reduce operational cost
Challenges	<ul style="list-style-type: none"> • Delay in setting up key infrastructure (e.g.; isolation units, treatment facilities, etc) to manage cases and high-risk contacts • Insufficient number of testing centers to confirm results for clinical decision-making delayed the discharge of patients • Delay from ambulance pick-up cases and high-risk contacts increased the risk of exposure for family and community members fuelled resistance from cases and contacts • Delayed in sample collection and provision of results from the laboratory brought about lack of confidence and resentment among contacts and cases and led to prolonged stay of cases and contacts in isolation
Recommendations	
<p>Immediate Actions</p> <ul style="list-style-type: none"> • Finalize the case management guidelines and SOPs including home-based care • Repair and maintain ambulances for both routine health services and the COVID-19 response • Procure essential drugs and medical supplies for treatment and isolation units <p>Medium and Long-Term Actions</p> <ul style="list-style-type: none"> • Procure ambulances to improve cases and high-risk contacts transfer to isolation facilities • Equip public hospitals to manage infectious diseases (e.g.; COVID, EVD, Lassa fever, yellow fever, etc.) • Establish and equip a national and three regional infectious disease management centers 	

3.6 Mental Health and Psychosocial Support (MHPSS)

The establishment of MHPSS team during the 2014 Ebola outbreak proved very useful in providing counseling and psychosocial support services to those that contracted the virus. The role of MHPSS is crucial in the COVID-19 response for cases and contacts experiencing stigma, fear, stress and mental conditions. The pillar assisted immensely with community resistance, release of lab negative results and counseling of those in treatment facilities and POCs with positive lab results. The intervention of experienced MPHSS personnel to encourage cases to be managed in treatment facilities and reintegrate them back into their communities after treatment was important.

Mental Health and Psychosocial Support (MHPSS)	
Observations	
Best practices	<ul style="list-style-type: none"> • Developed Mental Health and Psychosocial Support (MHPSS) guidance document based on the WHO Global Reference Guide: SOP and Action Plan • Developed referral pathways for both mental health and psychosocial issues between MPHSS staff at the POCs, treatment unit and community • Established Interim Care Center for children who were either confirmed or whose parent(s) were in the treatment unit with no one to care for the child. • Integrated MHPSS services into case management • Recognition of MHPSS as a key component of the COVID-19 response as was the case with EVD • Trained MPHSS workers in Case Management, IPC, and provided refresher on MHPSS services to enable them prepare and adequately respond to the COVID-19 pandemic. • Use of mental health clinicians, psychosocial support (PSS) counselors and social workers in the counties to counsel cases and their contacts, deal with resistance from individuals and communities and provide mental health services • Provided psychosocial support to cases and contacts and facilitated the reintegration of cases and high-risk contacts into their communities after discharge to help reduce their stress level and stigma. • Supported and coordinated community engagements in the fifteen counties as well as Community Healing Dialogues;
Challenges	<ul style="list-style-type: none"> • Weak coordination between MHPSS and case management pillars • Lack of psychotropic medications to treat or manage cases with severe mental health condition • Fear of confirmed cases to present to a COVID-19 treatment unit for care • Inadequate support to the pillar • Action plan and timing not respected • No clear Mental Health message shared with partners for diffusion
Recommendations	
Immediate Actions	<ul style="list-style-type: none"> • Continue the roll out of MHPSS trainings for counties where the training has not been conducted • Procure psychotropic medication for cases with severe mental health condition • Continue community healing dialogues to address communities and families' resistance • Support the pillar to implement its Action Plan

- Improve coordination and collaboration between the Case Management and MHPSS pillars
- Use radio messages to ensure awareness and education on mental health and stigmatization

Medium and Long-Term Actions

- Implement MHPSS interventions that are contained in the SOP and Action Plan
- Conduct MHPSS orientation trainings for students, HCW, and community members for further sensitization on MHPSS
- Establish Wellness Units and deploy MHPSS in all county hospitals

3.7 Infection Prevention and Control (IPC)

Infection prevention and control cut across all response pillars and is cardinal to reducing the risk of infection of service providers and cases. Monitoring the correct and or appropriate use of personal protection equipment (PPEs) at different levels of the response is useful for both rational use of PPEs and the prevention of HCWs' infection.

Infection Prevention and Control	
Observations	
Best practices	<ul style="list-style-type: none"> • The use of county and health facility levels IPC focal persons deployed after EVD outbreak with the responsibility to ensure proper triaging of patients at healthcare facilities reduce the risk of infection amongst service providers and clients • The establishment of a triage system in healthcare facilities helped to detect and isolate patients presenting COVID-19 symptoms • Timely adaptation and implementation of COVID-19 IPC guidelines and protocol • Early recruitment, training and deployment of IPC surge capacity at selected health facilities • Use of county level IPC structures and supplies for the response • Harmonized and roll out of IPC training modules to all counties • Timely risk assessment of all HCWs who came in contact with confirmed COVID-19 case led to early detection and tracing of cases among HCWs • Fumigated facilities or institution buildings where confirmed cases were found reduced the spread of infection at the work place • Distributed IPC supplies for COVID-19 response to all 15-counties
Challenges	<ul style="list-style-type: none"> • Limited isolation facilities in country • Insufficient information on IPC supplies and trainings before the COVID-19 response • Poor coordination between IPC pillar and Supply Chain Management Unit impeded the tracking of IPC stock balances and projection of the country's needs • Poor adherence to IPC practice by the general public and service providers • Most health facilities lack isolation unit
Recommendations	
Immediate Actions <ul style="list-style-type: none"> • Review and revise the National IPC Policy • Investigate and document HCWs' infection to mitigate reoccurrence • Improve coordination between IPC pillar and supply chain management unit • Develop a robust IPC supplies tracking system and database 	

- Integrate IPC assessment into the Joint Integrated supportive supervision (JISS)
- Conduct a nationwide IPC inventory to determine stock status at all levels of the health care delivery system
- Ensure the availability of IPC supplies at service delivery points

Medium and Long-Term Actions

- Establish isolation unit in secondary healthcare facilities
- Enforce IPC measures at healthcare facilities

3.8 Water, Sanitation and Hygiene (WASH)

The objective of this pillar (WASH), is to ensure the availability of water, good sanitation and hygiene practices are available in healthcare facilities and at treatment units to reduce the risk of infection. Waste management at treatment units, labs, sample collection centers and healthcare facilities is vital due to the volume of infectious wastes that is produced daily and require special management (incineration).

Water, Sanitation and Hygiene (WASH)	
Observations	
Best practices	<ul style="list-style-type: none"> • The use of Environmental Health Technicians (EHT) at the county level to perform WASH services during the response • The existence and designation of the WASH Commission to lead the pillar • Developed a six-month response plan in the early stages of the pandemic • Coordination and consultations with most WASH actors minimized duplication of interventions • Early awareness creation and push for hand washing even before any COVID-19 case was reported • Distributed and pre-positioned WASH materials for COVID-19 response to all County Health Teams
Challenges	<ul style="list-style-type: none"> • Dilapidated WASH facilities (non-functional hand pumps, latrines and mal functional incinerators, etc.) in some public healthcare facilities contributed to poor WASH practices and non-adherence to safety protocols • Lack of capacity building during the response for WASH pillar responders affected the effectiveness and efficiency of their services • Non-compliance of most healthcare facilities to WASH standards • Limited waste management equipment and facilities • Attempted efforts to separate sanitation from WASH and waste management pillars • Concentrated WASH interventions in Monrovia at the detriment of other parts of the country • WASH response plan did not include schools thereby creating impediments for majority of the schools to meet the IPC requirements for re-opening
Recommendations	
Immediate Actions	
<ul style="list-style-type: none"> • Procure and distribute hand washing materials and equipment to healthcare facilities and other public places 	

- Improve waste management at treatment facilities and health centers
- Conduct assessments of WASH facilities and maintain up to date data on functionality and accessibility
- Provide WASH/IPC supplies to aid safe schools re-opening
- Follow up on systems and mechanisms for sustaining the practice of hand washing with soap

Medium and Long-Term Actions

- Improve waste management at treatment facilities and health centers
- Rehabilitate WASH infrastructure at public healthcare facilities
- Develop clear strategies and action plans for structural WASH needs among communities, healthcare facilities and schools
- Establish a robust, durable and sustainable WASH facilities such as group hand washing facilities at schools
- Ensure functional water point in communities, healthcare facilities and schools and put in place operation and maintenance mechanisms to promote sustainability
- Train facility level staff in WASH infrastructure maintenance and repair

3.9 Safe and Dignified Burial

One uncommon strategy adapted by the response, is the testing of suspected COVID-19 dead bodies. This prevented the spread of COVID-19 in communities and enhanced the surveillance system in Liberia. Besides, testing and disposal of deserted dead bodies is the key function of the safe and dignified burial pillar. This strategy was adapted from the EVD response that proved very successful in halting community transmission. In the COVID-19 response, testing of dead bodies has proven to be useful in detecting cases that could have escalated without identifying the source of infection. Over 100 dead bodies were tested with over 50 confirmed cases generated from the testing of dead bodies.

Safe and Dignified Burial	
Observations	
Best practices	<ul style="list-style-type: none"> • The use of EVD national EVD cemetery for burial of COVID-19 cases • The restructuring of EVD burial team to manage COVID-19 burials reduce the risk and infection among members of the team • Provided body bags for safe dead body management
Challenges	<ul style="list-style-type: none"> • The appointment of the Minister of Internal Affairs to head the Dead Body Management (DBM) Pillar negatively affected the coordination and decentralization of the pillar • Lack of a DBM database • Insufficient vehicles for DBM team especially at the county level
Recommendations	
<h4>Immediate Actions</h4> <ul style="list-style-type: none"> • Develop Safe and Dignified Burial Protocol and training module • Ensure all counties have adequate body bags with the right sizes to facilitate safe and dignified burial <h4>Medium and Long-Term Actions</h4> <ul style="list-style-type: none"> • Identify public burial sites in all counties to conduct safe and dignified burials • Procure at least two vehicles for each county burial team as part of the preparedness plan 	

3.10 Risk Communication

Risk Communication (RC) team has an important role and responsibility in any disease outbreak to educate the public of the situation and how to prevent themselves, their community and family members from infection. The team is under obligation to disseminate accurate and timely information to the population to dispel rumors and facilitate behavior change.

Risk Communication	
Observations	
Best practices	<ul style="list-style-type: none"> • Developed and disseminated RCCE Strategic Plan during COVID-19 preparedness stage based on EVD experiences • Aligned RC activities with partners to avoid fragmentation and duplication • Engaged the entire media landscape to minimize inconsistent messages and to promote national unity in the fight against COVID-19 • Use of central and county levels health promotion staff to carry out RCCE • Use of well knowledgeable and experienced personnel from EVD outbreak as surge team members
Challenges	<ul style="list-style-type: none"> • Persistent community refusal and denial of COVID-19 due to lack of public trust in the response • Appointment of senior level minister to head the pillar who has competing priorities negatively affected the pillar coordination and performance • Ad hoc implementation of the RC Plan by partners did not yield the intended results • Parallel coordination structures of the pillar led to duplication of interventions • Inclusion of RCCE into several pillars with weak coordination led to over stretching of limited resources • Introduction of control measures during lock down before engaging the public to discuss the change affected the lock down restrictions • Delay in making available new messages and materials to address emerging behavioral concerns as the epidemic situation change from community transmission to sporadic cases is impacting the response • Insufficient tracking and management of COVID-19 rumors accelerated misinformation and lack of public trust in the response
Recommendations	
<p style="background-color: #e6f2ff; margin: 0; padding: 2px;">Immediate Actions</p> <ul style="list-style-type: none"> • Revise RC strategy and plan to address emerging situation in the response • Continue to engage the media to create awareness on COVID-19 safety measures • Develop messages to address stigma and provide hope for cases and contacts • Use non-governmental organization (NGOs) and civil society organizations to engage the public and communities on COVID-19 preventions <p style="background-color: #e6f2ff; margin: 0; padding: 2px;">Medium and Long-Term Actions</p> <ul style="list-style-type: none"> • Build the capacity of RC in Liberia for future resurgence • Integrate RC with the MOH health promotion unit for sustainability 	

3.11 Community Engagement

Community voluntary testing is one of the active case search strategies adopted to enhance the surveillance system, improve early detection of suspected COVID-19 cases and increasing testing. The strategy involved the engagement of local authorities through an organized multi sectorial team involving UN agencies, civil society organization, health NGOs and the MOH in COVID-19 hot spots for testing. The enhanced community surveillance contributed to approximately one-third (33%) of total COVID-19 test conducted in Liberia.

Community Engagement	
Observations	
Best practices	<ul style="list-style-type: none"> • Involvement of community-based organizations and local authorities facilitated community voluntary testing through the enhanced surveillance strategy • Use of existing county and community structures to mobilize communities to adhere to health safety measures such as regular hand washing, wearing of nose mask and physical distancing • The deployment of community health workers to create COVID-19 awareness, isolate and monitor low risk contacts helped to minimize resistance
Challenges	<ul style="list-style-type: none"> • Minimum adherence to COVID-19 safety measures such as wearing of mask in the public and physical distancing • Insufficient tracking and management of COVID-19 rumors accelerated misinformation on COVID-19 and lack of public trust in the response • Inadequate community engagement interventions such as focus group discussions (FGDs) to improve community perceptions of COVID-19 and related interventions • Unsatisfactory integration of community perception in the design of the response • Limited use of the multi-sectorial community platforms to engage communities
Recommendations	
<p>Immediate Actions</p> <ul style="list-style-type: none"> • Revise community engagement strategy and plan to address emerging situations in the response • Engage local authorities and political leaders to reduce community resistance and compliance to health safety measures <p>Medium and Long-Term Actions</p> <ul style="list-style-type: none"> • Conduct community perception surveys and Focused Group Discussions(FGDs) to continuously engage communities • Use of existing multi-sectorial community structures and intervention to engage communities 	

3.12 Drugs, Medical Supplies and Logistics

The availability of drugs, medical supplies and logistics are critical for case management and responders. Without IPC supplies and personal protective equipment (PPEs) the response cannot be effective and management of cases will be compromised. At the onset of the pandemic, a logistics pillar was formed to handle procurement of supplies, vehicles assignment and the entire supply chain system.

Drugs, Medical Supplies and Logistics	
Observations	
Best practices	<ul style="list-style-type: none"> The use of the health sector (Central Medical Store & NPHIL) supply chain system and county level logistics team (County Pharmacists and Logisticians) ensured accountability and management of drugs, medical supplies and logistics of the response The temporary use of government ministries and agencies vehicles to respond saved the government millions of united states dollars in vehicle rental The establishment of regional hub for logistics management and distribution as was done during the EVD outbreak improved the availability of supplies at treatment centers Procured equipment for COVID-19 response (e.g. Ventilators, Oxygen concentrators, beds, etc.) that will be used also in routine health services
Challenges	<ul style="list-style-type: none"> Insufficient resources to procure and distribute essential medicines, drugs and supplies Limited warehouses in counties to manage essential medicines at the right temperature Inadequate operational vehicles in counties to respond timely and effectively Lack of mental health drugs to manage cases, contacts and patients with mental health condition Delay in requisition of drugs and medical supplies Suppliers unable to meet the demand of the response supplies due to prolonged flights restriction and lockdown
Recommendations	
<p>Immediate Actions</p> <ul style="list-style-type: none"> Allocate national resources for the procurement of essential medicines and IPC supplies <p>Medium and Long Term Actions</p> <ul style="list-style-type: none"> Rehabilitate regional hub for the management of supplies Make functional Electronic Logistic Management Information System (eLMIS) to track and manage surge medical supplies and logistics 	

3.13 Essential Health Services

Access to essential health services during health emergency is critical to reducing mortality and ensuring the well being of the population and people needing critical health care. The essential health pillar ensured uninterrupted maternal and child health services, access to critical health services during the COVID-19 lockdown and state of emergency.

Essential Health Services	
Observations	
Best practices	<ul style="list-style-type: none"> All public and selected private health facilities remained opened and functional during the COVID-19 outbreak Continuation of routine IDSR at all levels of the health system ensures early detection and reporting of priority diseases and public health events

	<ul style="list-style-type: none"> • Routine supervision continued at health facilities during the response which increased staff motivation and the quality of services
Challenges	<ul style="list-style-type: none"> • Decrease in the work hours at many health facilities due to the lock down and state of emergency negatively impacted health indicators and access to critical health services • Disruption in immunization services due to the myth of the COVID-19 vaccine introduction • Inadequate time for coaching and supervision reduced the quality of health services • Delay in HCWs trainings due to priority on COVID-19 interventions • Slow integration of COVID-19 response into routine health services
Recommendations	
<p>Immediate Actions</p> <ul style="list-style-type: none"> • Integrate COVID-19 detection into IDRS and community event base reporting structure and system • Improve the distribution of drugs and medical supplies to increase access to healthcare services • Strengthen triage at primary and secondary health facilities • Enhanced case detection at health facilities <p>Medium and Long-Term Actions</p> <ul style="list-style-type: none"> • Improve diagnostics services in routine health services • Improve referral pathways to reduce the rejection of patients • Integrate COVID-19 related IPC measures in the continuum of essential health services • Establish a HCWs infection tracking system • Reinforce HCW awareness and compliance to COVID-19 IPC measures 	

Section 4: Recommendations

4.1 Short-Term Actions

- Procure psychotropic drugs for severe mental health cases
- Continue the roll out MHPSS trainings for counties where the training has not been conducted
- Integrate COVID-19 response into routine health services with a clear strategy to guarantee sustainability of response and reduce the high operational cost associated with COVID-19 fight
- Maintain the operations and functionality of the EOCs with all necessary equipment and supplies
- Revise, consolidate and publish all relevant protocols and SOPs in the response
- Devise a clear strategy to resolve the payment issues of responders
- Continue the enhanced surveillance strategy (community voluntary samples collection) to increase voluntary testing
- Institute a well-structured data collection and management system at the lab and sample collection sites
- Establish voluntary sample collection sites at major hospitals across Liberia
- Implement the revised Airport Protocol for travelers
- Improve surveillance at POE especially ground crossing points
- Improve the lab turn around time for testing and results sharing
- Revise RCCE strategy and plan to address emerging situations in the response
- Integrate COVID-19 related IPC measures in the continuum of essential health services
- Establish a HCWs infection tracking system
- Reinforce HCWs awareness and compliance to COVID-19 IPC measures

4.2 Medium to Long-Term Recommendations

- Decentralize Lab capacity to improve testing and release of results during future disease outbreak
- Rehabilitate WASH infrastructure in public healthcare facilities to ensure adherence to IPC measures
- Ensure the availability of medical and non-medical supplies at county and health facility levels for routine health services and the response
- Develop standard integrated referral pathways for service delivery and the response
- Introduce home based care for mild and moderate COVID-19 cases
- Build the capacity for RCCE in Liberia
- Integrate COVID-19 related measures in the continuum of essential health services
- Implement MHPSS interventions as embedded in the SOP and Action Plan
- Conduct MPHSS orientation trainings for students, HCWs and community members for further awareness on MHPSS
- Establish Wellness Units and deploy PSS counselors in all county hospitals

Annex A: Intra Action Review Agenda

Day 1		
TIME	SESSION	LEAD
08:30-09:00	Registration and breakfast	All
09:00-09 :15	Welcome and Introduction of participants	All
9 :15 – 9 :45	Overview of the Response	Lead Facilitator
9:45-10:15	Inter-Action Review methodology	
10:15-10:30	Questions and Answers	
10:30-10:45	Group Instructions	
10:45 - 1:00	Session 1 - What worked well? What worked less well? And why? <i>Participants work to identify the challenges and best practices of the response.</i>	All
1:00- 2:00	Lunch	All
2:00 - 4:00	Session 2 - What can we do to improve for next time? <i>Participants work to identify what can be done to strengthen the ongoing COVID-19 response.</i>	All
4:00- 4:15	Health break	All
4:15- 5:15	Session 3 – The Way Forward: <i>discussion on the best way to implement these activities moving forward.</i>	All
5:15- 5:20	Announcement and Adjournment	Facilitator

Day 2		
TIME	SESSION	LEAD
08:30-09:00	Registration and breakfast	All
09:00- 11:00	Plenary 1 : Groups presentations 1). Surveillance 2). Case Management 3). Laboratory System 4). IPC and Dead Body Management 5). Risk Communication and Community Engagement 6). Coordination, Logistics and Finance	Presenters
11 :00 – 12:00	Group Work to address feedback	Lead Facilitator
12:00 - 12:45	Plenary 2: Groups presentations	
12 :45- 1:00	Next Steps	
1:00- 2:00	Adjournment and Lunch	All

Annex B: IAR Coordination Team and List of Institutions involved with the IAR

#	County	Number of Participants	Institutions/Organization
1	Bomi	25	MOH, NPHIL, STAIP, Plan-Liberia, WHO & Bomi CHT
2	Bong	22	MOH, NPHIL, LPHA, Save The Children, Phebe Hospital, WHO & Bong CHT
3	Gbarpolu	25	MOH, NPHIL, WHO & Gbarpolu CHT
4	Grand Bassa	38	Safe-MC, WHO, STAIP, WBC, EPA, MOH, NPHIL & Grand Bassa CHT
5	Grand Cape Mt	26	WHO & Grand Cape Mt CHT
6	Grand Gedeh	32	UNICEF, STAIP, Cocoa Eye, Last Mile Health, MOH, NPHIL
7	Grand Kru	25	UNDP, WHO, STAIP, CMFP, LAC, Last Mile Health NPHIL, MOH & Grand Kru CHT
8	Lofa	25	WHO, MOH, CHT, LIS and NPHIL
9	Margibi	30	WHO, MOH & NPHIL
10	Maryland	45	STAIP, PIH, WHO, NPHIL, MOH & Maryland CHT
11	Montserrado	75	MOH, NPHIL, US CDC, UNDP, UNICEF, AAH, STAIP, IRC, GIZ, AFENET & Montserrado CHT
12	Nimba	45	PACs, Plan-Liberia, AML-Yekepa, WHO, MOH, MOA, SEARCH, STAIP, LIS, YOHPE, IRC, IDDS/USAID, AAH & Nimba CHT
13	Rivercess	22	WHO, Last Mile Health, NPHIL, Rivercess County Health Team
14	River Gee	31	UNRO, WHO, MOH, NPHIL, STAIP & River Gee CHT
15	Sinoe	22	WHO, Media group (Liberty Broadcasting System, voice of Sinoe, ELBC), CBOs (YALEP, We4self), NPHIL, Sinoe County Health Team
16	National	52	Last Mile Health, USCDC, USAID, IOM, NPHIL, MFA, LMDC, WHO, PIH, GIZ, Action Against Hunger-Liberia & MOH
	Total	540	
Coordination Team			
1	National	Chea Sanford Wesseh, Lead Coordinator	
2	National	Trokon Yeabah, Facilitator/Lofa County	
3	National	Philip Bemah, Facilitator/Margibi County	
4	National	Luke L. Bawo, Facilitator/Grand Bassa County	
5	National	Dr. Ralph Jetoh/Bong County	

1). Bomi County

Bomi County reported her first case on June 12, 2020 and as of September 4, 2020, the county has recorded 20 confirmed cases as of inclusive of five HCWs. The county managed 19 of her cases at the Liberian Government Hospital in treatment unit in Bomi with no death. Bomi has no active case and has been reclassified from response to preparedness county.

Observations

The following were experienced during the three months of COVID-19 response in the county:

- Collaboration and partnership with civil society organizations improved community engagement, awareness creation and compliance of cases and contacts to be isolated and managed.
- The use of experienced surveillance officers in IDSR and community health workers at case investigators and contact tracing enhanced the surveillance and contact follow-up in the county
- The use of employees of the MOH and NPHIL and local structures to combat COVID-19 was cost effective and yielded the desired outcome.
- Engagement of political and local leaders in the county aided the response by plummeting community resistance and soliciting operational funds to address pressing needs in the response (e.g. patients feeding, fuel for treatment units and vehicles, etc.)
- Use of private radio stations to air COVID-19 messages with no cost to the response
- The early development of a preparedness plan and the establishment of an Incident Management Command before the confirmation of a case prepared the county in advance to response effectively and attained the desired outcome

Challenges

The major operational constraints experienced by the county include:

- Limited financial and logistical resources for response activities
- Lack of adhering to health protocols by community members
- No specific ambulance for COVID-19 cases. The county has a single ambulance for both response and routine health services
- Feeding cases in the treatment unit was a difficult due to insufficient funds
- Erratic power supply at treatment facility
- Untimely payment of risk benefit to response for over three months

Recommendations

The following actions were proffered to keep the county in preparedness and robustly respond to any resurgence:

- Conduct IPC stock inventory and implement recommendations
- Heighten surveillance by conducting voluntary community testing and screening at points of entry into the county
- Provide risk benefit to responders
- Engage communities to practice health safety measures and adhere to COVID-19 protocol of physical distancing, wearing of nose mask and regular hand washing

2). Bong County

Bong County's first case of COVID-19 was confirmed on June 4, 2020. The county has been reclassified as count down after recording 35 confirmed cases as of July 27, 2020. Five confirmed COVID-19 deaths were reported including 19 health workers' infection. The county has been in preparedness for over 90 days with no case and contact.

A total of 22 participants (MOH, NPHIL, Save the Children, WHO, STAIP and LPHA) reviewed the county response and provided recommendations for improvement. The intra action review conducted was like a mirror for the county incidence management team and provided an opportunity for the county to assess its COVID-19 response performance.

Observations

- The coordination pillar of the County Incident Management Command mobilized resources from business communities, local institutions, concerned citizens in county and abroad, and mining companies operating in the county. These resources helped the response team to initiate response in the absence of support from National IMS.
- The existence of the One Health Platform, headed by the County Superintendent was a driving force behind the county success.
- Contact tracing was a major challenge due to lack of precautionary observation center.
- Limited vehicles for dead body management team affected the operations of the safe and dignify burial team.
- High rate of health workers' infection due to denial and non-adherence to health safety measures
- Early detection and isolation of cases disrupted community transmission in the county
- The availability of medical and non-medical supplies (drugs, non-invasive mechanical ventilator, washing and drying machines, etc.) improve patient care

Challenges

- Pertinent among gaps identified were the lack of a precautionary observation center and the denial or misperception among confirmed cases including HCWs and community members due to the asymptomatic nature of the diseases (COVID-19).
- Persistent delay in the release of Lab results
- Delay in the establishment of a treatment facility disrupted routine services at the Phebe Hospital for over a month
- Insufficient public awareness, information, education, and communication (IEC) and behavioral change communication (BCC) materials impacted public perception about COVID-19.

Recommendations

In order to have an effective response and a resilient health system during the COVID-19 outbreak, the IMS has realized the above challenges and recommend the following:

- Reinforce community engagement and sensitized health workers to address resistance and refusal of cases and contacts to be isolated, managed and monitor
- Continued community engagement and establish precautionary observation center
- Provide two vehicles for Dead Body Management
- Establish a testing center in Bong County, at the Phebe Regional Hospital to reduce the turn around time for testing
- Procure an ambulance to improve referral and transfer of cases to treatment unit

3). Gbarpolu County

Gbarpolu was reclassified as a count down county on July 15, 2020 after 28-days of loss to follow-up of their three confirmed cases that escaped the treatment unit in Bopolu, the Chief Jallahlone Hospital. The county recorded 10 confirmed COVID-19 cases inclusive of one death and one HCW infection.

Observations

- Most of the cases were managed at the 14-Military Hospital due to limited capacity in the county
- Poor patients' management led to the escaped of three confirmed cases from the treatment unit
- The use of employees of the MOH and NPHIL with vast experience in EVD management helped the response and reduce the operation cost

Challenges

- Insufficient resources coupled with the remoteness of the county impeded the response
- Lack of an ambulance and poor road network made referral and cases transfer extremely difficult

Recommendations

- Expand the county only hospital to manage patients with infectious diseases such as EVD, COVID-19, Lassa fever and yellow fever
- Improve patient care and security by fencing the hospital
- Create public awareness in the county to reduce community resistance and adherence to health protocols

4). Grand Bassa County

Grand Bassa is a response county with sporadic cases. On 14 May 2020, the county recorded her first two confirmed cases of COVID-19 and has confirmed 54 cases as of August 9, 2020. There has been no confirmed COVID-19 deaths but 21 HCW infections from the Liberian Government Hospital in Buchanan and the Liberia Agriculture Company (LAC) Hospital. The county is in response with two active cases that are lost to follow-up.

The county-level review was participatory and was organized and led by the CHT and WHO. The team reviewed the county's response plan, identified implementation gaps, best practices and challenges. Pillar heads facilitated the discussions with eleven (11) persons in attendance for two days.

Observations

- Most of the cases were reported by community members which made case management and contact tracing easier.
- Case investigations were conducted by FETP graduates which helped to improve the quality of the response.
- Contact tracers were UN volunteers, nurses, student nurses and community health workers that were used during the EVD outbreak. This eased the understanding of the contact tracing tools and zero infection among contact tracers.
- Effective case management with zero COVID-19 death.

Challenges

- Inadequate funding with delay in receiving the allocated funds from central MOH that affected the feeding of contacts in POC and cases in treatment unit
- Delay in the payment of risk benefits to response staff
- Increased number of unofficial POEs that facilitated illegal movement of travelers across the borders with limited screening and non-compliance to health safety measures.
- Incomplete demographic and clinical information on contacts and cases thus making case investigation and contact listing impossible.
- Limited personnel for laboratory specimen collection, which slowed sample collection, and increase laboratory workload in the field
- Delayed in receiving lab results, which caused delay in discharging contacts/cases and delay in surveillance response and feedback to community members

Recommendations

- Decentralized testing centers during to prevent delay of sample results
- Increase and train diagnostic officers to improve sample collection
- Develop and disseminate a Safe and Dignified Burial policy at all levels of the response
- County should in conduct training for all laboratory staff regardless of their location
- Ensure regular supplies of drugs and medical supplies in counties
- Provide ambulances to the county for referrals and cases transport during emergencies
- Construct incinerators at treatment units
- Implement IPC and case identification protocols in healthcare facilities

5). Grand Cape Mount County

The county recorded its first case on June 16, 2020 and has reported seven (7) as of October 19, 2020. The county recorded no death and no HCW infection. There is a single active case in treatment with no contact under follow-up.

The Grand Cape Mount County Intra Action Review (IAR) was an experience for sharing lesson learned on COVID-19, documenting challenges and proposing recommendations to strengthen the response. The review was attended by 26 persons that included members of the CHT, partners and stakeholders.

Observations

- Introduced home-based care for cases due to lack of treatment facility
- Ensured that every employee of the mining company with a case was tested for COVID-19
- Regular conduct of cross border meetings with the Republic of Sierra Leone helped re-enforce the commitment to fight COVID-19 and the integration of resources to increase regional disease surveillance and prevention
- Identified all POEs and deployed community health workers monitor travelers
- Daily IMS meeting with thematic pillar leads, stakeholders and partners improve information sharing, coordination and resource mobilization such as feeding of cases, commitment to fenced proposed isolation facility and provision of washing machines
- Early training of laboratory technicians and assistant in COVID-19 sample collection, packaging and transporting facilitate appropriate sample collection and packaging in the county
- Overstay of cases and contacts in isolation due to prolonged delay in the release of lab results
- Engagement with local authority and key stakeholders reduced discrimination, denial and increased willingness to accept survivors of COVID-19 in the community
- Prior knowledge in case investigation and disease surveillance curtailed the transmission of COVID-19
- Prompt response to rumors and trained staff at POEs strengthened the surveillance system

Challenges

- Limited operational funds for patients' feeding and the management of the response
- Difficulties in getting stakeholders to attend advocacy meetings slowdown the implementation of planned activities
- Delays in distributing COVID-19 IEC materials created gaps for rumors and disbelief
- Lack of appropriate data collection forms at the onset of the response impacted data quality and information management
- Lack of triage and screening facility hindered the screening of travelers at the POEs

Recommendations

- Provide an operational vehicle for integrated response activities
- Disburse responders risk benefit
- Disseminate and distribute IEC and BCC materials as part of the preparedness strategy
- Construct triage and isolation facility at POE
- Develop and implement disease surveillance action plan

6). Grand Gedeh County

The county recorded its first case on July 20, 2020 and has a total of 14 confirmed cases as of October 7, 2020. There has been no death and no health worker infection. The county has been reclassified from response to county down.

This IAR provides an opportunity to review the functional capacity of our public health and emergency response systems within the county and to identify practical areas that need immediate improvement within the response. The methods employed during the IAR review were: zoom link for participants and technical support outside of the meeting hall, reviewed of past and current county response plans, group work and roundtable discussion. The two-days review brought together 32 participants that consist of county pillar leads, partners and stakeholders.

Observations

- Timely transfer of confirmed casa and high-risk contacts from community to treatment unit and POC for isolation reduce community transmission
- Daily counseling of patients and contacts minimized stress of fear of dying from COVID-19, improve adherence to treatment and health protocol, build trust and relationship between patients and caregiver
- Improve quality of care for patients at the POC and TU through regular monitoring of vital signs and asymptomatic treatment
- Early activation and regularization of IMS meetings (January 27, 2020) prepared the county for effective response
- Sensitized drug and medicine stores owners including traditional healers and prayer homes on the danger of treating sick people in the midst of the outbreak increase referral of patients from these outlets and their knowledge on COVID-19.
- Screening of all travelers at POEs assisted the early detection, reporting and prevention of COVID-19
- Establishment of hand hygiene stations at all POEs mitigated the spread of infection among travelers
- Early preposition of IPC materials and orientation of schools' authority on Guidelines for safe schools reopening created public awareness minimize infection among health workers and students

Challenges

- Lack of improved source of water at TU and POC affected patients and contacts hygiene practices and adherence to IPC protocol
- Limited capacity in mental health and psychosocial support overstretch the team and created delay at the district level
- Frequent breakdown of ambulances due to bad road condition affected patients' referral and transport
- No dedicated staff assigned at health facilities triages reduce the screening and monitoring of patients and caregivers
- Poor waste management at all health facilities in the county
- No isolation facility in the six health districts

Recommendations

- Improve water supply at treatment facility and POC
- Provide recovery package for survivals
- Identify isolation and treatment units in health centers
- Improve waste management at all health facilities in the county by constructing six incinerators and provision of waste bins to 26 facilities

7). Grand Kru County

On 15 April 2020, Grand Kru reported her first confirmed COVID-19 case. The county was reclassified on May 12, 2020 as a count down county and later reclassified as a county in preparedness on 10th June 2020. Unfortunately, the county slip into response on July 8, 2020 and has recorded a total of 18 cases inclusive of 14 health workers. All of the cases were treated at the various treatment units established in the county with no death reported, discharged and reintegrated into their respective communities to resume normal activities. The county is in preparedness as of October 19, 2020.

The Intra-Action Review was organized by Grand Kru County Health Team with financial and technical support from WHO and the national IMS. During the review, county supervisors including all pillar leads and district supervisors (DHOs and DHOs) worked with their respective response pillars in a face-to-face and virtual discussions within smaller group sessions to identify and document what went well, what went less well, what can be done to improve next response and the way forward. A total of 25 persons participated in the county review process.

Observations

- Set-up triage system at all health facilities to screen patients
- All confirmed cases were promptly isolated, treated, discharged and reintegrated into the community
- Fumigated POCs, treat units, response vehicles and patients' homes during the response to avoid infection and re-infection
- Conduct daily screening and tracking of all travelers at check points
- Initiated prompt investigation of all alerts, rumors, suspected, probable and confirmed cases

Challenges

- Delayed in referring emergency cases due to insufficient ambulance
- Constant breakdown of ambulance in the field due to bad roads
- No funds for patients and contact feeding
- Delayed in getting patients results from the NRL
- No incinerator at treatment facilities

Recommendations

Moving forward, Grand Kru County Health Team will continual the following activities:

- Conduct weekly IMS meetings at the county EOC and update national (MOH/NPHIL/Partners) about ongoing activities in county
- Institute random/enhance testing for COVID-19 to break the chain of transmission
- Continual cross-border surveillance activities by maintaining community healthcare workers (CHWs) at the various check points for proper screening and tracking of all travelers
- Assign active case finders in strategy communities to search for suspected cases (house-to-house)
- Conduct regular radio talk shows and health education on the spread and prevention of COVID-19
- Maintain 50% of the current response team members

8). Lofa County

On 21 May 2020, Lofa County recorded her first two confirmed cases of COVID-19 from dead bodies in the two most populated district –Foya and Voinjama Districts. The CHT and her collaborating health partners as well as the county's leadership jointly initiated a case –by-case and community focused response in order to halt the transmission and reduce the spread of COVID-19. However, the exerted effort was heavily challenged by wide spread community denial and resistance. The situation became complicated when some prominent citizens of the county and healthcare workers began to dispute the reality of the disease and doubting its pathogenicity. Contact tracing and movement of contacts into the precautionary observation (POC) became challenging as contacts resisted to be quarantined; healthcare workers were threatened by cases, contacts, and their relatives, which further created difficulties in the response. Lofa county recorded 45 confirmed COVID-19 cases, 11 deaths and 16 HCWs' infection. The county has no confirmed case in treatment, no contact under follow-up and has been reclassified as preparedness county.

The IAR brought together 25 participants comprising of key responders, members of the CHT, partners and stakeholders. It was held for two days with the support of WHO and technical assistance from the IMS.

Observations

- Total involvement of stakeholders in the response field work through advocacy, decision making and provision of necessary support
- Good cross border coordination between the health team and border security staff
- Deployed professional HCWs (Environment health technician and Registered Nurses) at each official port of entry in the county
- Correct use of personal protective materials during sample collection and transport
- Early deployment of qualified HCWs at treatment units.

Challenges

- Limited supply of essential antibiotics (Azithromycin, Cefixine, Erythromycin), IPC materials (spray can, gloves, etc) and hand washing materials increased fear among HCWs
- Poor adherence to health protocols (social distancing, mask wearing), which contributed to COVID-19 exposure and spread in the community
- Community resistance to allow burial team to supervise burial of suspected and confirmed COVID-19 cases.
- Lack of designated vehicle for the burial team for quick response to community calls for burial.
- HCWs' denial of COVID-19 existence increased the incidence of HCWs' infection.
- Delay in receiving laboratory results from national reference lab

Recommendations

- Decentralized testing centers to prevent delay of sample results
- Expand existing hospitals and health center to isolate patients with infectious diseases
- Conduct IPC assessment and preposition IPC materials during the preparedness phase of the disease outbreak
- Provide regular supplies of drugs and medical supplies
- Procure ambulances to transport cases and patients during health emergencies
- Construct incinerator at treatment units
- Train lab and surveillance officers in sample collection and packaging
- Organize a cross meeting document lessons learned and best practices

9). Margibi County

Margibi became the second response county next to Montserrado in Liberia. On 26 April 2020, a case was confirmed and the county has reported 77 confirmed cases as of October 19, 2020 with six (6) deaths and twelve (12) health workers' infection including one death. The county has active community transmission and is still in response.

The IAR is not a “blame game” exercise but an interactive process that bring together relevant stakeholders to discuss what has worked during the response, what did not work, and to document best practices and lessons learned. The primary focus of the IAR is to introduce measures that will strengthen the COVID-19. The IAR is a qualitative review of actions taken so far during the response and identified gaps. It was led by the CHT, partners and stakeholders with 30 persons in attendance.

Observations

- Engaged the Firestone Medical Center to establish a treatment unit at the center to manage cases in the Firestone Concession area.
- Established a POC at Firestone to allowed easy removal of high-risk contacts from the communities
- Pre & post counseling of confirmed cases helped reduced anxiety and fear of death
- Trained and experienced county surveillance officers led case investigation
- Timely detection, investigation and isolation of suspected and confirmed cases in county
- Strong collaboration between the county health team and corporate partners.
- Firestone collaborated with the surveillance team for community engagement and contact tracing
- Erection of checkpoints (POE) upon entry/exit into the county for temperature check and hand hygiene

Challenges

- Fear and anxiety amongst HCWs and other responders in the early stages of the response affected the response
- Delay in the release of laboratory results
- Interference from government officials in the response related to test results and case management led to demotivation of surge team
- Lack of POC in Kakata led to high-risk contacts staying long in the communities
- Investigation of cases and contact tracing delayed in Mamba-Kaba and Kakata districts because case identifiers and laboratory testing was done at the voluntary testing site in Monrovia.
- Constant stock out of case investigation forms
- Limited supports for Community Health Volunteers to conduct active case finding
- Communities dwellers refusal to abide by the health protocols including wearing of masks and hand hygiene led to increase transmission of COVID-19 in some communities.

Recommendations

- Improve coordination between Margibi and Montserrado Counties
- Increase the number of MHPSS personnel in the response
- Ensure timely removal of confirmed cases from home or community
- Recruit additional trained lab technicians for COVID-19 specimen collection
- Provide additional two ambulances for County

10). Maryland County

On 24th April 2020, Maryland reported its first case of COVID-19 case, a 24 years old male student of the Tubman University who came from Monrovia ill. The case generated 50 plus contacts. On 28 June 2020 the second second case of confirmed COVID-19 was reported just six (6) days after been declared free. Between 24 April to September 24 the county had reported 32 confirmed COVID-19 cases, including 2 deaths and 16 health workers' infection. The cases increase rapidly during this second wave. Vigorous community engagement and preventive measures (social distancing, mask wearing, etc.) were done to limit/reduce community transmission. All cases were managed in county, cured, discharged and integrated to their community.

There remains a high-risk of transmission due to low adherence of preventive measures and inter-county travels, especially to and from Monrovia. Presently, the county is in the alert phase and is prudent to review our response activities and document what went well, less well, and identify gaps and ways forward.

Observations

- Regular engagement with stakeholders and institutions to mobilize resources during the response assisted the county with funds to managed cases and contacts
- Early activation of County and District Rapid Response Teams (RRTs) enhanced Implementation of response at lower level
- Prompt isolation of case and contacts and reduce community transmission
- Early detection and investigation of all alertes and suspected cases
- Integrated surveillance with the diagnostic unit to timely collect specimens from all suspected and probable cases for testing
- Daily preparation and dissemination of county situational reports to stakeholders keeps districts, county and national stakeholders updated and enhanced prompt decision making
- Delays in training case investigators created fear initially for investigating suspected, probable and confirmed cases
- Recruitment, training and deployment of active case finders/contact tracers enhanced prompt identification and isolation of contacts showing signs and symptoms
- Identification of POEs and the depolyment of screening staff, strengthen border surveillance

Challenges

- Low adherence of the public to preventive measures increased the risk of exposure of community members
- Limited involvement of local authorities contributed to the increase misconception of COVID-19 in communities and fuelled mistrust of health care workers
- Limited funding from GOL to support COVID-19 activities delayed prompt response
- Most contacts were not moved to POC and also not following HCWs advice
- One lab technician (CDO) collected specimens from suspects, confirmed cases and contacts

Recommendations

- Involve local authority in community engagement activities during outbreak and essential health services
- Conduct refresher training for case investigators
- Procure and distribute IPC supplies to health facilities and POEs (check points)

11). Montserrado County

Montserrado is the epicenter of the response and the index case was confirmed on March 16, 2020. As of October 20, 2020, the county has the highest number of confirmed COVID-19 cases (965), deaths (43) and health workers' infections (81). The number of active cases in the community exceed those in the treatment unit due to resistance and refusal to be managed at a treatment facility. Presently, there are 21 active cases and 101 contacts under follow-up.

The IAR implementation consisted of an interactive, structured methodology considering user-friendly materials and interactive facilitation techniques. This was an opportunity for County level responders within Montserrado to reflect on the work done and identify areas of improvement to further strengthen the response. It started on Sept. 16, 2020 and lasted for two days with participants from MCHT (Including all response pillars and routine health services), NPHIL and partners including WHO, USCDC, UNDP, UNICEF, AAH, STAIP, IRC, GIZ and AFENET. Due to the nature of COVID-19 and taking into consideration IPC measures the meeting was held on site at the Golden key hotel and was also available by ZOOM meeting platform. There was a total of 75 participants who attended the review.

Observations

- Multi sectorial approach to the response strengthened resource mobilization
- Activated and maintain the county-level EOC and call center throughout the response this strengthened communication and information sharing
- Prior to implementing testing at the airport, all passengers coming into the Country were screened at the airport and monitored while undergoing quarantine for 14 days.
- Prior establishment of structures for disease surveillance and response with capacity built in outbreak preparedness, surveillance and response at all levels of the county health system facilitated timely detection, investigation and response to outbreak activities
- Enhanced Surveillance Cluster Outreach. This was an approach geared towards increasing voluntary testing and identification of additional cases from hotspots.
- Usage of electronic data collection and analysis system facilitated real time reporting, analysis and dissemination.

Challenges

- Challenge in locating cases and contacts due to recording errors and inadequate identifier information recorded during investigation (limited probing)
- Ambulance delays in picking-up cases and high-risk contacts due to centralized process and bureaucracy in accessing ambulance services
- Delay in sample collection and the provision of results from the laboratory
- Challenge in getting lab data (line-list of samples collected) after stopping the Kobo Collect data platform. Team had to wait for lab results before getting a clear understanding of samples collected

Recommendations

- Ensure decentralization and holistic community involvement from the onset of every public health emergency
- Place DBM staff on MOH payroll
- Rehabilitate WASH facilities in healthcare facilities to prepare for disease outbreak
- Decentralize ambulance services
- Ensure the availability of medical and non-medical supplies at health facilities

12). Nimba County

The county was declared a response county on April 8, 2020 with a confirmed case. Nimba has had a total of 61 confirmed cases as of October 20, 2020, 11 deaths with 13 HCW infections. There is no case and contact under follow-up and the county has been reclassified as in count down.

After five months of a frantic COVID-19 response, the IMS with support from WHO organized an IAR to evaluate the county response activities. The review process was conducted in three steps; Step one documented the best practices, impact of those best practices and the enabling factors while step two focused on challenges, impact of those challenges and step three outlines the recommended actions needed to improve the response. A total of 45 persons attended the review.

Observations

- The use of the existing surveillance structure in county to conduct active case finding, contacts tracing and case investigation was cost effective and aided the response
- Inter-county communication on active case finding, contacts tracing and case investigation helped track lost to follow up cases, identified cases and contacts from other counties
- Timely isolation of cases and health workers willingness to respond promptly in the absence of financial incentives helped to break the transmission chain and minimized the mortality rate
- The use of existing hospitals as treatment units and the use of staff of these institutions reduced operational cost
- Community-based organizations, civil society organizations and health implementing partners were fully involved with COVID-19 risk communication and community engagement activities
- Regular counseling of cases in treatment unit and community levels reduced stigma and improved patients' outcome.
- The use of appropriate PPE while collecting COVID-19 specimen prevented Laboratory personnel from being infected

Challenges

- Community members' denial of COVID-19 existence and refusal to access health facility due to fear and lack of trust in healthcare providers fueled the spread of the virus
- Lack of specific ambulance(s) for patients referral poses constraints and threat to service providers
- Lack of vehicle for burial team and other thermatic team
- Delay by reference lab in providing COVID-19 results
- Lack of psychotropic medication in treatment unit/county caused difficulties in handling patients with severe/complicated mental health condition

Recommendations

- Increased community engagement, awareness and sensitization
- Provide medical and non medical supply including IPC materials (gloves) to the treatment units and health facilities
- Provide support for patients' feeding
- Delayed in receiving financial and material support affected the response
- Integrate COVID-19 response into routine health services

13). Rivercess County

Rivercess was declared a response county on July 10, 2020 with a confirmed case of COVID-19. The county has recorded a total of five (5) confirmed cases inclusive of two deaths and three health workers as of October 20, 2020. The county has been reclassified as a county in preparedness.

The IAR with the objective of documenting best practices, challenges as well as lesson learnt from the response was implemented from the 17th to the 18th of September in Rivercess. The WHO and the national IMS provided guidance to the county health team during the conduct of the review. A total of 22 participated in the IAR for two days.

Observations

- Trained local journalists from three radio stations to air COVID-19 messages and create awareness on the virus
- Selected Dead Body Management Team from their community to increase trust in the system, and cooperation of community during safe and dignified burials.
- Developed a simpler version of the case management protocol for better understanding and use at the county-level.

Challenges

- Lack of a dedicated vehicle assigned to the IPC team resulting to delay in response and supportive supervision
- Delayed lab results and at times missing results affected patient management
- Lack of a designated vehicle for the response, affected the response and follow up actions
- Lack of support for the roll out of COVID-19 case management training to other clinicians
- The single available ambulance was available being used for both response and routine health services
- High level of misconception about COVID-19 made it difficult to isolate cases

Recommendations

- Provide operational support for EOC during outbreak
- Work with the county to establish POC
- Provide financial support for response activities
- Conduct training for surveillance officers in COVID-19 surveillance protocols
- Mobilize funding for COVID-19 surveillance activities
- Continue COVID-19 awareness
- Established in county COVID-19 testing site
- Build capacity of lab personnel to collect COVID-19 samples at primary health care facilities
- Include training of journalists in the outbreak information dissemination and awareness creation
- Improved information sharing during outbreak response

14). River Gee County

On April 23, 2020 River Gee confirmed its first COVID-19 case. The county recorded a total of 36 positive cases as of October 20, 2020 with ten health workers and 143 contacts listed and monitored. All cases were treated at the Fish Town Referral Isolation Center with 100% patients' recovery. The county has been reclassified as a preparedness county.

This IAR provided an opportunity to review the functional capacity of our public health emergency response in the county and at the districts level. The purpose of the IAR was to identify practical areas that need immediate attention in the response. A total of 31 participants attended the IAR for two days.

Observations

- Re-activated weekly IMS Meeting and County COVID-19 Taskforce ahead of the outbreak in the county.
- Deployed professional health workers at the points of entry with motivational package (incentives, rain gears, thermo scan, etc).
- Established triages at 4 POE and seven (7) check points to monitor temperature and ensure hand washing of all travelers
- Early training of Lab staff in collecting and packaging of COVID-19 specimen by the National Reference Lab.
- POC donated to the CHT by the community at no cost
- Partners (GIZ & SP) and other well-meaning individuals exclusively supported the POC
- Psychosocial team visited both POC and TU twice daily.
- Pre-positioned IPC materials at health facilities
- Restricted vaccination outreach services

Challenges

- Clients' resistance to accept results
- Delay in getting lab results
- Limited logistical support (motor bike, fuel, gasoline, stationery, computer ink, paper, etc.)
- Lack of functional isolation centers at 19 health facilities
- Staff attrition and irregular incentives for response team members
- Delay in transporting of specimens by road to the reference lab and return of lab results
- Lack of routine test kits, reagent and some Lab materials (Widal test strips- reagent, glucose meter, etc)
- Only one ambulance available and no standard operating procedures for ambulance services
- Little or no resources for feeding of staff and clients at the Isolation Unit
- Insufficient water supply at the Isolation Unit
- Stock out of some PPE (gloves, boots) and leak-proof waste bins supplied

Recommendations

- Provide logistical support for the response
- Continue health education through community engagement meetings and regular radio talk shows on COVID-19 and other infectious diseases
- Build and furnish 19 health facilities as isolation centers
- Develop SOP for Emergency Medical Service (EMS)
- Expand current TU to accommodate more patients

15). Sinoe County

Sinoe has recorded a total of six (6) confirmed cases since their first case was diagnosed on April 22, 2020. The county reported a single COVID-19 death and two HCWs' infection. The county has been reclassified from response to preparedness county.

The IAR was organized with the objective of documenting best practices, challenges as well as lesson learnt from response. The review was held on the 23rd and 24th of September 2020 in Greenville City, Sinoe County. It brought together partners and pillar leads to share lessons, best practices and key challenges. A total of 22 participants attended the review meeting.

Observations

- Early activation of IMS and stakeholders' engagement ease the burden on the county health team.
- Decline in utilization of essential health services due to community misconception of COVID-19 and myth of the virus being spread through vaccines
- Community engagement meeting, rumors tracking and mitigation were jointly conducted with CBOs, CSOs and the traditional council. This increased community trust and openness to relate to the health team.
- The dead body management team was activated and provided orientation based on lesson learnt from the EVD outbreak.
- Surveillance officers from other districts were reassigned to outbreak district to provide support for case investigation
- Contact tracers were recruited from the community and trained to monitor contacts
- Established screening sites at ground crossing with Rivercess, Grand Kru and Grand Gedeh Counties

Challenges

- Inadequate financial and logistical support for the response thus affecting the timely verification of rumors
- Non-compliance from some contacts to submit samples during and at the end of monitoring
- Lack of COVID-19 testing facility in county resulted to delay lab results
- One ambulance available to respond referrals and cases transport to treatment unit.
- Not all case management team members were formally trained in COVID-19 IPC and case management protocols. This decreased the confidence and increased fear of service providers
- Limited medical supplies, and no equipment to manage difficult breathing patients
- Lack of water supply at treatment facility

Recommendations

- Provide timely financial support for response activities
- Continue coordination activities with partners
- Conduct training for surveillance officers in COVID-19 Surveillance protocols
- Rollout IDSR guideline to district and health facilities
- Expand and equip F. J. Grante Hospital to manage cases with infectious diseases
- Build capacity of Lab personnel to collect COVID-19 samples at primary healthcare facilities
- Rollout COVID-19 IPC and case management training to health workers who did not benefit
- Make available one ambulance for COVID-19 response
- Provide rain gear for community mobilizers