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Emergency Preparedness in Response to 2021 Ebola Virus Disease Resurgence in Guinea – Successes and Lessons Learnt from A Model Incident Action Plan

[1,2]Alhaji U. N'jai, [3]Lily Anna Miatta Kainwo, [3]Andrew O Charles, [3]Mohamed Vandi, [3]Ali Wurie, [4]Margret O. Lamunu, [3]Mukeh Fahnbulleh

[1]Department of Microbiology, College of Medicine and Allied Health Sciences and Department of Biological Sciences, Fourah Bay College, University of Sierra Leone, [2]Project 1808, Inc, Sierra Leone, [3]Directorate of Health Securities and Emergency, Ministry of Health and Sanitation, Sierra Leone, [4]World Health Organization, Geneva, Switzerland

Abstract

The 2013-2016 deadly Ebola virus disease (EVD) outbreak infected more than 14,000 Sierra Leoneans, nearly 4,000 died, and caused significant loss of livelihood. The burden of EVD survivors, impacts on health care, and economic loss raised awareness about building a robust national public health emergency system for effective preparation and response to future disease outbreak. Here, we highlight the successes, challenges, and lessons learnt from the development and implementation of the EVD Incident Action Plan (IAP) following February 2021 resurgence of virus in Guinea. The resurgence of Ebola in Nzerekore, Guinea provided a test case for the resilience of the Public Health National Emergency Operations Center established in 2016. Following emergency declaration in Sierra Leone, an incident management system was established with an incident manager, deputy manager, and working groups organized by pillars including leadership and coordination, epidemiological surveillance, case management, laboratory, risk communication, logistics and vaccination. Key objectives were to prevent spill over from Guinea and rapid containment in the event of a case. The key strategies include development and launch of IAP through wide ranging consultative process, prioritization of districts for elevated readiness, capacity development, risk communication, preemptive vaccination, inter-pillar coordination on cross-cutting issues, systems development, and training. 10 districts were prioritized for readiness, which were further segregated into priority one, two, and three based on risk assessment from the epicenter of outbreak. Rapid response teams to districts provided initial assessment of readiness, which was followed by national simulation exercises in all 16 districts with emphases on point of entry coordination, infection prevention and control, surveillance and risk communication that identified strengths, gaps, and weaknesses. Overall discuss of this paper will highlight the development of the EVD IAP, successes, lessons learnt, and its utility as model for other viral hemorrhagic fevers or disease outbreaks

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Introduction

The Republic of Guinea confirmed seven reported cases of Ebola Virus Disease (EVD), including three deaths on Sunday February 14, 2021, in a press release issued by the Ministry of Health (WHO, 2021; Keita et al., 2021). The report revealed that one of the suspects travelled from N'zerekore via Guegedou (closer to Koindu and Kailahun Districts) to Conakry with possible stop overs, using public transport. The Emergency management systems in Guinea was immediately activated with notification sent to the neighboring countries, including Sierra Leone.

EVD is a severe and very fatal illness in humans. The virus is transmitted to humans from wild animals, and spreads in the human population through human-to-human transmission. It can be transmitted through human contact with body fluids of a person infected with the virus, or through sex. Major symptoms of the disease include some or all of the following: fever, unexplained bleeding tendencies from nose, gums, vagina, skin or eyes, as well as vomiting and diarrhoea.

Risk for Potential Spread to Sierra Leone

Sierra Leone is considered to be at very high risk for potential spread of the Guinea Nzerekore EVD outbreak due to the following factors:

- Sierra Leone neighbours Guinea to the North and North East of the country; and Liberia to the East. The current Epicentre of the EVD outbreak in N'Zérékoré prefecture in Guinea is close to Kailahun District in Eastern Sierra Leone. Kailahun District was significantly affected by the 2014/16 Outbreak of EVD that had spread from the neighbouring Gueckedou District in Guinea (Alexander et al., 2015; Dixon and Schafer, 2014; Piot et al., 2014) .
- The borders between Guinea and Sierra Leone are porous, allowing for free cross border movements. In 2014, within few weeks of the first Ebola case in Guinea, the epidemic had inconspicuously spread across land borders to Liberia and Sierra Leone. Additionally, the border crossing points between Sierra Leone and Guinea have now been officially re-opened after several months of closure due to the threat of COVID-19 (Cenciarelli et al. 2015).
- Nzerekore, the 2nd largest commercial centre in Guinea after the capital Conakry, is a major transport hub for people in Guinea as well as people travelling to and from neighbouring countries such as Sierra Leone, Liberia and Mali
- As of 15th February 2021, one EVD case was confirmed in Conakry. The case had travelled from the epicentre (N'Zérékoré prefecture) to Conakry in the western side of the country (nearly 900km by road), which further sheds light on the potential high risk for further spread inside Guinea and to Sierra Leone.
- The Public Health System in Guinea is currently over-stretched as the country is battling 5 outbreaks (EVD, COVID-19, Yellow Fever, Poliomyelitis (cVDPV) and Measles), creating more challenges

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for containment, and potential risk of spread.

All these factors increase the risk for potential cross border transmission, placing the country at great risk necessitating establishment of precautionary measures, and building capacities for EVD response to facilitate early detection and response in case of spill over.

Context

- Sierra Leone is currently placed at a very high-risk for potential EVD importation from the on-going outbreak in Guinea. The country shares boarders with Guinea and Liberia, most of which are unmanned and presents serious threat for potential cross boarder transmission. This risk of importation is further compounded by the fact that the epicentre of the outbreak in Guinea is a high transport hub for west Africa/international travel and trade route, and with frequent movement of people between Sierra Leone and Guinea for business, school, visa issuance, farming and medical purposes.
- In May 2014, an outbreak of EVD in neighbouring Guinea spilled over to Sierra Leone, resulting in widespread transmission country wide with devastating consequences to country. The spread of the 2014 EVD outbreak to Sierra Leone resulted in an estimated 14,000 EVD cases (suspect, probable and confirmed cases), over 4,000 deaths, and an estimated 5,000 survivors. The country's economy was severely damaged with far reaching adverse impact on lives and livelihoods. The outbreak also took a global reach, impacting a total of six countries in the continents of African (Guinea, Liberia, Sierra Leone, Mali, Nigeria, and Senegal), Europe (Italy, Spain and United Kingdom – UK), and the United States of America (USA) (Kramer et al., 2016).
- Sierra Leone has been battling with the COVID-19 since March 2020, and all 16 districts are affected, with more concentration of cases in the Western Area Districts. All 16 districts have been building capacities to respond to COVID-19 and any other potential outbreak.
- The country has been rebuilding its health systems since the last EVD outbreak in 2016, and has better surveillance and early warning systems, strong public health emergency operation centres at national and district levels and trained rapid response teams (RRTs) that can be dispatched within 24 hours of an incident. Laboratory capacity has also significantly improved in comparison to the Laboratory status during the previous Ebola outbreak.

Despite the significant improvements in health system and public health capacities in Sierra Leone to date, the overall preparedness capacities for EVD remain sub-optimal. An outbreak of EVD during COVID-19 pandemic will quickly overwhelm existing capacities and result in serious devastation (Omoleke et al., 2016; Huber et al., 2018; Gostin et al., 2014; Marston et al., 2017). Given the fresh memories of the devastating 2014/16 EVD outbreak, and the presence of

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other on-going outbreaks and public health emergencies in the country, it is imperative for the MOHS and partners to pro-actively collaborate and work closely to implement measures to prevent EVD importation, and ensure operational readiness for potential and effective response to contain and mitigate community wide transmission in the event of a spill over.

Following the notification of current EVD outbreak in Guinea on February 14, 2021, the Public Health National Emergency Operation Centre (PHNEOC) of the MoHS immediately convened PHEMC meeting, chaired by the Minister of Health and Sanitation (MOHS), to plan and discuss steps for collaborative efforts to prevent spillover of the EVD, as well as strengthen capabilities for early detection and response for containment in the event of an importation of EVD cases from Guinea. As part of preparedness and operational readiness measures, the government of Sierra Leone has activated a level II Health Emergency Response System to facilitate implementation of scaled up and intensified EVD operational readiness activities to close current gaps and ensure readiness for response.

This Incident Action Plan (IAP) was developed jointly by MOHS and partners. It provides a road map for enhancing preparedness and readiness activities, including a contingency plan for preliminary response in the event of a confirmed EVD case in the country. The EVD IAP covers a duration of six months initially and will be reviewed and updated taking into consideration the evolution of the epidemic in Guinea, continued threat for spread into Sierra Leone, and progress made in rolling out the preparedness and readiness plan. The IAP will also provide a basis for advocacy and resource mobilization, monitoring and evaluation, and for reporting progress (Welby-Everard et al., 2020; Dhama et al., 2015; Abayomi et al., 2021).

Planning Assumptions

This development of the EVD readiness plan was informed by the following key assumptions;

- While 10 districts have been prioritized for intensified EVD operational readiness activities, it is understood that the first EVD case may be confirmed in any of the 16 districts. However, EVD preparedness capacities that have been established following the 2014 /16 EVD outbreak, including having a strong surveillance /IDSR in all districts will aid early detection that should result in an immediate risk assessment, development and implementation of a comprehensive joint response plan with all partners and stakeholders.
- The outbreak in Guinea may be rapidly contained within the first 3 months of detection because of previous experience, and the Guinea could then embark on a 42 count down period, followed by another 90 days of enhanced vigilance. This is the rational for the six-month (March – August) EVD operational readiness plan in Sierra Leone. Should the outbreak in Guinea extend for a longer period with sustained risks for potential spread to Sierra Leone, then implementation of this plan will be

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reviewed before the end of the six-month period and updated based on gaps
- Should Sierra Leone confirm an EVD case on its territory during the six-month implementation period of the plan, then an EVD response plan will immediately be developed and implemented based on a risk assessment

Goal and Objectives

The goal of this EVD IAP was to protect the population of Sierra Leone from potential EVD outbreak that may extend from the ongoing EVD outbreak in Guinea, save lives and negate any other potential negative impact on the economy.

The general objective was to enhance operational readiness capabilities to mitigate potential virus spill over from Guinea and spread into the general population, and to strengthen operational readiness capabilities for EVD containment in the event of a confirmed case. The IAP also outlines immediate actions and budget for preliminary response to a detected case as efforts are underway to develop and implement a comprehensive response plan to contain any confirmed EVD outbreak to prevent further spread.

The specific objectives are:
- Strengthen risk communication and enhance community awareness of the EVD outbreak in Guinea and the potential risks, and the need for sustained vigilance and engagement for prevention, preparedness and possible response
- Heighten EVD alert and enhance EVD surveillance and early warning mechanism to facilitate early detection and build capacities for enhanced EVD surveillance for prompt response
- strengthen EVD screening and diagnostic capabilities to facilitate timely screening and confirmation of EVD cases for timely and effective response and containment measures
- Enhance capacities for case management, psychosocial support, Infection prevention and control, including dead body management and waste management
- Implement preventive vaccination of high-risk health care and frontline workers, and strengthen capacities for outbreak response vaccination, use of EVD therapeutics and research
- Ensure adequate logistics for EVD operational readiness, catering for medical, non-medical and operational logistics
- Ensure effective leadership and coordination of EVD preparedness and readiness activities and strengthen capacities for coordination of EVD response operations at national and district levels
- Ensure adequate contingency measures to facilitate immediate response to confirmed EVD case or outbreak

The EVD IAP will serve and provide the basis for targeted resource mobilization, monitoring and tracking of progress for coordinated operationalization of readiness

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activities and for reporting by all stakeholders.

Priority Districts and Health Infrastructure for EVD Operational Readiness

Based on assessed risks for potential outbreak spread to Sierra Leone, the country prioritized 10 districts for intensified priority readiness activities, while maintaining flexibility in the strategy as it is difficult to predict with certainty where the first confirmed EVD case may appear (. The 10 priority districts have been further segregated into priority 1 districts (Kailahun, Kono, and Kambia), priority 2 districts (Falaba, Koinadugu, Karene, WAU and WAR), and priority 3 districts (Kenema and Pejuhun) as shown in Figure 1a. The readiness activities in each of the districts will target DEOC, hospitals, PHUs, POEs, Wharfs and communities. Figure 1b. is a map of Sierra Leone showing the total numbers of hospitals, PHUS, POEs and wharfs in each of the priority districts.

Figure 1a. Map of Sierra Leone Showing Priority Districts for EVD

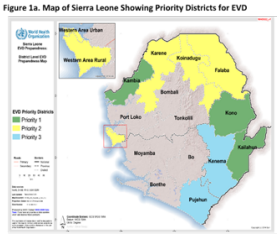
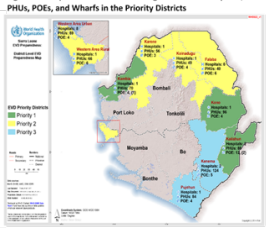


Figure 1b. Map of Sierra Leone Showing Numbers of Hospitals, PHUs, POEs, and Wharfs in the Priority Districts



EVD Preparedness and Readiness Strategy

The EVD IAP aimed to ensure multi-sectoral collaboration and coordinated effort to scale up and strengthen implementation of priority actions for EVD operational readiness activities. Activities will be coordinated through the EOC. The Incident Management System, headed by an Incident and Deputy Manager, and comprising of pillars and sub-pillars will provide the structures and platform for reviewing of needs, planning, implementation, reporting and monitoring of progress. Sectoral and other partners will embed themselves in the various pillars based on their mandate, functions and Interest. Weekly coordination meetings will be held to plan for, develop and review activity implementation.
The following strategies will be used to scale up operational readiness activities:

- All EVD readiness activities will be coordinated through the EOC, using the activated EVD Readiness Incident Management System
- For purposes of efficiency and coordinated actions, the various areas of interventions for EVD readiness have been organized under eight pillars and sub-pillars. Each pillar is headed by pillar, and deputy pillar leads. The pillars are:
    - Leadership and coordination
    - RCCE
    - Epidemiological Surveillance (including contact tracing and POEs)
    - Laboratory diagnosis
    - Case Management and IPC/ WASH (including therapeutics, MHPSS, SDB, waste management)
    - Vaccination and Research
    - Essential Health Services, and
    - Operations and Logistics (focussing on medical, non-medical and operational logistics)

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- Efforts will be made to ensure joint operationalization and implementation of similar activities, or targeting audiences with similar needs with comprehensive interventions
- Scale up activities at national and district levels will build on achievements gained from previous emergency response interventions and on existing systems as much as possible; aim at strengthening district level capacities, empowering communities for engagement and ownership, and effectively coordinated with on-going COVID-19 response actions to ensure the realization of both EVD readiness and COVID-19 response goals in an equitable and rationalized manner.
- Assessment of existing capacities, and needs will inform the implementation of targeted interventions to ensure operational readiness activities to support possible response actions

Pillar Objectives, Activities and Expected Results

Pillar 1: Leadership and Coordination

Background: The MOHS has a Physical structure and functional EOC at the national level that was established during the 2014/2016 EVD outbreak and further strengthened post outbreak containment. The national EOC is used to coordinate preparedness and responses to on-going emergencies. Currently, the Government has two running Incident Management Systems; one for COVID-19, and the other for EVD intensified operational readiness activities. However, each of the event specific emergency operational activities require its own implementation plan and budget. An EVD readiness specific Incident Management System (IMS) was stood up by the Government on the 14 Feb 2021 at national and district level following risk assessment and prioritization. Staff were repurposed to the national and district level EVD Incident Management System (Figure 2, annex 1).

The national and district level Incident Management System are responsible for leading, coordinating, overseeing, monitoring and reporting on the EVD readiness activities. The current readiness activities also provide an opportunity to strengthen both national and district level emergency operations.

Scope of activities and expected outputs: The following activities will be undertaken under Leadership and Coordination pillar at national and district levels:

- Lead and coordinate multi-sector and multi-partner efforts to plan, implement, monitor and implement EVD operational readiness activities through convening and facilitation of required meetings, and provision of oversight on day-to-day activities
- Establish and enforce standard procedures to guide implementation of activities
- Coordinate, guide and oversee development and implementation of comprehensive EVD preparedness and readiness activities, incorporating district level plans and budgets

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- Coordinate, guide and oversee development and implementation of contingency plans for immediate response to a confirmed EVD case
- Coordinate and facilitate detailed preliminary operational plan for the first 72 hours to10 days of response actions in EVD context (comprehensive response to the first few cases of EVD with the aim of early containment and extinguishing the outbreak)
- Re-activate and strengthen the priority district level coordination mechanism to establish, manage, plan develop, implement and report on progress
- Conduct advocacy and resource mobilization for plan implementation
- Develop mechanisms to track funding, resource utilization and financial reporting
- Mobilize and convene partners in support of plan implementation and implement/update the 4Ws for donors and implementing partners
- Facilitate and coordinate the implementation of reviews and lessons learning through functional review exercises (tabletop exercises, drills, SIMEX,), intra-action and after-action reviews, as well development and implementation of comprehensive plans for addressing gaps (O'keefe et al., 2016)
- Mobilise required surge capacity needs
- Facilitate the utilization of existing bilateral cross border collaboration mechanisms with a focus on surveillance, collaborative cross border investigations and information sharing
- Strengthen and streamline frameworks and mechanisms for emergency funds disbursement from central level to priority districts and ensure operational SOPS for financial disbursement and management are communicated
- Establish a PSEA (Protection against sexual exploitation and abuse) desk integrated with GBV (Gender-based Violence) under the IMST, and collaborate with partners to develop and implement program, integrated within the EVD strategic actions and plans, to mitigate potential PSEA incidences and impact on communities
- Develop and implement monitoring system and establish communication systems for regular update of all stake holders
- Conduct supervision and assessment of district level operational readiness activities
- Mobilize logistical support for the running of the EOC
- Maintain regular communications with priority district DEOCs with situation updates about progress of EVD preparedness activities.

Pillar 2: Risk Communication and Community Engagement

Background: Effective community engagement and risk communication strategy is instrumental for garnering community trust, participation and engagement in EVD prevention and mitigation measures, as well as in promoting community led, and

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community owned operational readiness activities (Wilkinson et al., 2017; Richards et al., 2019). The RCCE Pillar is led by MOHS and comprise of key partners, at national and district levels.

Scope of activities and expected outputs: Scope of activities linked to tangible outputs for the RCCE Pillar for EVD operational readiness include:

- Update/develop a RCCE strategy, work plan, monitoring mechanism, and budget and map out key partners, stakeholders, capacities and gaps, as well as key activities to strengthen risk communication and community engagement for EVD operational readiness
- Strengthen technical and financing partnerships for RCCE for EVD through regular meetings
- Enhance strategic advocacy, risk communication and community engagement on EVD
- Establish partnerships with the media, and build their capacities to engage in risk communication and readiness for EVD
- Facilitate and ensure timely corporate communications on EVD readiness through Press conferences, media briefings, and other media communications for EVD (e,g. on radios and televisions)
- Develop and scale up implementation of EVD related community led actions including supporting community-based surveillance and early warning systems in at-risk priority districts
- Develop/update key messages on EVD risks and prevention, produce relevant IEC materials and disseminate through appropriate channels including through media, and awareness campaigns
- Develop and implement systems for active rumour and mis-information monitoring and countering
- Map and gather social behavioural data for evidence-based messaging on EVD, from KAP, rapid polling, and FGDs
- Implement refresher training of Community Engagement officers and other resource persons to support districts in RCCE, and orient district level RCCE officers
- Map critical communication networks and key influencers at national and subnational level, and develop an engagement plan
- Engage/orient key influencers (local government, politicians, journalists, community/religious leaders, security forces etc.) at community level on EVD risks, prevention and their role
- Develop and implement strategies and messages to mitigate stigmatization of survivors and families
- Develop and implement communication strategy and messaging on EVD vaccination.

Pillar 3: Epidemiological Surveillance, Contact tracing and POEs

Background: Sierra Leone has been strengthening its surveillance and early warning systems since 2016 following the containment of the catastrophic EVD outbreak. Sierra Leone now has a robust disease surveillance and early warning

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system that tracks the occurrence of certain priority diseases in all districts throughout the country. Over 95% of health facilities consistently report their weekly surveillance information to the MoH. The data is analysed each week and the outputs discussed at the WHO country office and at the MoH directorate of health security & emergencies. The e-IDSR has reinvigorated the surveillance system and improved compliance by PHUs and hospitals in reporting weekly surveillance data (Lal et al., 2022). Surveillance data is transmitted electronically from the health facilities and PoEs to the MOHS controlled web based DHSII database, which is the archive for surveillance data, including outbreak data. The MoHS also has capacity at national and district level to deploy rapid response teams within 24 hrs. These systems, however, require further enhancement to improve early detection of alerts, early reporting, investigation, followed by response if necessary. Additionally, there is need to strengthen surveillance capabilities for outbreak response and ensure flexibility in shifting from routine surveillance to outbreak response, and ensuring adequate capacities for case verification and investigation, contact listing and follow-up ((Busch et al., 2015; Frieden and Damon, 2015; Oleribe et al., 2015; Heyman et al., 2015; Jacobsen et al., 2016).

Scope of activities and expected outputs: The EVD readiness activities for epidemiological surveillance and early warning and potential response, with expected outputs are organized under four sub-pillars that include: 1. Epidemiological surveillance, early warning and investigations; 2. POEs; 3. 117 National Emergency Call Center; and 4. Contact tracing capacities.
Activities for each of the sub-pillars are outlined below:

Sub-Pillar 1: Epidemiological surveillance, Verification and Case Investigation

Activities shall comprise of:

- Intensified and heightened surveillance at community and health facility levels through enhanced awareness and vigilance for case detection
- Establish mortality surveillance system focusing on EVD
- Train health facility staff and community health workers on case detection (and use of EVD case definition), case verification and investigation
- Roll out or enhanced community-based surveillance system for EVD
- Orienting rapid response teams (RRT) at national and district level on various aspects of effective EVD preparedness & response
- Sustain capacities for verification and investigation of all reported VHF alerts by ensuring availability of functional and equipped RRTs at national and district levels
- Digitize EVD surveillance data collection and transmission by using electronic tools
- Strengthen human resource capacity for enhanced surveillance at district level through recruitment, orientation, support supervision, and on-job-training.

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- Conduct SIMEX to assess functionality and sensitivity of the VHF/EVD surveillance system
- Conduct EVD preparedness assessments in districts, health facilities and PoEs.
- Review/adapt, print and disseminate surveillance tools and resources i.e. case definition, case investigation form, contact tracing line-listing form, quarantine guidelines, SOPs, surveillance guidelines, passenger (traveller) locator forms for border crossings etc.
- Support supervision and on-job-training at health facilities and PoEs
- Implement mortality surveillance to identify EVD suspicious deaths (verification of all deaths prior to burial to identify EVD suspected deaths, investigate, collect swabs and line-list contacts)
- Provide logistical support to the disease surveillance program at national, district and chiefdom levels to effectively deliver on EVD preparedness

Sub-Pillar 2: Point of Entry (PoE)

Screening at POEs can contribute to enhanced EVD alerting and surveillance system through improved case detection and border crossing points. Sierra Leone has prioritized two POEs (Luawa and Koindu) in Kailahun District; one POE (Gbalamuya)and two Wharfs in Kambia District; and a total of 6 Wharfs in WAU. The plan is to implement screening at the prioritized POEs, and to conduct awareness on EVD risks, prevention, recognition and reporting. Port health, maritime officials and security officers will be targeted for preventive vaccination campaigns.

Scope of activities will include:

- Equipping of the PoEs with primary necessities such as thermo-guns, gloves, data collection stationery, pens etc.
- Temporary deployments of port health officers for PoEs (Class B) in border districts
- Develop and disseminate related SOPS, and tools, specify referral mechanisms
- Conduct rapid capacity building of PoE staff
- Set up and equip temporary holding units for suspect cases at prioritized POEs
- Conduct SIMEX to test capacities to manage public health events at PoEs
- Conduct regular and sustained supervision/monitoring and on-job-training of port health staff at priority PoEs
- Conducting cross-border surveillance coordination meetings for EVD

Sub-Pillar 3: Contact Tracing

Contact tracing is a strategy used as part of surveillance to identify all high-risk contacts and monitor them for symptom development so they can be isolated in a timely manner to prevent further spread of EVD. Guidelines and SOPs for contact tracing have been distributed to the District Health Management Teams (DHMT). The data management system for EVD contact tracing at district level is now well established.

To improve EVD operational readiness, the following activities will be under-taken;

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- Train at least one members of the DSO team per district on GoDATA app for data management
- Train and organize contact tracing coordinators at every chiefdom
- Include testing of contact tracing capacities at district level in SIMEX for EVD preparedness at priority districts

Sub-Pillar 4: 117 National Emergency Call Centre

The National Call Centre along with the district alert desks provides the "hot -line" services for immediate notification of alerts and rumours. Most staff at the Call Centre were recruited for COVID response with short term contracts. Additionally, there is a strong community perception of linking the 117 Call centre with previous EVD outbreak for referral to isolation or treatment centres, resulting in trauma and reluctance to use the call centre.

To strengthen the capacities to deal with the volume of work during the EVD operational readiness, and strengthen the system, including improving community trust, the following activities will be implemented:

- Provision of Internet connection to facilitate communication
- Mobilization of additional human resources at the national call centre, or extending existing contracts to cater for EVD related activities
- Provision of laptops
- Upgrade of the data and software capturing system
- Community mobilization and awareness to increase trust in the system

Pillar 4: Laboratory Diagnosis

Background: With six laboratories having the infrastructure and expertise to conduct EVD testing, over 40 molecular scientists, and, several competent specimen collectors at national and sub-national level, Sierra Leone has considerable laboratory capacity to conduct EVD diagnosis. This capacity was largely established and/ or developed during the 2014-2016 EVD epidemic in West Africa, including Sierra Leone. Additionally, Sierra Leone continues to benefit from the technical support provided by national and international partners.

As part of routine disease surveillance conducted using the Integrated Disease Surveillance and Response (IDSR) approach, all suspected cases of VHFs are tested for EVD at one of the 4 national (CPHRL, Jui P3, Connaught Hospital & 34 military hospital) and two subnational (Kenema and Makeni) laboratories. There are, however, critical gaps in efficient supply of essential diagnostic commodities, WASH inadequacies, intermittent supply of electricity at some laboratories, weak and unintegrated specimen referral system, among others, which undermine the existing diagnostic capacity for EVD (Gupta et al., 2021; Sealy et al; 2016).

Scope of activities and expected outputs: The activities and needs over the next six months to support EVD operational activities will focus on:

- Strengthening capacities for EVD confirmatory molecular testing using reverse transcription polymerase chain reaction (RT-PCR) through recruitment, retention, training and

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mentorship of personnel; and, provision of requisite commodities for testing, biosafety and biosecurity
- Conducting assessment of existing GeneXpert machines to rationalize their use for EVD testing especially in the 10 priority districts
- Conducting refresher training for personnel with IATA certification in packaging and shipping specimens from suspected cases within the country and across international borders
- Establishing a system for specimen collection, referral, testing and tracking using an electronic interoperable information management system
- Collaboration with IPC team to strengthen IPC and WASH measures in designated testing and/or specimen collection laboratories and sites
- Conducting refresher training for laboratory personnel in safety procedures and IPC for specimen collection, triple packaging, labelling, referral and shipment. Staff should be certified for the handling of infectious substances
- Equipping designated testing laboratories with requisite reagents, consumables and other essential laboratory supplies to enable safe and accurate conduct of EVD diagnostics. Priority commodities will include: GeneXpert Ebola cartridges, RT-PCR probes & primers, extraction kits, and, related consumables for EVD testing, as well as kits for VHF profile
- Establishing an efficient and robust stock management system to ensure real-time stock monitoring and demand-driven replenishment and supply, and minimize stock-out of essential commodities
- Collaborate with the case management pillar to establish efficient laboratory services for management of patients in Ebola Treatment units (ETUs), including biochemistry, haematology, blood gas analyses, CT value monitoring, at the point of care
- Coordinate with Logistics Pillar to ensure provision of fuel for laboratory backup generators to ensure continuous supply of electricity and allow for un-interrupted testing

Pillar 5: Case Management and IPC/ WASH, MHPSS and SDB

Background: In the context of patients with EVD, clinical care must be strengthened whilst minimizing the risk of onwards transmission to others, including health workers. Novel therapeutics exist for use on compassionate basis. It is important to ensure readiness for use of the supportive and novel therapeutics in the event of a confirmed case. Isolation is a key strategy in the management of Ebola patients to limit further spread to others in contact, and to prevent nosocomial transmission. It is critical that health workers improve their understanding of the disease and adhere to best practices of infection control (i.e. during and outside of outbreaks). Experts recommend a combination of measures to prevent transmission of EVD in hospitals including PPE. Sierra Leone has Infection Prevention and Control (IPC) governance structures at national, districts and at the health facilities level. The National Infection Prevention and Control Unit

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(NIPCU) of the MOHS coordinates all IPC activities in the country. All districts have health workers who have been trained on basic IPC. NIPCU have a pool of IPC supervisors and trainers that can be mobilized and deployed to any district. Isolation capacities, especially at districts level need to be ascertained. Assessment of IPC compliance and adherence in selected healthcare facilities in all district are conducted by NIPCU on a regular basis.

Scope of activities and expected outputs: The scope EVD readiness activities under this Pillar are organized under the following sub-pillars: 1. Case management and therapeutics; 2. IPC and WASH; 3. Mental Health and Psychosocial Support (MHPSS); 4. Safe and Dignified Burial (SDB); and 5. Ambulance services and referral systems. Activities for each of the sub-pillars are outlined below:

Sub-Pillar 1: Case management and therapeutics

- Establish and create roaster of teams in priority districts, train, orient and mentor various cadres of health workers in the priority districts on identification and supportive management of EVD patient management, including provision of WHO guidance on Optimized Supportive Care & IPC practices
- Identify and conduct rapid needs assessments in priority districts for capabilities and needs for case management enhancement of capacities, including exploring possibilities of using existing holding centres and COVID-19 treatment facilities
- Review, update, print and disseminate case management guidelines, SOPs, and forms for patient and dead body management, including for referrals
- Implement screening and triage system in in high risk district hospitals and health facilities
- Coordinate with National Emergency Medical Service (NEMS) to create and strengthen systems and procedures for safe and rapid transfer of confirmed EVD patients to ETUs, or designated treatment facilities
- Prepare for roll out of novel therapeutics, through designation of study team, identification of study co-sponsor, and obtain ethical and regulatory approval, and import permits for each drug/therapy-
- For clinical use, designate treatment delivery teams, comprising of clinician, pharmacist and nurse to trained in the end -to-end use of therapeutics, from storage (cold chain), preparation, delivery, monitoring and data collection. Training should be linked with optimized supportive care training of the entire team
- Coordinate and collaborate with Logistics pillar to:
    - Strategically establish/rehabilitate and equip EVD temporary holding/isolation centres in each priority district
    - Identify and map potential spaces for rapid conversion to ETCs

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- Rehabilitate and equip designated ETCs facilities with required materials.
- Establish/upgrade at least one Ebola treatment units (ETUs) strategically and make it functional
- prepare for the storage and use of the safe and effective EVD monoclonal antibody therapeutics
- identify, procure and make available the required medical supplies including contingency stocks, and materials, and preposition contingency supplies as per the national guidelines

Sub-Pillar 2: IPC and WASH

Effective infection prevention and control practices and VHF specific precautions is critical in preventing amplification of spread of EVD in health care setting through nosocomial transmission. Sierra Leone has established Infection Control Focal Points and IPC committees in district hospitals, and they will be targeted and used as resources to enhance IPC practices at district level. WASH infrastructure, facilities and resources are crucial to maintaining effective IPC practices. A WASH partners coordination platform has been established and integrated within the IPC Sub-Pillar for coordinated efforts. EVD IPC specific SOPs have been developed.

IPC and WASH activities in the priority districts for EVD operational readiness will target hospitals, PHUS, POEs and community level. WASH component of the Sub-Pillar will also engage with the SALWACO and Ministry of water resources to ensure the supply of water to all health facilities.

Scope of activities for IPC and WASH EVD operational readiness shall include:

- Update and disseminate standardized, evidence-based IPC guidance, SOPs and tools (inclusive of job aids, flowcharts) at national and district level, and ensure use by all IPC implementing partners
- Develop and disseminate IPC tools for assessments at health facilities and PoEs (e.g. the IPC assessment framework, IPC scorecard or WASH facility improvement tool for facility assessment) and support districts to conduct assessments and implement improvement plans
- Train and re-train all frontline health workers in priority district hospitals, PHUs, ETUs, POEs, and possibly community health workers in IPC precautions for EVD
- Establish a roaster of trained IPC surge workforce for deployment when needed
- Establish/strengthen screening and triage systems in priority health care facilities and ensure availability of capacities to immediately isolate EVD suspect cases, and for safe transfer of patients to designated ETU when required
- Coordinate with Logistics Pillar to ensure availability of sufficient high-quality PPE
- In collaboration with case management sub-pillar and Logistics pillar, establish /strengthen capacities for safe and efficient waste

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management procedures for all forms of waste
- Provide health facilities with capacities including running water and electricity for basic hygiene, sanitation, cleaning and disinfection, PPE, and safe waste management services. Priority should be given to hospitals and then health centres in priority districts.
- Develop and implement the 4W matrix for WASH partners and use it to track WASH activity improvements for EVD operational readiness in priority districts

Sub-Pillar 3: Mental Health and Psychosocial Support

An EVD outbreak may disrupt social cohesion and result in traumatization through fear of infection, isolation, fear of being a contact, separation of family members, death, non-participation in care of sick individuals and loved ones (WHO, 2016). EVD survivors, and frontline health workers may face stigma and discrimination. Health workers may also experience high levels of distress from fear of infection, exhaustion from heavy PPE use, high fatality of their patients, or fear from being contact themselves. It is therefore crucial to design and develop a MHPSS package and strategy catering for all target group.
Scope of activities for operational readiness will include:

- Integration of MHPSS component into case management Pillar, SOPs, and plans
- Train and mentor a group of HCWs to be ready to deliver MHPSS to various cadres of target populations (survivors, HCWs, affected individuals and families or close contacts, burial team members, etc.) during response operations and recovery phase
- Conduct training of trainers who can in turn be deployed to train community health workers (CHWs) and community leaders and representatives on basic psychosocial and psychological first aid once there is a confirmed outbreak
- Ensure integration of child protection activities in all guidance, strategies and related interventions

Sub-Pillar 4: Safe and Dignified Burial

- Revise/establish SOPs for safe and dignified funeral rites and disinfection based on best practice and global guidelines
- Train front-line workers such as decontamination and burial teams on key intervention strategies, key messaging to share with communities, and conflict management techniques.
- Establish at least one trained SDB team per district and ensure they are trained
- Designate functional transport means for safe transportation of dead bodies for SDB
- Work with RCCE pillar to educate communities about SDB and ensure community feedback about SDB practices and approaches is used to generate information to update approaches and strategies for SDB, and the related SOPs.

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Sub-Pillar 5: Ambulance services

A well-organized ambulance system with teams trained adequately on IPC measures is required for the transportation and referral of EVD cases to mitigate contamination and infection of the ambulance teams. The MOHS has an ambulance system for patient referral that could be repurposed and further capacitated for EVD patient movement and referral.
The following activities are crucial during preparedness operational readiness phase to ensure capacities for safe transportation of suspects or patients are in place prior to case confirmation:

- Identify and designate the right numbers and functional ambulances for referral and transportation of suspected/confirmed cases
- Train the designated ambulance team on IPC measures and their roles in the referral pathways to ensure their safety.

Pillar 6: Vaccination and Research

Background: Two strategies and approaches will be deployed for vaccination in the context of EVD operational readiness (Pandey et al., 2014; Walldorf et al.,2019). The first strategy aims to ensure the protection of health care and other frontline workers at risk of exposure and possible infection with EVD. This will be achieved through targeted vaccination of at-risk population in the 10 priority districts and in three regional referral hospitals serving the prioritized districts using the Johnson & Johnson EVD vaccine on compassionate basis. Health and frontlines workers in border facilities, hospitals and ETUs will be targeted for preventive vaccination. The second strategy is to ensure readiness for ring vaccination in the event of a confirmed EVD case.

Scope of activities and expected outputs

- Designate core vaccine teams based on protocols for respective vaccination protocols and SOPs for the J & J vaccine (Ad26.ZEBOV and MVA-BN®-Filo) and for the ring vaccination (rVSV ZEBOV-GP vaccination)
- Obtain ethical and regulatory clearances and approvals
- Establish and train vaccination teams for implementation of the protocol, including GCP training and SOP training at the national level
- Identify and map high risk health facilities in targeted priority districts.
- Conduct microplanning for the vaccination of the targeted health and front-line workers that have been prioritized
- Organize/procure logistics and ensure all vaccine supplies, cold chain capacity, vaccination kits and other essential items are available in line with respective vaccine requirements
- Mobilize operational logistics for vaccine deployment and vaccination exercise
- Develop and implement the RCCE activities targeted at EVD vaccination for acceptability and uptake
- Implement the vaccination activities in line with the protocol including the monitoring of adverse events following immunization (AEFI)
- To prepare for ring vaccination to be rapidly deployed in the event of

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confirmed EVD case, readiness activities will be limited to designation of the core teams, obtaining ethical and regulatory approvals, and training the implementing team as per protocol requirements.

Pillar 7: Essential Health Services

Background: Emergencies and emergency response operations have tendencies to negatively impact on the utilization of Essential Health Services (EHS) for a variety of reasons if not anticipated, monitored and corrective actions implemented (Brolin et al., 2016). Implementation and monitoring utilization of essential services during readiness activities will be implemented as part of the routine service delivery. However, tools and procedures to monitor the impact of an EVD outbreak on service utilization will need to be developed for use during emergency response operations.

Scope of activities and expected outputs

- Establish /adapt simplified mechanisms and protocols to guide delivery and continuity of essential health service delivery during EVD outbreaks and emergency response operations
- Develop/adapt tools and methodologies for assessing and monitoring of impact of emergency response operations on delivery and uptake of EHS
- Establish triggers/thresholds that activate a prioritization process and phased reallocation of comprehensive service capacity towards sustenance of EHS

Pillar 8: Operations and Logistics

Background: Logistics are critical for EVD operational readiness activities as well as for response. The aim of the operational Logistics Pillar is to ensure timely and continuous availability as well as proper management of the required logistics and supplies. The Logistics needs for EVD preparedness comprise of operational, medical, and non-medical logistics. Ideally, the Logistics Pillar with coordinate with respective Pillars to identify, map out and quantify the logistics needs for the duration of the planned EVD readiness activities.
For supplies, the required items will be mobilized using a three-pronged approach that includes donations, local and international procurements while ensuring established standards are met. The scope of activities for each the sub-pillars are summarized below.

Scope of activities and expected outputs

- Develop and adopt an operational support and logistics (OSL) plan with relevant partners and sectors, including mapping out the contributions of partners using the 3W (who does what where) for best use of available resources.
- Coordinate and collaborate with the pillars to create a forecast of needs and procurement list for EVD preparedness and preliminary response (PPEs, drugs, lab reagent, health care products, etc.)
- Consolidation supply-need forecasts and calibrate supply chain strategies taking into consideration the different needs for all pillars

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- Support medical facility mapping and evaluation.
- Evaluate and ensure storage capacities and stock management systems, identify stockpile needs across all components of the preparedness and implement an efficient stockpile-management system at national and district levels
- Assess the delivery capacities/times of identified suppliers, develop and implement pre-supply agreements
- Identify local suppliers for standard essential items for emergency response (e.g. WASH items, gum boots)
- Update and approve logistics SOPs covering supply, procurement, stockpile mobilization, sample transport, and communications needs related to EVD readiness activities including vaccinations
- Establish systems for stock management and for management of operational logistics

Contingency Plan for Immediate Response to a Confirmed EVD Case

Background: All plans for EVD preparedness and readiness should ideally include a contingency plan and budget. The plan details the preliminary response activities that should be implemented following confirmation of a case, and funds to facilitate preliminary response should be made available and accessible as a comprehensive response plan is developed and resources mobilized. Scope of activities that will need to be planned and budgeted for are outlined below.

Scope of activities and expected outputs

- Deployment of rapid response teams for detailed investigation of the outbreak, rapid risk assessment and preliminary response in the affected locality
- Activation of district and national level response coordination mechanisms
- Public communication including Press conferences, Risk communication and community engagement activities
- Implementation of EVD enhanced surveillance, contact tracing and POE screening in the outbreak affected areas and in surrounding communities
- Strengthening and implementing laboratory capabilities to support outbreak response needs
- Implementation of effective and comprehensive case management and IPC measures informed by a risk assessment
- Ensuring access to required supplies and logistics
- Implementation of ring vaccination and preventive vaccination campaigns that are guided by risk assessment
- Coordination of partners efforts to support response
- Development and implementation of a comprehensive response plan

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Monitoring and Evaluation

Monitoring and evaluation of plan implementation, including progress in the development of the EVD readiness capabilities at national and district levels will be achieved through multiple strategies that include review and discussions during the weekly EOC meetings, drills and simulation exercises, intra-action and after-action reviews, and tracking of progress in plan implementation using high level indicators.
The following indicators by pillars will be used to track progress in EVD operational readiness activities. Additional indicators may be collected as required.

Leadership and Coordination

1. Activation of multi-sectoral incident management system at national and at district level, with clear organograms
2. Established procedures and mechanisms for the Incident Management Systems for readiness and response coordination mechanisms
3. Established frameworks for partner engagement including pre-defined systems to facilitate international surge support
4. Updated list of 4W mapping for donors and partners is available
5. Approved National preparedness and contingency plan (NCP) for EVD
6. Established mechanisms and strategy for resource mobilization, utilization and financial reporting
7. Established mechanisms for communication, and clarity on communication lines
8. Trained multidisciplinary RRT established at the national and district level
9. Integration of PSEA desk into the Incident Management System at national and district levels
10. Simulation exercise and drills to assess readiness for response conducted covering all areas

Risk Communication and Community Engagement

1. Updated RCCE strategy with costed work plan and monitoring mechanism in place
2. Mapping of critical communication networks and key influencers at national and sub-national level conducted
3. Feedback mechanisms for capturing and analysing sources of community perspectives established

Epidemiological Surveillance, Contact Tracing and PoEs

1. Enhanced case detection through prompt investigation and verification of EVD related alerts conducted at facility and community levels
2. EVD mortality surveillance system established
3. Surveillance SOPs and guidelines updated
4. EVD data collection and management system established at all levels
5. Rapid Response Teams oriented on EVD

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6. SOPs and relevant tools on EVD disseminated to all Class A PoEs

Laboratory Diagnosis

1. Refresher training on Ebola molecular diagnostics conducted at national reference laboratories
2. EVD testing capacity assessment using GeneXpert conducted in priority districts
3. Refresher training of laboratory personnel on EVD specimen packaging and shipment
4. Procedures for specimen collection and transportation to laboratories for EVD testing established

Case Management/IPC

1. Clinical management teams in priority districts identified, trained and mentored using WHO guidance on optimised supportive care
2. One fully functional ETU upgraded with fully trained staff at national level and one priority district.
3. EVD holding and treatment centres identified and assessed in all priority districts
4. Potential ETC spaces for conversion identified and mapped in all priority districts
5. Availability of essential PPE and training on use is assessed in HF in all priority districts
6. SOPs for SDB updated, burial teams identified and trained
7. Designated burial grounds and Logistics for SDB identified

Vaccines

1. Focal point for vaccination protocols and SOPs for the J & J vaccine (Ad26.ZEBOV and MVA-BN®-Filo) designated
2. Protocol to national regulatory authorities and ethics review committee (and national research committee if needed) for approval, including securing importation license developed.
3. Assessment of logistics for vaccine supplies, cold chain capacity, and other essential items conducted
4. Vaccination teams established and trained on GCP and SOPs for implementation of the protocol
5. Implementation plan, vaccination sites, roles of partners, and timings of key activities identified.

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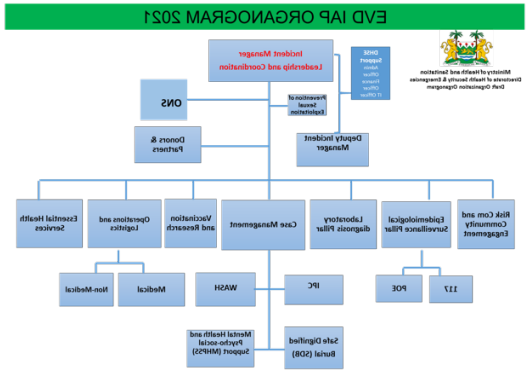
Annexes

Annex 1: Figure 2 – EVD Incident Management Structure for EVD Operational Readiness



Lessons Learned from EVD IAP Implementation and After-Action Review (AAR)

We conducted a workshop with relevant stakeholders for an after action review of ,m;lk

Pillar 1: Leadership and Coordination

Challenges

- Resource and support for coordination
- Strong logistics and planning personnel
- Resources, both human and material

Question

How do we analyse the lack of funding from donors?

Answer

- Shortage due to limited human and material resources to effectively go after partners.
- There was a need for a liaison person
- Partners are less likely to support preparedness rather than response
- There was more resource needed for mobilization

Recommendations

- There should be a very strong partner liaison and resource mobilization team.
- There should be an emergency fund available within the DHMT

Pillar 2: Risk Communication and Community Engagement

Challenges

- No timely response from other pillars
- Funding challenge leading to delay in information from some activities
- Gap in rumor monitoring and management
- Development of messages and materials to permit vaccines
- Challenges posed by social media with vaccination EVD, COVID-19, Polio, etc. resulting people locking when vaccination is ongoing.

Questions

Are there twitter handle, Facebook, official website and so on?

Answer

There are social media platforms available except Telegram. Also, there is a Google link provided for Q&A.

Recommendation

- Maintaining the momentum in getting people aware or being reminded of EVD especially among workers

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- To continue increasing the suspicion index on EVD among health workers.

Pillar 3: Epidemiological Surveillance, Contact tracing and POEs

Challenges

- Lack of dedicated standby staff for the incident management coordination for emergencies
- Lack of transparency from partners at district and national level

Question

Why is 117 not functioning for a very long time?

Answer

117 are functional all the time just that in Falaba and Karene district they are limited in functionality since they are new districts.

Recommendation

- Budget for public health emergency fund should be included in annual budget
- Improvement on surveillance and monitor index case
- Presence of 117 is needed in Falaba and Karene districts
- Isolation centers at prioritized Point B level is needed
- Resource Mobilization. Representation of the Ministry of Finance to participate in discussions relating to emergencies
- Technical input to IAP; Developing IAP within the shortest possible time.
- Service level arrangement signed by all parties. All parties should sign in consultation with DMOs, and they should know what partners are doing in their districts. Partner mapping at pillar level is also important for the coordination of the system
- Empower the Directorate of Primary Health Care to serve as intermediary between the district and the center.
- Budget on Simulation exercise based on existing SOSs
- Addressing the linkage between the laboratory and surveillance in relation to the release of result from the lab to surveillance to act and result disclosure to people that have been tested
- How to maintain high team surveillance and improve on surveillance not only to EVD

Pillar 4: Laboratory Diagnosis

Challenges

- Problems relating to transportation of samples.

Question

- Have transportation systems improved after previous meeting on similar issues?

Answer

Transportation of samples still poses a serious challenge. Rapid Test. Were you able to acquire some of the test in case they are wanted to be used.

Recommendation

- There is a need for infrastructure and logistics required for testing
- Digitalization of tested results. Support for software to be available in relation to result dissemination to

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all pertinent members after being tested.
- Idea of setting up a team consisting of surveillance, case management, risk communication, and lab to carry out functions relating to result disclosure.
- Budget for a standby generator
- Support at managerial level on laboratory logistics
- Improvement and dissemination of results

Irrespective of public health emergency, a robust health system is needed to respond adequately to public health emergencies

Pillar 5: Case Management and IPC/ WASH, MHPSS and SDB

Question

What is the reaction of people to go to the health facilities with fear of being quarantined or isolation from families?

Answer

Fear is always there. Treatment centers must be created within the Health Facilities to reduce isolation. Holding Centers are now to be used instead to isolation centers.

Recommendations

- Case management decentralization. There is a need for a skeletal structure that will respond immediately to outbreaks. Teamwork and coordination is needed through structure. Each district should have a rapid response team for decentralization.
- Continuation of simulation exercises and continuous training at national and district level
- Focus on essential services. Case management to monitor and manage case not related to EVD or Covid-19
- Case management relating to IPC to complete establishing the district case management that responds to outbreak.

Sub-Pillar 2: IPC and WASH

Question

- Is there an online teaching system for IPC which can be taken an online teaching?
- What do you like to see in strengthens Heath Care Facilities both at national and district level?

Answer

- There are online teaching system and short course, but the challenge is moving health workers for training at district level.
- Have what it takes to function, have the knowledge required, and monitoring.

Recommendation

Is there a way the Ministry can design any construction so that any health care facility that will be constructed should have to go through that plan and design.

Sub-Pillar 4: Safe and Dignified Burial

Question

Is there a communication or the need for medical store department?

Answer

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Yes, the only issue is that they cannot meet those needs.

Recommendation
Advocacy for more portals and cleaners

Pillar 6: Vaccination and Research

Challenges

- Social mobilization and community engagement
- Logistics was extremely crucial
- Both National and District team level were demotivated
- Communication

Lesson Learnt

- Clear Communication is crucial
- Cold chain is also crucial
- Deployment was crucial and through planning
- Aggressive timeline

Questions

- Are traditional healers funded to carry people for those vaccines?
- How long does the vaccination protection last?
- How evolve is the risk communication in the vaccine documentation?
- Why is the clinical trial trials not extend to all the districts?
- What are the major reasons for demotivation?
- What are the planning done at national level or DHMT regarding vaccination?
-

Answers

- Protection can last for up to 2 years. If the vaccine is stored at -80 degree Celsius, expiration date is up to 2 years. At lower temperature, expiration reduced. The non-use vaccine can stored at -20 degree Celsius and are supposed to last for 1 year. Health workers that are pregnant can take the vaccine because it is safe proven.
- Risk communication plays a vital role but since they were working with Partners, they were not given the free will to work to the fullest.
- The protocol stated on all the regional districts that form boundary. The protocol also indicated that in areas where there is active movements. In conclusion, selection of districts is not by default but by design.
- Logistics and funds come long after the time required.
- Planning and coordinating was done at the national level, but implementation was a challenge due to logistics challenges. Vaccines were already on the ground but the logistics were not available.

Recommendation
We must see how best we can harmonize government, WHO, and Partner in the deployment of vaccines.

Contingency plan for immediate response to a confirmed EVD case

Background: All plans for EVD preparedness and readiness should ideally include a contingency plan and budget. The plan details the preliminary response activities that should be

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Key Points of Discussion

- Building on the contingency plan
- Teams should look at what is already in existence and through sources that are available.
- Risk communication component can be copied and put into the contingency plan
- We should be able to make contingency plan in and at the border
- While making a contingency plan, there is a need to think about other viral hemorrhagic fevers while building a contingency plan
- There is a need to make a contingency plan that is generic and specific
- There is a need for a general response plan
- Activation of the EOC should be functional every time
- All prioritize hazards are supposed to have a contingency plan
- VHF for Ebola, we can develop our testing capacity

Challenge resolutions

- WHO agree to fund the activity at MOHS for a period of one month
- There is a need for the Ministry of Finance to send a representative to MOHS meetings so partners may take note they are present.
- Service Leave Agreement should be signed by all partners so the DMOs should be aware about what the partners are doing on their various districts.
- Partner mapping should also be done at the pillar level, and it should be done by the deployment of a partner lesion
- There is a need for a standby fund for the MOHS to respond to health emergencies.
- There is a need for partner mapping so as to ensure they operate in their respective areas
- There should be prioritize isolation/ holding centers for various point of entries
- There is a need for dedicated management standby staff for coordination. This can go with the inclusion of space for accommodate them.
- Manager should budget for simulation exercises.
- There should be direct link between surveillance and lab. Both should function not as a separate entity. This should be addressed by the EPRRG or a higher body.
- There should be the maintenance of laboratory
- WHO should see how best they can support in the lab areas as most of the needs are related to logistics
- Focus should be made on dissemination of results, from clinicians to lab and from lab to clinicians.
- There is a need to build a robust health system. Feedback should be given regularly from clinicians for public health emergencies.
- Software is needed to create and communicate testing result from lab. This is so as to create linkages between all the pillars
- There is no skeletal structure that should be given fragmentation for case management
- The element of RRT is not novel. There is a need for decentralize RRT in each district
- Simulation exercise should be done continually

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Overall Recommendations

- There should be inter pillar coordination and also overall strategy for different pillar
- There should be a detail incident action plan for surveillance so it can be used for future outbreak
- There is a need to get back to our institutional memory so as to build them up and not be working on them as a start.

References

1. WHO. (2016). Psychosocial effects of an Ebola outbreak at individual, community and international levels. Bulletin of the World Health Organization. https://www.who.int/bulletin/volumes/94/3/15-158543/en/
2. Alexander KA, Sanderson CE, Marathe M, Lewis BL, Rivers CM, Shaman J, et al. (2015) What Factors Might Have Led to the Emergence of Ebola in West Africa? PLoS Negl Trop Dis 9(6): e0003652. https://doi.org/10.1371/journal.pntd.0003652
3. Abhishek Pandey *et al.* Strategies for containing Ebola in West Africa.*Science***346**,991-995(2014).DOI:10.1126/science.12606
4. Dixon MG, Schafer IJ; Centers for Disease Control and Prevention (CDC). Ebola viral disease outbreak--West Africa, 2014. MMWR Morb Mortal Wkly Rep. 2014 Jun 27;63(25):548-51. PMID: 24964881; PMCID: PMC5779383.
5. Piot, Peter et al, 2014, Ebola in west Africa: from disease outbreak to humanitarian crisis, The Lancet Infectious Diseases, Volume 14, Issue 11, 1034 - 1035
6. Aaron G. Buseh, Patricia E. Stevens, Mel Bromberg, Sheryl T. Kelber, The Ebola epidemic in West Africa: Challenges, opportunities, and policy priority areas, Nursing Outlook, Volume 63, Issue 1, 2015, Pages 30-40, ISSN 0029-6554, https://doi.org/10.1016/j.outlook.2014.12.013.
7. Brolin Ribacke Kim J. , Saulnier Dell D. , Eriksson Anneli , von Schreeb Johan, Effects of the West Africa Ebola Virus Disease on Health-Care Utilization – A Systematic Review, 2016, Frontiers in Public Health, VOLUME 4, DOI=10.3389/fpubh.2016.00222, ISSN=2296-2565
8. Frieden TR, Damon IK. Ebola in West Africa--CDC's Role in Epidemic Detection, Control, and Prevention. Emerg Infect Dis. 2015 Nov;21(11):1897-905. doi: 10.3201/eid2111.150949. PMID: 26484940; PMCID: PMC4622264.
9. Kramer Andrew M., Pulliam J. Tomlin, Alexander Laura W., Park Andrew W., Rohani Pejman and Drake John M. 2016, Spatial spread of the West Africa Ebola epidemicR. Soc. Open Sci.3160294http://doi.org/10.1098/rsos.160294
10. Orlando Cenciarelli, Stefano Pietropaoli, Andrea Malizia, Mariachiara Carestia, Fabrizio D'Amico, Alessandro Sassolini,

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Daniele Di Giovanni, Silvia Rea, Valentina Gabbarini, Annalaura Tamburrini, Leonardo Palombi, Carlo Bellecci, Pasquale Gaudio, F2015, Ebola Virus Disease 2013-2014 Outbreak in West Africa: An Analysis of the Epidemic Spread and Response, International Journal of MicrobiologyVolume 2015, Issue 1 769121 https://doi.org/10.1155/2015/769121

11. Obinna O Oleribe, Babatunde L Salako, M Mourtalla Ka, Albert Akpalu, Mairi McConnochie, Matthew Foster, Simon D Taylor-Robinson, Ebola virus disease epidemic in West Africa: lessons learned and issues arising from West African countries, Clinical Medicine,Volume 15, Issue 1, 2015, Pages 54-57, ISSN 1470-2118, https://doi.org/10.7861/clinmedicine.15-1-54.
12. Omoleke SA, Mohammed I, Saidu Y. Ebola Viral Disease in West Africa: A Threat to Global Health, Economy and Political Stability. J Public Health Afr. 2016 Aug 17;7(1):534. doi: 10.4081/jphia.2016.534. PMID: 28299152; PMCID: PMC5349256.
13. Heymann, David L et al. 2015, Global health security: the wider lessons from the west African Ebola virus disease epidemic, The Lancet, Volume 385, Issue 9980, 1884 - 1901
14. Wilkinson A., Parker M., Martineau F. and Leach M. 2017, Engaging 'communities': anthropological insights from the West African Ebola epidemicPhil. Trans. R. Soc. B37220160305, http://doi.org/10.1098/rstb.2016.0305
15. Caroline Huber, Lyn Finelli, Warren Stevens, The Economic and Social Burden of the 2014 Ebola Outbreak in West Africa, *The Journal of Infectious Diseases*, Volume 218, Issue Supplement_5, 15 December 2018, Pages S698–S704, https://doi.org/10.1093/infdis/jiy213
16. Abayomi, A., Balogun, M.R., Bankole, M. *et al.* From Ebola to COVID-19: emergency preparedness and response plans and actions in Lagos, Nigeria. *Global Health* **17**, 79 (2021). https://doi.org/10.1186/s12992-021-00728-x
17. Lal A, Ashworth HC, Dada S, Hoemeke L, Tambo E. Optimizing Pandemic Preparedness and Response Through Health Information Systems: Lessons Learned From Ebola to COVID-19. *Disaster Medicine and Public Health Preparedness*. 2022;16(1):333-340. doi:10.1017/dmp.2020.361
18. Jenny A. Walldorf, Emily A. Cloessner, Terri B. Hyde, Adam MacNeil, Sarah D. Bennett, Rosalind J. Carter, John T. Redd, Barbara J. Marston, Considerations for use of Ebola vaccine during an emergency response, Vaccine, Volume 37, Issue 48, 2019, Pages 7190-7200, SSN 0264-410X, https://doi.org/10.1016/j.vaccine.2017.08.058.
19. Jacobsen, K.H., Aguirre, A.A., Bailey, C.L. *et al.* Lessons from the

©SLJBR Vol.15(1), December Edition, 2024 ISSN (Print), ISSN (Online First)

Ebola Outbreak: Action Items for Emerging Infectious Disease Preparedness and Response. *EcoHealth* **13**, 200–212 (2016). https://doi.org/10.1007/s10393-016-1100-5

20. Swati Gupta, Nivedita Gupta, Pragya Yadav, Deepak Patil, Ebola virus outbreak preparedness plan for developing Nations: Lessons learnt from affected countries, Journal of Infection and Public Health, Volume 14, Issue 3, 2021, Pages 293-305, ISSN 1876-0341, https://doi.org/10.1016/j.jiph.2020.12.030.
21. O'Keeffe DA, Bradley D, Evans L, Bustamante N, Timmel M, Akkineni R, Mulloy D, Goralnick E, Pozner C. Ebola Emergency Preparedness: Simulation Training for Frontline Health Care Professionals. *MedEdPORTAL*. 2016;12:10433. https://doi.org/10.15766/mep_2374-8265.10433
22. Dhama K, Malik YS, Malik SVS, Singh RK (2015) Ebola from emergence to epidemic: the virus and the disease, global preparedness and perspectives. J Infect Dev Ctries 9:441–455. doi: 10.3855/jidc.6197
23. Welby-Everard P, Quantick O, Green A, Emergency preparedness, resilience and response to a biological outbreak, *BMJ Mil Health* 2020;**166:**37-41.
24. Gostin LO, Lucey D, Phelan A. The Ebola Epidemic: A Global Health Emergency. *JAMA.* 2014;312(11):1095–1096. doi:10.1001/jama.2014.11176
25. Sealy TK, Erickson BR, Taboy CH, et al. Laboratory Response to Ebola — West Africa and United States. MMWR Suppl 2016;65(Suppl-3):44–49. DOI: http://dx.doi.org/10.15585/mmwr.su6503a7
26. Marston BJ, Dokubo EK, van Steelandt A, Martel L, Williams D, Hersey S, Jambai A, Keita S, Nyenswah TG, Redd JT. Ebola Response Impact on Public Health Programs, West Africa, 2014-2017. Emerg Infect Dis. 2017 Dec;23(13):S25–32. doi: 10.3201/eid2313.170727. PMID: 29155674; PMCID: PMC5711323.
27. WHO. (2021). Ebola Outbreak in Guinea. https://www.who.int/emergencies/situations/ebola-2021-nzerekore-guinea#:~:text=The%20Ministry%20of%20Health%20of,previous%20outbreak%20ended%20in%202016.
28. Keita, A.K., Koundouno, F.R., Faye, M. *et al.* Resurgence of Ebola virus in 2021 in Guinea suggests a new paradigm for outbreaks. *Nature* **597**, 539–543 (2021). https://doi.org/10.1038/s41586-021-03901-9
29. Richards P, Mokuwa E, Welmers P, Maat H, Beisel U (2019) Trust, and distrust, of Ebola Treatment Centers: A case-study from Sierra Leone. PLoS ONE 14(12): e0224511. https://doi.org/10.1371/journal.pone.0224511

©SLJBR Vol.15(1), December Edition, 2024 ISSN (Print), ISSN (Online First)