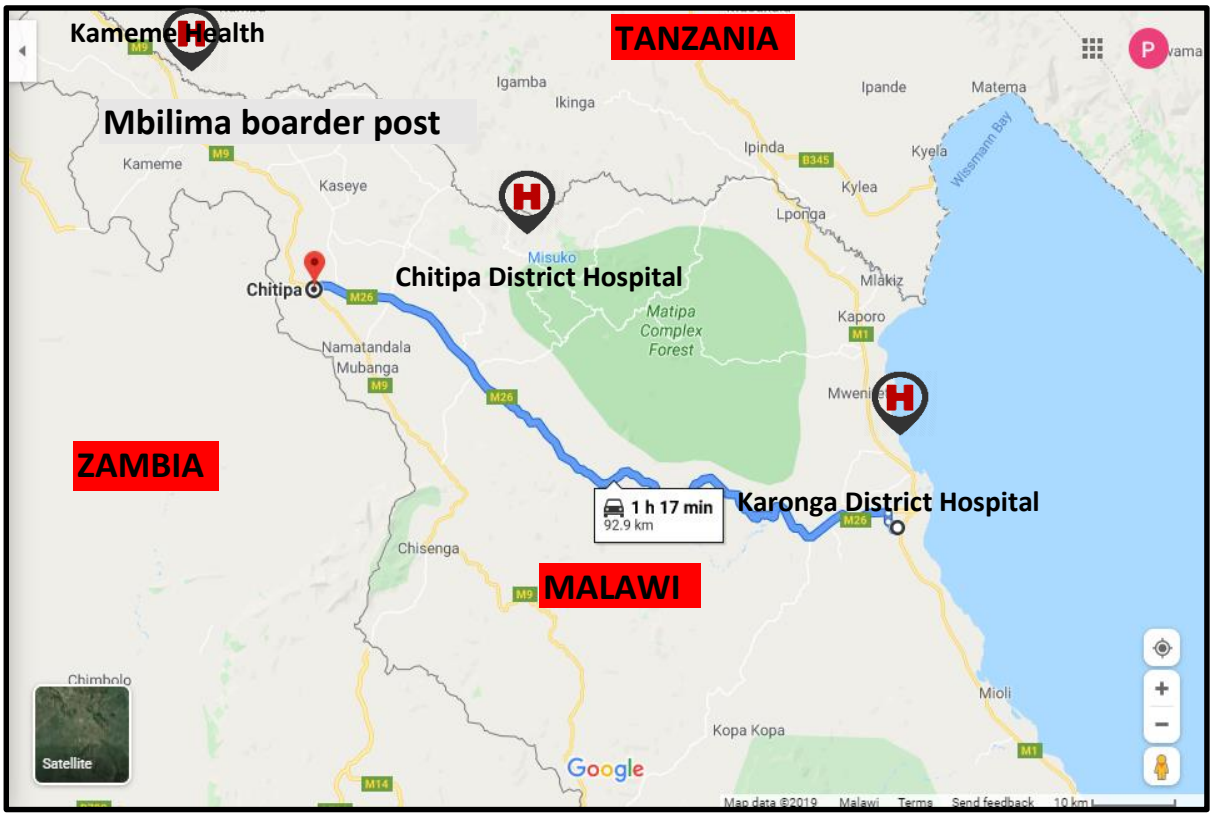
PHIM | PUBLIC HEALTH INSTITUTE of MALAWI

MALAWI SMALL SCALE FIELD EXECISE

MBILIMA BORDER POST CHITIPA

4TH TO 7TH NOVEMBER 2019



Acknowledgements

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Dr Mizeck Matthew Kagoli

TEAM LEADER, PUBLIC HEALTH INSTITUTE OF MALAWI

NOVEMBER 2019

List of Acronyms

AAR	After Action Review
CDC	Centers for Disease Control and Prevention
DC	District Commissioner
DEHO	District Environment Health Officer
DMO	District Medical Officer
DRC	Democratic Republic of Congo
DSA	Daily Subsistence Allowance
ECSA-HC	East Central and Southern Africa Health Community
EOC	Emergency Operation Centre
ETU	Ebola Treatment Unit
EVD	Ebola Viral Disease
IHR	International Health Regulations
IPC	Infection Prevention and Control
JEE	Joint External Evaluation
MoHPS	Ministry of Health and Population Services, Malawi
NICD	National Institute of Communicable Diseases
NRL	National Reference Laboratory
PHEMC	Public Health Emergency Management Committee
PHIM	Public Health Institute of Malawi
WHO	World Health Organization
PoE	Port of Entry
SimEx	Simulation Exercise
UNICEF	United Nations Children Fund

1.0 Executive Summary

The Public Health Institute of Malawi whose responsibility is to implement the World Health Organization's (WHO) International Health Regulations (IHR 2005), in collaboration with WHO, Norwegian Institute of Public Health, Centres for Disease Control and Prevention and East Central and Southern Africa Health Community organized and implemented a Field Simulation Exercise for Ebola preparedness at Mbilima Border Post which covered the districts of Chitipa and Karonga. Even though Malawi has not reported any cases of Ebola, the simulation exercise is part of the Government's continued preparedness efforts following the WHO declaration of DRC Ebola as a public health emergency of international in July 2019.

The Field Simulation Exercise tested six areas of Ebola preparedness and response that included (i) Ebola alert management system at Points of Entry (PoE) (ii) Ebola suspect case management at the Isolation Centre (iii) Ebola suspect case management at the Ebola Treatment Unit (iv) Coordination and information flow of Ebola Virus Disease (EVD) positive results from the Laboratory to district and national level (v) management of a confirmed case of EVD at the Ebola Treatment Unit and (vi) Coordination structures and functions between the District and National Level.

The two-day simulation exercise was coordinated by a Simulation Exercise Management team comprising; Exercise Director, Exercise Controller and Exercise Evaluators. Professional actors were hired to simulate the Ebola suspect, his business partner and his relatives. All participants in the exercise, with exception of Exercise Management Team, the District Commissioners and the In-Charge of Police from the two districts were blinded. Observations from the simulation exercise were discussed by the team during a "hot wash" and with all participants and stakeholders during a de-brief session chaired by the two District Commissioners from Chitipa and Karonga.

The systems demonstrated strengths in preparedness and response in a number of areas that included screening and isolation services at port of entry, coordination of different agencies at the port of entry, quick response by the District Rapid Response Team, infection control practices, availability of ETU in Karonga and case management team with needed supplies to manage symptoms, capacity to collect and transport samples,

risk communication measures and coordination between port of entry, district and national teams in response to the emergency. However, there were noted areas for improvement including increasing human resource capacity at port of entry, practice and enforcement of infection control measures, need for alternative means for communication to alleviate network challenges, dissemination of Standard Operating Procedures, inclusion of standby response team willing to manage Ebola suspects, inclusion of psychosocial support experts in the case management team and specimen chain of custody

An action plan was developed following the recommendations and will be managed by the PHIM and reported to the Ministry of Health and Population Services and partners for progress.

2.0 Introduction

2.1 Background

The Ministry of Health and Population Services (MoHPS) Malawi has established the Public Health Institute of Malawi (PHIM) in response to the global call on ONE-HEALTH approach in the implementation of the World Health Organization's (WHO) International Health Regulations (IHR 2005). Its mission is to provide national leadership and coordination in multidisciplinary and multi-sectoral surveillance, prevention and control of diseases, health conditions and threats as well as to generate information that informs policy and practice in public health. PHIM is mandated to implement the WHO, IHR 2005 regulations which is calling for One Health in combating public health diseases and conditions of both national and international concern. This is in harmony with what the heads of state at the African Union envisioned by establishing the Africa Centers for Disease Control and Prevention (Africa CDC) in 2017 which is responsible for assisting member states to establish or strengthen their public health institutes with the role of preventing, detecting and responding to public health emergencies of both national and international concern in a multi-disciplinary and multi-sectoral manner.

2.2 The Ebola Outbreak Situation in Malawi

The Ebola outbreak in Democratic Republic of Congo (DRC) was declared by World Health Organization (WHO) as a public health emergency of international concern on 17th July 2019[1]. As of 10th November 2019, DRC had registered 3287 cases with 3169 and 118 as confirmed and probable cases respectively. Of these cases, 2193 dies (case fatality rate 67%) and 163 (5%) of them were health workers (163).

On 13th of November 2019, Karonga district reported a suspected case of Ebola. The case presented at Kaporo Health Centre with fever and bleeding of the nose, mouth, eyes with no travel history to any Ebola affected area or any reported contact with a probable

[1] https://www.who.int/news-room/detail/17-07-2019-ebola-outbreak-in-the-democratic-republic-of-the-congo-declared-a-public-health-emergency-of-international-concern

or confirmed Ebola case. As per case definition, the case management team in Karonga concluded that it did not fit into the case definition of Ebola. However, a sample was taken which tested negative for Ebola virus at the South African National Institute for Communicable Diseases (NICD). Since then Malawi has not reported any case of suspected Ebola Virus Disease.

Despite not reporting any confirmed cases of Ebola to date, Malawi has continued to intensify its preparedness for Ebola. The following have been put in place

- Enhanced surveillance in all ports of entry (ground, air and water)
- Training and capacity building for health and non-health workers in army barracks (190) and 715 health workers from the Districts of Chitipa, Karonga, Mzuzu, Nkhatabay, Lilongwe, Mchinji, Dedza and Blantyre.
- Established standard Six Ebola Treatment Units in Karonga, Mzuzu Central hospital, Mchinji, Dedza, Blantyre and Mwanza
- Procured and pre-positioned Ebola supplies to the Nine Districts of Chitipa, Karonga, Mzuzu, Nkhatabay, Lilongwe, Mchinji, Dedza, Blantyre and Mwanza
- Oriented 120 officers from Immigration, Malawi Revenue Authority, Veterinary and Police stationed at and around border areas of Chitipa and Karonga
- Developed a risk and crisis communication plan on Ebola
- Reviewed and printed 2000 EVD Communication leaflets and 7000 posters and distributed to the 9 priority districts of Chitipa, Karonga, Mzuzu, Nkhatabay, Lilongwe, Mchinji, Dedza, Blantyre and Mwanza
- Conducted an EVD orientation workshop targeting the District Health Promotion Officers and community radio producers from the 9 priority districts.
- Airing of radio programs on EVD through community radio stations of Nthalire in Chitipa, Mudziwathu in Mchinji, Tuntufye in Karonga, Bembeke in Dedza and Ndirande in Blantyre and National broadcasters Malawi Broadcasting Corporation, Zodiak and MIJ
- Conducted interactive theatre performances targeting communities in the 9 priority districts.

With all these preparedness measures in place, there was express need for the Government of Malawi to test their level of preparedness and determine effectiveness of the measures that had been put in place.

2.3 Rational for conducting field simulation exercise

WHO require that member states implement the “Five mandatory functions” as part of the monitoring framework for the implementation of IHR guidelines in which member countries are expected to improve their capacities in surveillance, prevention and response. These functions, among others, include conducting (i) the Joint External Evaluation (JEE), (ii) simulation exercises annually, (iii) After Action Review (AAR) after every declared outbreak and (iv) producing a State Party Annual Report.

Malawi, through PHIM conducted its first ever JEE in February 2019 in which the IHR core capacities were assessed to determine the level of implementation. This was done voluntarily where Malawi’s preparedness and response capacities were ascertained. Of note was the fact that Malawi had not registered having conducted a complex simulation exercise other than the classroom table top simulation exercises. Hence the gaps identified by JEE were (i) not conducting simulation exercises (ii) no AAR at the end of a declared outbreak (Malawi has had cholera outbreaks and an anthrax outbreak among others) and (iv) need to develop a National Action Plan for Health Security after JEE.

After the WHO’s declaration of the DR Congo Ebola outbreak as a public health emergency of international concern, member states were called to heighten and harness their preparedness capacities. In response, the Government of Malawi has conducted several preparedness activities including training of health care workers in Ebola surveillance and case management and stock piling and pre-positioning of Ebola supplies in the targeted districts and establishment of ETU in high priority districts including Karonga.

To measure its preparedness, Malawi had been conducting ongoing activities which include inspections of port health, support and monitoring visits to districts, establishing cross-border committees and conducting table top simulations during cross-border meetings. Although these initiatives provided the Government with information on status

of preparedness plans, it did not provide a good test for preparedness, if a real Ebola case was experienced.

As per WHO guidance, a simulation exercise is a quality assurance tool used to provide an evidence-based assessment for testing and strengthening of functional capacities to respond to outbreaks and public health emergencies. By creating close to real life scenario, a field simulation exercise helps to test the system response if a real case was to be experienced. Since most of the participants will be masked, it allows for them to respond in a way they would respond in the event of an actual case. The blinding allows for testing the system in its natural state.

Between the 4th – 7th of November 2019, PHIM conducted a field simulation exercise on Ebola in Chitipa and Karonga, the two districts at more risk given the travellers from as far as DRC enter Malawi through them. The Simulation Exercise (SimEx) was supported financially by the Norwegian Institute of Public Health, World Health Organization and Centres for Disease Control and Prevention (CDC) Atlanta through its in-country implementing partner I-Tech. In addition, PHIM obtained technical support from East Central and Southern Africa –Health Community (ECSA-HC) who availed their two officers to coordinate the planning and execution of the exercise.

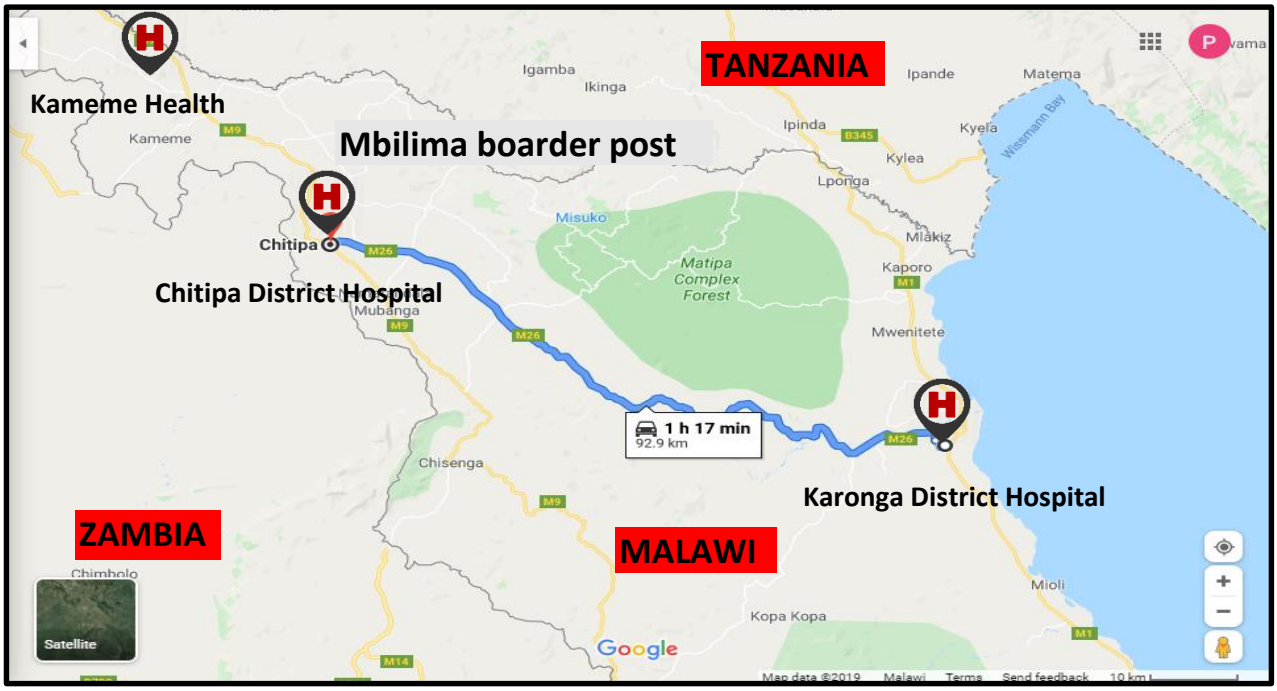

Figure 1: Map showing the route the suspected Ebola Patient travelled from Mbilima Boarder post to Karonga Treatment Unit.

3.0 The Simulation Exercise

3.1 Objectives of the Simulation Exercise

The SimEx was organized to test six broad objectives. The scenario was developed in a manner that will allow testing of these objectives. These were

3.1.1 To test an Ebola alert management system at Points of Entry (PoE). The following were tested

a. Primary screening of travelers
b. Infection prevention and control (IPC) practices by Port Health staff and travelers including, hand hygiene practices, process of identification and isolation of suspect travelers and the isolation facilities.
c. Information to sick travelers and contacts with respect to Ebola signs and symptoms and information on what procedures will be followed following identification as a suspect and contacts
d. Interactions of different agencies at the PoE throughout the process of being an Ebola alert to being a suspect. These agencies include Port Health officers, Immigration, security, animal health and Malawi Regulatory Authority (MRA)

3.1.2 To test an Ebola suspect case management at the Isolation Centre

a. Secondary screening after the alert including history taking
b. Adequacy and appropriateness of infrastructure, equipment and materials in the isolation unit
c. IPC practices and measures at the isolation unit
d. Information to sick patient and other travelers (contacts) more specifically on the steps that will be taken for their management following isolation
e. Communications with District (DMO, DEHO), EOC, Laboratory

3.1.3 To test Ebola suspect case management at the ETU

a. Sample management by the laboratory from collection, packaging and transportation to National Reference Laboratory

b. Documentation for sample management and tracking including case investigation forms, chain of custody forms
c. IPC measures during sample collection and packaging, including triple packaging
d. Communications with District, EOC, Laboratory on sample management

3.1.4 To assess coordination and information flow of Ebola Virus Disease (EVD) positive results from the Laboratory to district and national level

3.1.5 To assess how a positive EVD case is managed at the Ebola Treatment Unit

3.1.6 To assess the coordination structures and functions between the District and National Level

Specific outcomes for each objective were identified, listed and evaluated using a standard checklist during the exercise by SimEx Evaluators

3.2 Planning process and partners involved

The planning of the SimEx was led by the Public Health Institute of Malawi (PHIM) guided by their 2019 operational plan. It took over 4 months to plan and execute the exercise. An Exercise planning team was constituted comprising of PHIM, Ministry of Health partners that included Norwegian Public Health Institute, World Health Organization, UNICEF, CDC, I-Tech and others. The Norwegian Institute of Public Health and WHO provided financial support and participated in the exercise. ECSA-HC provided technical support and coordinated the development of the SimEx Scenarios, planning and execution of the simulation.

Several planning meetings were held during the period preceding the simulation in Lilongwe, including video conferencing and face to face meetings. ***See Annex 1:*** SimEx ***Planning Schedule.*** Led by the PHIM, the Preventive Director, Chief of Health Services and Secretary for Health were briefed of the SimEx for on-ward updating of the Minister of Health. The PHIM team leader played a part in the exercise (calling of positive results to the District) and was therefore not masked.

The PHIM developed a budget based on the scenario, pre and post exercise meetings and the associated logistics of transport and engagement of actors and professional photographers.

Two weeks before the simulation, the PHIM conducted a scoping visit to Mbilima, Chitipa and Karonga to familiarize themselves with the scenario setting. The scoping visit helped to map how the scenario will unfold and what sort of logistics will be required for each scenario stage i.e. getting to the Mbilima border by the suspect patient and his relatives and other travellers and moving to Chitipa and Karonga for admission into the ETU.

The SimEx roles and responsibilities were assigned for the planning and implementation of the SimEx These roles included the (i) Exercise Director (ii) Lead Exercise Controller (iii) Exercise Controllers (iv) Exercise Evaluators and (v) Actors. The specific roles and responsibilities for each are described in ***Annex 2:*** SimEx ***roles and responsibilities***

3.3 Informed consent and actors' safety

All actors were given a participant information sheet detailing their role and expectations of the role they were going to play. After accepting to participate each participant was given a consent form to sign to show that they were willing to participate in the exercise. Participants were further informed that the pictures and videos could be used during lectures, report and Education, Information and Communication (IEC) on Ebola virus.

To ensure safety of the Ebola suspect and all other role players and minimize potential harm to participants and the community, the following was put in place

- The Ebola Clinician Specialist from Mzuzu Central Hospital was planted in the case management team at Karonga. His role was to play along but ensure that the Ebola suspect was not given unnecessary treatment. Consequently, the Ebola suspect only received magnesium and normal saline (IV fluid). He also ensured that the suspect, his wife and relatives were provided for food and other necessities.
- The Police Officer In-charge from both participating districts were informed on the morning of the simulation exercise in case a security issue arises. This was done during a briefing of the District Commissioners of Chitipa and Karonga which took place simultaneously in the 2 districts
- Editors of the main newspapers were informed about the exercise. Their role was to ensure nothing is published through their newspapers by withholding anything that their journalists may pick.

- The District Commissioners from both districts as the chair of the PHEMC were informed on the day of the simulation. They were requested to play along once contacted especially when convening the PHEMC meeting.

3.3 Summary of the simulation scenario

A narrative of the simulation exercise was developed by the facilitators and reviewed continuously during a series of meetings until it matched the objectives to be tested and outcomes of the exercise. In summary, the scenario started at Mbilima where a business man who frequently travels to DRC, Tanzania, Zambia and Zimbabwe to trade starts to vomit blood while being served by an Immigration Officer. He arrives at the border post with four other passengers using public transport. He is accompanied by his business partner who immediately calls the wife. The wife who is accompanied by his brother provides additional information during history taking and this included the burial in DRC of a friend that her husband participated in. The friend had shown similar signs and symptoms. He had crossed into Malawi via the unofficial monkey bridges a week before and had been treated at one of the local health centers for headache and general weakness and was taking paracetamol. His Malaria rapid test had been negative as was documented in the health book that the wife showed the Port Health Officer. While placed in isolation unit at Mbilima, the suspect patient vomited once and frequently asks to go to the toilet to pass out diarrhea. The wife continuously insisted to be with the husband, including accompanying him in the ambulance to the referred facility

Figure 2: (a) Suspect Ebola Patient (b) Wife of suspect in the Isolation Unit at Mbilima Border post

The other passengers disappeared from the border unnoticed in anticipation of being detained as contacts. The suspect vomited while in transit to and on arrival at the ETU in Karonga.

Figure 3: (a) Other passengers in the vehicle held for observation (on benches) (b) Rapid Response Team ready to enter isolation unit

To minimize enhanced treatment, the suspect stabilized once admitted at the ETU in Karonga and the planted Clinician was available to be incorporated into the case management team. He had called the DHO about his availability in the district a few days before.

Figure 4: (a) Suspect leaving Mbilima Border Post isolation unit (b) Suspect arrival at Karonga ETU awaiting admission

Once the National Reference Laboratory was called to anticipate an urgent Ebola suspect sample, they informed the Karonga Laboratory that one of their staff who was on a mission in the district would pick the sample immediately for transfer to Lilongwe. The NRL staff, who was one of the SimEx controllers, intercepted the sample. An allowance of 8-10 hours was given (driving to Lilongwe and conducting of a Rapid Ebola Test) with GeneXpert) before the PHIM Team Leader called the DHO with a positive rapid test pending confirmation with South Africa National Institute for Communicable Diseases (NICD). Two other officers from the national office were planted into the PHEMC meeting convened by the DC in Chitipa. The SimEx was called off during the PHEMC meeting in Chitipa. At the same time, preparations to have the PHEMC meeting in Karonga were underway and was planned for 10 am on 7th November 2019. ***See Annex 3:*** SimEx ***Scenario***

On the day of the SimEx, all activities were managed from the Control Room under the leadership of the Exercise Controller, Mr Atek Kagirita from ECSA.

Figure 5: Control rooms in (a) Chitipa (b) Karonga

On day 1, while the suspect was still at Mbilima, the control room was located in Chitipa and it closed once the suspect was transferred to Karonga in the night. The control room in Karonga was closed after the hot-wash. A WhatsApp group was formed comprising of SimEx participants (actors, field controllers, field evaluators and field observers) where events were streamed live as they happened in the field. Each event was captured with respect to what has happened, by whom and at what time. ***See Annex 4:*** SimEx ***Activity Log***

3.2 SimEx **Evaluation**

A standard evaluation checklist was developed based on the WHO SimEx Evaluation form. See ***Annex 5:*** SimEx ***Evaluation Checklist***. The following additions were made to the WHO Evaluation form

- Section A: Outcomes as stated on the SimEx Scenario were used to develop evaluation questions E.g. Under surveillance, outcome of "screening of all travelers", an evaluation question "Were all travelers screened for Temperature" was included in the checklist
- Section B: All the questions from the WHO SimEx Evaluation Form were included
- Scoring: Each of the outcomes (Section A) and general questions (Section B) were scored to quantitatively measure the level of preparedness.

All evaluators were oriented on the checklist and assigned specific areas of the simulation to evaluate.

3.3 Hot Wash

Immediately after closure of the SimEx by the Lead Controller, all participants were recalled to the control room for a "Hot Wash". A hot wash is the immediate debriefing that gives participants an opportunity to feed back their immediate feelings about the exercise. The Lead controller gets feedback on the following (i) what went well during this exercise? (ii) what were the key strengths you observed? (iii) what could have worked better or what were the areas that could be improved? (iv) what can we do to ensure it goes better next time? The discussions during the hot wash informs the de-brief meeting.

3.4 Debrief Meeting

The Exercise De-brief meeting was attended by SimEx participants and everyone else who got involved i.e. Mbilima port of entry officers including the Port Health Officer, Chitipa Rapid Response Team, Karonga Case management team, Chitipa and Karonga DHO & DEHO, laboratory, ambulance driver, both District Commissioners and all other stakeholders. ***See Annex 4:*** SimEx ***De-Brief meeting attendance list.***

Figure 6: SimEx De-brief at Mikoma Lodge, Karonga

In the de-brief SimEx actors (suspect, wife, brother and business partner), Port Health Officer, both DHOs, both DEHOs, ambulance driver gave an account of their experience with the SimEx. They all expressed how real the simulation was such that it created immense pressure on them. “I was both angry and happy that it was just a simulation exercise” a participant recalled during the debriefing. Finally, the actors were de-roled of their acting roles and their acting names were taken off from them by the Exercise Director. The SimEx observations (strengths, weaknesses) and recommendations were presented and discussed. ***See Annex 5:*** SimEx ***De-Brief Agenda.***

Over 150 people participated in the SimEx. ***See Annex 6:*** SimEx ***Participant List***

4.0 Observations and Recommendations

Evaluators were given responsibility to capture observations in the field during the simulation. In some instances, the actors (suspect, wife, brother, planted clinician) acted as evaluators as well in cases where no one else had access to what was taking place. The evaluators observations and the discussion during hot-wash and de-brief informed the final observations and recommendations as summarized below

Table 1: Summary of observations and recommendations

OBSERVATION	RECOMMENDATIONS
Surveillance - (Port Health, District)	
Strengths	
1. There is Port Health Services manned by a Port Health Officer (AEHO) who is on rotation with three other HSAs. 2. There are screening services (thermos scanner) offered to travelers (in cars). However, most travelers on foot and motorbikes are not screened 3. Immigration Officer (first to be in contact with suspect) and Port Health Officer were able to pick the case as an alert and immediately isolated him while conducting further investigations 4. There was activation of community based surveillance with alerts send to nearby facilities of the suspect case as well as activating the surrounding health facilities and the other side of the border	
Weaknesses	
1. There was only 1 Assistant Environmental Health Officer (AEHO) at the time of the incident and was not able to cope with the situation of attending to sick traveler while continuing with screening of other travelers. As a result those who travelled with the suspect (therefore considered as contacts of the suspect were able to vanish from the scenery unnoticed	• Increase the number of officers on duty or available for emergency situations • Strengthen border control and screen every traveler
Infection Prevention and Control Surveillance	
Strengths	
1. There was an isolation unit (tent) at the border post to isolate the suspect 2. PPEs at the border post (gloves, googles, apron) were available and additional PPE was brought from Chitipa for full donning and doffing 3. There was decontamination of areas the suspect had been to (toilet, isolation unit, vomit)	
Weaknesses	

1. Infection, Prevention and Control Practices not observed as the suspect was initially allowed to move around and was vomiting on the ground. a. Sample transported together (at back of ambulance) with suspect, wife, brother in-law and business partner) 2. Initially suspect was allowed to move in and out of isolation unit (for food, toilet) until DRRT arrived. 3. The suspect wife, brother, and business partner were all allowed to be with the suspect, in the same place, including travelling in the same ambulance 4. There were no Standard Operating Procedures at the border for health and border workers to refer to (case definition, decontamination, sample collection, communication)	• Enforce IPC measures when managing suspect cases of highly infectious diseases by ○ Re-training and capacity building of all persons who maybe in contact with suspect cases (immigration, port health, health staff, security MRA) ○ Conduct regular inspections for availability, use and IPC practices ○ Review and provide SOPs which should include standards on sample and patient transportation, suspect movements and isolation to the PoE
Case Management	
Strengths	
1. A team was mobilized to travel with suspect to Karonga and a case management team was available in Karonga to manage the suspect overnight	
Weaknesses	
2. Although a case management team was mobilized in Karonga and managed the suspect overnight, a team from Chitipa was expected to join their colleagues in Karonga but a number of staff requested were not willing to join the case management team. This delayed the relief of night duty case management team 3. Among the case management team there was no psychosocial support expert. The suspect, wife, brother in-law and business partner were not offered support, including food and shelter.	• Identify and train a dedicated national team that include psychosocial expert to respond to highly infectious diseases which can be quickly mobilized when needed. There should be strict screening of potential team members based on their availability and commitment to respond when needed. • Provide incentives to the core team during an outbreak • Orient all other districts staff on IPC, psychosocial support and other related issues to support the core national team to manage highly infectious diseases •
Sample Collection and Transportation	
Strengths	
1. Chitipa District had capacity to collect sample for Ebola testing	

2. Materials of sample collection and packaging (Triple packaging) was available and used 3. There was communication and coordination between Districts and National Reference laboratory for collection, transportation and results notification	
Weaknesses	
1. Specimen audit trail and chain of custody not done as per SoPs (sample not labelled, request form not filled, chain of custody form not completed to accompany sample)	• Review and provide SoPs for specimen collection, Packaging, handling and transportation • Append chain of custody form to the SOs
Coordination	
Strengths	
1. The port health officer (AEHO) followed the procedure and tried to communicate with the next level (DHO, DEHO, IDSR Focal person) to notify and request for additional support 2. There was team work at the PoE where some immigration officers followed the DHO to a nearby facility to inform him of what was happening at the border when the DHO team could not be reached by phone due to poor network in the area. 3. Once contacted, the DHO was swift to react to the situation and mobilized a team (DEHO, IDRS Focal Person) to the border post to assist the Port Health Officer and give extra support to the port health officer (AEHO). The team at the border post worked collaboratively (immigration, security, port health) in managing the situation e.g. following and isolating other travelers 4. There was notification of Tanzania counterparts on the suspect case and steps being taken (Cross-border collaboration) 5. District Rapid Response Team (DRRT) was quickly mobilized to respond to the alert and comprised of Clinician, Nurse, Lab technician and Environmental Health Officer	

6. PHEMC meeting was convened within 24 hours in Chitipa and was mobilized by the DC to discuss the case and response plan. The meeting was as per procedure multi-sectorial (health, agriculture, water and Irrigation, police, immigration)	
Weaknesses	
1. Communication between Port Health and DRRT was delayed due to poor network in the area	• Explore other means of communication in case of emergencies e.g. use of radios, additional data for roaming (calling via Tanzania network that is available) • Provide list of contacts for multi sectoral District Focal Point (DFP) to the PoE
Logistics	
Strengths	
1. An ambulance with fuel was available to take DRRT to Mbilima Border Post as well as transport suspect and sample to Karonga 2. Required materials for PPE, donning, sample collection was made available and used 3. Medication for symptom management was available while waiting for laboratory test results 4. Human resource was available (AEHO, , DRRT, Driver, Laboratory) to respond to the suspect case	
Weaknesses	
1. The PoE officers were not able to conduct MRDT	• Provide MRDTs to the PoE
Risk Communication	
Strengths	
1. A press statement was pre-drafted in advance for use during and after the SimEx A Press Conference was conducted to officially inform the public on the SimEx, its objectives and outcomes. 2. Editors in major radio stations were warned in advance about the SimEx and did not authorize news items to be aired on the SimEx before the “lid” was officially lifted on the exercise. 3. The Station Managers of the Community Radios in the two districts were also pre-	• Need to come up with draft holding statements as part of the Risk and Crisis Communication Plan. • Need to update list of Chief Editors in all the major radio and community radios in the country.

warned about the exercise and did not air any news on the exercise. 4. Social Media monitoring was done, and Press Statement was released within the recommended 36 hours to reassure the public on their safety. 5. The two districts managed to ensure that word did not leak out to the general public on the identification of the suspect at Mbilima border	
Weaknesses	
1. The two districts do not have a Risk and Crisis Communication Plan for EVD. 2. The district had no EVD communication materials in stock. 3. There were no EVD communication materials in or near the isolation unit. 4. Some members of staff leaked to the public pictures of the SimEx at Mbilima border.	• Districts to adopt and adapt the national Risk and Crisis Communication Plans on EVD. • The districts to be provided with enough EVD communication materials so that they have some in stock. • Strengthen the issues of morality to staff members during orientation meetings.

5.0 Way Forward

The Exercise Management Team, guided by the Exercise Director developed an action plan based on the recommendations from the SimEx Debrief. The action plan, with assigned responsibilities and defined timelines will be monitored by the PHIM and revised Quarterly for progress.

Table 2: SimEx **Action Plan**

Action Item	Responsible Person	Time Frame
1. Determine number of required Officers for rotational and emergency situations at the PoE 2. Deploy required number of officers at the PoE	DHSS	30th March 2020
3. Strengthen border control by not allowing other travelers to pass through without undergoing the required border procedures including screening	PoE head (MRA)	30th December 2019
4. Screen all passengers (pedestrians, private and public transport)	Port health officers	1st February 2020
5. Formalize and Operationalize Border Committees with Tanzania including development of ToRs	NFP	31st January 2020
6. Conduct monthly PoE inter-agency meetings	MRA	31st January 2020
7. Conduct Quarterly Cross-Border Mbilima and Illenje boader posts PoE meetings	MRA	31st January 2020

8.	Conduct cross border meetings between Chitipa and Illenje districts	DC	31st January
9.	Negotiate with Illenje border staff in Tanzania to destroy the monkey bridges	MRA	31st January 2020
7	Refresher trainings and orientation of all PoE Staff (immigration, port health, health staff, security, MRA) on handling of suspects of highly infectious diseases/conditions	DHSS/PHIM	31st March 2020
8	Conduct quarterly PoE inspections using standard assessment checklist for compliance of all requirements	District Focal Point	1st Assessment by 31st March 2020
9	Develop Ebola Preparedness and response plan	PHIM	30th June 2020
10	Review, update and disseminate Ebola preparedness and response SOPs	National Focal Point	31st January 2020
11	Conduct training and orientation of Ebola SOPs for all PoE staff	National Focal Person	30th June 2020
12	Develop ToRs of the core National Ebola Management Team including incentive/risk allowance structure	National Focal Point	30th April 2020
13	Recruit National Ebola Management Team	National Focal Point	30th April 2020
14	Train and maintain a database of the National Ebola Management Team	National Focal Point	30th June 2020
15	Orient all other districts staff on highly infectious diseases, psychosocial support and other related issues to support the core national team to manage highly infectious diseases	DFP/ National Focal Point	31st December 2020
16	Provide list of contacts for multi sectoral District Focal Point (DFP) at all PoE	DFP	31st January 2020
17	Provide MRDTs to the PoE	DHSS	31st January 2020
18	Develop a draft holding statements as part of the Risk and Crisis Communication Plan.	NFP	28th February 2020
19	Update list of Chief Editors in all the major radio and community radios in the country.	NFP	31st January 2020
20	Districts to adopt and adapt the national Risk and Crisis Communication Plans on EVD	DFP	31st March 2020
21	Provide more EVD communication materials to the districts	NFP	31st March 2020

Annexes

Annex 1: SimEx **Planning Schedule**

DATE	Activity	Responsible officer
24th Sept 2019	Planning meeting with ECSA	Talkmore, Evelyn
30th Sept 2019	2nd planning meeting with ECSA	Talkmore, Evelyn
7th Oct 2019	3rd planning meeting with ECSA	Talkmore, Evelyn
9th Oct 2019	Briefing the SH	Evelyn
9th Oct 2019	Sending invitations to (i) MoH departments (ii) Sector partners (iii) development partners	Evelyn
10th Oct 2019	Submission of drill budget to concerned	Evelyn
16th Oct 2019	4TH Planning meeting with ECSA	Talkmore, Evelyn, Africa CDC
22-24th Oct 2019	Mapping of Mbilima PoE by NRRT	Evelyn
25th Oct 2019	5th Meeting with ECSA	Talkmore, Evelyn, Africa CDC
31st Oct 2019	Meeting with task force @ national level	Talkmore, Evelyn, Africa CDC
1st Nov 2019	Meeting with MoH Management	Talkmore, Evelyn, Africa CDC
3rd Nov 2019	All travel to the district	Talkmore, Evelyn, Africa CDC
4th Nov 2019	Brief the National team Simuka Lodge and the DC and Police officer in charge in Chitipa and Karonga	Team Leader & Facilitators
5th Nov 2019	DRILL	Facilitators
6th Nov 2019	DRILL	Facilitators
7th Nov 2019	De brief at Mikoma Lodge in Karonga	Facilitators
8th Nov 2019	Travel back to Lilongwe	ALL

Annex 2: SimEx Roles and Responsibilities

1.0 Introduction

This document sets out the roles and responsibilities of different players in the Field Simulation Exercise planned for Malawi at Mbilima Border Post in Chitipa District.

2.0 Roles and Responsibilities

2.1 Exercise Management Team (EMT)

This is a multi-disciplinary team, headed by the Exercise Director, that will be responsible for:

2.1.1 Planning

- Organizing all pre and post exercise meetings
- Informing all relevant stakeholders before and after the Exercise
- Ensuring all needed resources are available at the right place, at the right time in right quantities
- Appoints
    - Exercise Director - Dr Chitsa Banda (PHIM)
    - Exercise Controller - Mr Atek Kagirita (ECSA-HC)
    - Lead Exercise Evaluator – Dr Talkmore Maruta (ECSA-HC)
    - Actors see below

2.1.2 Conducting

- Ensuring the Exercise proceeds as planned by coordinating logistics
- Review and Approve and changes as needed during the exercise
- Convene the pre-exercise briefings each day to review the exercise material, run through the agenda and setup for the implementation day for clarity of roles and responsibilities during the Exercise
- Convenes the Exercise debriefing “hot wash” daily. The hot-wash is led by the Lead Evaluator

2.1.3 Evaluating of the Small Scale Field Exercise

- Convenes the “main exercise debriefing” where the exercise objectives are reviewed with the participants, and to capture feedback on achievements, challenges and critical gaps in plans, procedures, systems and training.

2.1.4 Generating the Exercise Report

- The Draft report shall be generated by the Exercise Director, Exercise Controller and Lead Facilitator and approved by the EMT. The report records, describes and analyses the exercise including outcomes and recommendations. During the exercise the EMT shall be allocated a Control Room which is dedicated space from which the exercise management team manages and stages the exercise.

The following shall be members of the EMT

- Dr Njunga – Animal Health
- Mabvuto Thomas – Health Education
- Mr Nthenda – Police
- Mr Mabvuto Chiwaula – Laboratory
- Lutufyo Kayange
- Wiseman Chimwaza
- Dr Talkmore- ECSA
- Dr Kelias Msyamboza- WHO
- Emily MacDonald - NIPH

2.2 Exercise Director (ED) – Evelyn Chitsa Banda

This is the person providing strategic oversight and direction for the planning, conduct and evaluation of an exercise. The exercise director is responsible for approving the exercise's purpose, objectives and supporting documentation, including the concept note, exercise plan and exercise instructions. ED shall be a member and head of the EMT.

- Closes the Exercise following the Exercise De brief
- Wards certificates of participation

2.3 Exercise Controller/lead facilitator - Mr Atek Kagirita (ECSA-HC)
The Exercise Controller (EC) shall

- Supervise the overall conduct of the exercise, ensuring objectives are met.
- Brief all the participants before the start of the exercise at each stage
- Be responsible for delivering injects and monitoring progress during an exercise.
- End the exercise (ENDEX) through an inject when:
    - he/she is satisfied that the objectives have been met; or
    - the time allowed for the exercise has been exceeded; or
    - an unexpected interruption has occurred.

NB: The facilitator is the first point of contact for any questions, clarifications or requests. EC shall be a member of the EMT

2.4 Exercise Evaluators (EE)

This is a team of people responsible for evaluating the Exercise led by a Lead Evaluator. They shall be responsible for

- Gathering data from the exercise and analyzing it on whether the objectives and the targets of the exercise were met with respect to overall performance, operational effectiveness, quality control, capabilities, strengths and weaknesses, and areas for improvement of the exercise

- Observing, monitoring and capturing participants' actions, interactions and responses by all players to the injects
- Capture all outcomes for comparisons against expected outcomes
- Lead Evaluator leads the Hot-Wash (Exercise debrief) held immediately after the exercise each day to provide initial feedback by all players and evaluators without going into details
- The following shall be the Exercise Evaluators
    - Lead Evaluator – Dr Talkmore Maruta
    - Exercise Evaluator 1 - Dr Mesfin Senbete UNICEF
    - Exercise Evaluator 2- Emily MacDonald – NIPH

2.5 Actors, Role players and other assigned duties

These are the persons who simulates a specific pre-scripted role in the exercise.

The following roles were outsourced form professional actors:

- Ebola Suspect
- Wife of the Ebola suspect
- Brother of the wife
- Suspect's business partner

The following team members were assigned specific roles in order to achieve the objectives of the SimEx

- Engaging private car used to ferry actors and other travelers to Mbilima Border Post -Robert Kapeni
- The driver of the hired Sienta – Alfonso Luwizi
- Field Exercise controllers:
    - Alvin Phiri – Mbilima border
    - Dr Mesfin Senbete – Mbilima border
    - Dr Eliza Msyani – Chitipa District Hospital
    - Gloria Kalolo – Karonga District Hospital
    - Dr John Chipolombwe Karonga ETU
    - Dr Amos Nyaka (Sheikh Abudul) – Public controller at the ETU
- SimEx Logistics Coordinators*:
    - Regina Mankhamba Norwegian Institute of Public Health
    - Seti Kanyanda CDC Atlanta; I-Tech
    - Thoko Sichinga World Health Organization
    - Mtisunge Yelewa Public Health Institute of Malawi

**Identification of control rooms and debriefing venue and making payments, arranging for refreshments for staff in the control room, fueling of vehicles and managing participants' DSAs, making all the payments for the hired vehicle, actors food and resources for use while acting*

Control Room

The following people were manning the control room. This room was used to monitor the progress of the activity and where necessary actors, field exercise controllers and field evaluators were given injects accordingly by the Exercise Controller from this room.

	Name	Organization
	Dr Atek Kagirita	ECSA Facilitator
	Dr Talkmore Maruta	ECSA -Facilitator
	Emily Mac Donald	Norwegian Institute of Public Health
	Umaer Naseer	Norwegian Institute of Public Health
	Mrs Tulipoka Soko	Director of Nursing and Midwifery, MoHP
	Mrs Doreen Ali	Deputy Director – Community Health Department MoH
	Mrs Margaret Kalanda	Admin, MoHP
	Dr Victor Etuk	CDC
	Dr Anne Mwale	PHIM
	Mtisung Yelewa	PHIM
	Dr Gladstone Kamwendo	Epidemiolgist – Animal Health
	Dr Njunga	Deputy Director Animal Health
	Edward Chado	PHIM
	Alvin Chidothi	HES MoHP
	Settie Kanyanda	PHIM
	Thomas Chinula	Immigration
	Mabvuto Chiwaula	PHIM
	Regina Mankhamba	PHIM
	Evelyn Chitsa Bnada	PHIM

Developing and Maintaining Activity log

A detailed SimEx activity log was developed and was maintained throughout the activity. The following were responsible for maintain this corner in the control room.
Major Lutufyo Kayange
Inspector Gift Kachoka
Borniface Grem
Penjani Phiri

Annex 3: SIMEX Scenario	
SCENARIO **MBILIMA BORDER PORT OF ENTRY MALAWI**	
Scenario 1	
A traveller from Kameme village arrives at the Mbilima Border Post on his way to a nearby town of Isongole in Tanzania at 09 00hrs on 5th of November 2019. As he is being served by the Immigration Officer, he vomits bloods. He is a cross-border trader and operates at Nakonde/Tunduma border where he exchanges several goods and items with traders from DRC who will be enroute from Luangwa Zambia to buy fish. His friend informs the officers at the Port of Entry that he has been to Kameme health Centre in the past week, where he had been treated for Malaria and also given some paracetamol which he had been taking for the fever. He usually travels in the night and uses the monkey bridges to cross from Illeje to Mbilima. The screeners at the point of entry suspect EVD infection and isolate the suspect from other travellers immediately. His business friend quickly suggest they call his wife who is within Mbilima village. The wife reveals that he recently participated in the burial of an uncle to the wife in Isanga Mbeya who died with fever and bleeding from the mouth. With the help of his family members who were resisting his isolation, he tries to escape. The screeners decide to notify the District Environmental Health Officer (DEHO) at 0930hrs. The DEHO calls the District Rapid Response Team (DRRT) to do secondary assessment. The DRRT decides to refer the suspect to the Chitipa Isolation unit at 1000hrs. The suspect is transported to Chitipa isolation unit. On the way, he vomited blood again. At the Isolation unit, he is screened again by the DRRT at 1100 hours. The DRRT decides to take a blood sample for EVD testing at 12:00 and therefore informs the Acting Director of Health and Social services (ADHSS) and the National Focal Point (NFP). The sample is sent to the Reference Laboratory in Lilongwe who conduct a rapid diagnostic testing as they had received the ERDTs recently. The sample tested positive for Ebola.	
Objective: To test an Ebola alert management system at Points of Entry i.e. 1) primary screening; 2) infection prevention and control (IPC) - hand hygiene, isolation, ; 3) information to sick travellers) luggage management; 6) communication/interaction with other agencies within the port of entry	

	Inject n°	Actual time	Exercise time	To Whom	From whom?	Inject type	What	Summary	Expected outcome	Remarks (By evaluator)
1. (A)SCENARIO I: Detection at Points of Entry (PoE)	1(A)	T_0	Day 1 0900hrs	Screeners at Mbilima Border Post	Lead facilitator to local facilitator to the walk-in actor	Walk-in actor	Arrival at the border post of a traveller from Mbilima village who attended a burial of an uncle to his wife in Isanga Mbeya with Ebola symptoms.	1.1 A traveller from Mbilima arrives with his luggage at the border post of Mbilima, Chitipa district. He vomits at the immigration point. He reveals he has been to Kameme health centre where he was seen for high fever and general malaise, in the last 7 days, with body pain.	**Surveillance and detection** Proceed with hand wash for all travellers on board with the suspect. Observe filling of the daily head count form Perform 1st screening: Measure temperature with infrared thermometer, Observe for signs of illness. Follow IPC measures (standard precautions) Maintain safe distance of 1 metre Use appropriate hand hygiene (Alcohol based hand rub) Isolation of the patient	

									Take care of luggage *	
									Appropriate PPE	
									Re-measure temperature with infrared thermometer after 15 minutes	
									Complete PoE Trigger Notification Form with traveller's details	
									Risk Communication	
									Inform sick traveller about situation and next steps	
									Inform the DEHO	
									DEHO informs ADHSS	
									DEHO mobilize the DRRT	
									Educate the sick traveller about signs, symptoms and benefits of possible treatment at an isolation unit	
									Have clear list of key contacts with telephone numbers	
									Coordination	

									The DEHO informs the ADHSS and NFP	
								1.2 The sick traveller is placed in temporary isolation	**Case management**	
									Isolate temporarily the sick traveller	
									By screeners	
									Appropriate IPC during isolation	
									Availability of the ambulance at Border point	
									Appropriateness of the ambulance to transport the EVD suspect	
									Security	
									Inform the security personnel/ immigration for compliance by the Screeners/ DEHO	
			References:							
			POE Tool kit							
			EVD standard Operating Procedures							
			Proposed material at PoE:							
			- Thermometers							
			- Hand washing stations							
			- Personal protective equipment – gloves, masks, googles, face shields,							
			- waste bins with colour coded bin liners							

			- Trigger notification form							
			- Head count form							
			- Access to Ambulance with fuel and trained driver							
			- Chlorine solution in concentrations of 0.5% and 0.05%							
			- 1 couch							
			• 1 plastic table							
			• 2 plastic chairs							
Objective: To test an Ebola suspect case management at the Isolation i.e. 1) secondary screening; 3) infrastructure, equipment and material-PPE, case investigation forms ; 4) IPC measures- isolation ; 5) Information to sick patient; 7) communications with District, NFP, Reference Laboratory										
	Inject n°	**Actual time**	**Exercise time**	**To Whom**	**From whom**	**Inject type**	**What**	**Summary**	**Expected outcome/By who**	**Remarks**
1. (B) Detection at Ebola Treatment Unit	1(B)	T_1	Day 1	Health workers at Chitipa isolation unit (DRRT)	Local facilitator at Chitipa Isolation unit	Arrival Ambulance with EVD suspect	Arrival of ambulance at the Chitipa isolation unit with suspected EVD traveller	1.1(B) A traveller from Mbilima arrives with his luggage at the border post of Mbilima, Chitipa district. He vomits at the immigration point. He reveals he has been to Kameme health centre where he was seen for high fever and general malaise, in the last 7 days, with body pain.	**Surveillance and detection**	
			1000hrs						Perform <u>secondary screening</u>: Measure temperature with infrared thermometer, Take clinical history, next of kin, phone number and address in Mbeya province Isanga district, Tanzania,	

									symptoms and significant exposure	
									Follow IPC practice (standard precautions)	
									Contact listing	
									Take care of luggage	
									Admit the suspect to the suspect isolation unit and initiate care & MRDT	
									Notify NFP	
								1.2 (B) The health worker decides to take blood sample. The sick patient is placed in suspect/isolation unit	**Infection prevention and Control**	
									Donning of full PPE	
									Disinfection of the ambulance	
									Observance of Standard IPC precautions	
									Coordination	

									Communicate to the ADHSS, NFP, Reference Laboratory	
								1.3(B) The sick patient is placed in suspect/isolation unit	**Case management**	
									Admit to suspect isolation unit	
									Inform sick patient about situation and next steps	
									Request information of next of kin and details of address	
									Provide initial care to suspect including malaria RDT, IV fluid resuscitation, antipyretics and antibiotics	
			References:							
			POE Tool kit							
			EVD SOPs							
			Proposed material at triage/isolation unit at Health Care Centre:							
			• Latrines M/F							
			• 2 plastic pails (buckets) of capacity 10-20 L with lids (for diarrhoea, vomit, and other biological liquids of patients)							
			• 2 plastic waste bins with appropriate colour coded liners							
			• 1 sprayer and chlorine solution							

			• Hand wash (alcohol based hand rub, or pail and running water, or chlorine solution or water and soap).						
			• 2 -3 PPE (near the unit – accessible 24 hours – for example at emergency service pharmacy)						
			• beds						
			• 1 table						
			• 2 chairs						
			Thermometers						
Objective: To test Ebola suspect case management at the Isolation unit i.e. 3) Laboratory- sample collection, packaging and transportation PPE, Case investigation forms ; 4) IPC measures; 7) communications with District, NFP, Reference Laboratory									
	Inject No.	**Actual Time**	**Exercise time**	**To whom**	**From whom**	**What type**	**Summary**	**Expected outcome/By whom**	**Remarks**
1 C Patient admitted	**1 C**	**T2**	Day 1	Clinical team /DRRT at Chitipa isolation unit	Local facilitator Chitipa isolation unit	Admitted EVD suspect	NRRT is preparing to take off blood for testing for EVD virus.	**Surveillance and Laboratory testing**	
			1200hrs					Filling in case investigation form	
								Step by step demonstration of sample collection, labelling and triple packaging	
								Case Management	
								Appropriate IPC practice	
								Initial clinical care (Malaria RDT, antibiotics, iv fluids)	
								Coordination	
								Communicate to the ADHSS, NFP,	

								Reference Laboratory	
								Logistics	
								All necessary supplies (materials) are available (checklist)	
				References:					
				EVD standard Operating Procedures					
				WHO Infectious Substance transportation guideline					
				Proposed material at PoE:					
				- Blood collection tubes (EDTA)					
				- Tourniquet					
				- Swabs					
				- Winged butterfly cannula					
				- 70% alcohol					
				- Gauze pads and adhesive bandage					
				- Tray for assembling blood collection tools					
				- Rack for holding blood tubes					
				- Waterproof marker					
				- Ziplock bag					
				- Filled case investigation form					
				- Transport (vehicle , fuel, driver)					
Objective: To assess accuracy and completeness of the chain of custody form									
	Inject No.	**Actual Time**	**Exercise time**	**To whom**	**From whom**	**What type**	**Summary**	**Expected outcome/By whom**	**Remarks**
1. (D) Case investig	1(D)	T_3	Day 1	Driver of standby		Sample delivered to	1.1After sample is taken and	**Surveillance and Laboratory**	

				vehicle transporter	Lab personnel	the standby transport	packaged it is delivered to the transporting vehicle	Correct triple packaging Accompanying documentation (case investigation form , chain of custody form) **Logistics** Transport available (vehicle, driver, fuel) Chain of custody form is available	
Objective: To assess coordination and information flow of EVD positive results from the Laboratory (UVRI) to district and national level									
	Injection No.	**Actual Time**	**Exercise time**	**To whom**	**From whom**	**What type**	**Summary**	**Expected outcome/By whom**	**Remarks**
1. (E) Dispatch of results	1 E		Day 2 0200hrs	DEHO and NFP	Lead facilitator	After 12 hours from submission of the sample to the driver; phone call communicating positive results (Lab notifies SH)	The Reference laboratory technologist delivers positive results to TL Who informs the SH: NFP, ADHSS and DEHO at the Chitipa isolation unit	**Coordination** **District** ADHSS informs DEHO who informs the screening Team at Mbilima crossing point of the positive result ADHSS communicates to TL in writing (detailing case, location, number of probable cases	

								and response plan)	
								DC mobilize the PHEMC	
								Port Health Informs the Tanzania Port Health	

Annex 4: Mbilima SimEx Activity Log Sheet

SER	ACTIVITY	TIME FROM	TIME TO	GRID	REMARKS
DAY 1 OF SimEx **03/11/19**					
1	Move to Karonga	at 0830	at 2200		All
DAY 2 OF SimEx **04/11/19**					
2	Briefing of exercise staff	at 0800	at 1600		Various roles assigned
3	Move to Chitipa	at 1600	at 1800		All
DAY 3 OF SimEx **05/11/19**					
4	Move to SimEx start point from Chitipa Boma	at 0800	at 0946		Photo/videographers, Field Ex Controller, Evaluators arrive at Mbilima border. Waiting for Actors
5	Move to SimEx start point from Chitipa Boma	at 0825	at 1022		Actors arrive at Mbirima border
6	Courtesy call - DC (Mr H Gondwe) and O/C MPS (Mr Kawale) at the DC's office	at 0905	at 0922	Chitipa Boma	12 members of the exercise team attended. The DC and O/C assured the team of their cooperation
7	Escorts get border passes to Tanzania	at 1025	at 1025		
8	Actor tries to induce vomiting	at 1025	at 1033	Mbirima	Port health official takes actor to isolation tent to take temperature
9	Actor vomits	at 1025	at 1026	Mbirima	Vomit is not blood red
10	Wife and brother called by the Ex Controller to move to site	at 1039	at 1040	Ex Control Room	Field ex Controller could not reach the wife and brother due to network challenges
11	Wife and brother arrive at site	at 1042		Mbirima	
12	Wife and brother meet port health officials	at 1043		Mbirima	
13	Port health officer examines actor and suspects malaria	at 1102		Mbirima	Port Health Official insists that it is malaria. The actor is in the isolation tent
14	Actor goes to the toilet	at 1111		Mbirima	
15	Port health officer briefs the Immigration officer on the condition of the patient	at 1122		Mbirima	port health official now in gloves
16	Port health official prepares isolation room	at 1128		Mbirima	port health official opens windows in the isolation tent

17	Immigration officer summons all passengers who travelled with the actor	at 1135		Mbirima	The passengers had run away from the port of entry
18	Actor moved to isolation compartment of the isolation tent	at 1150		Mbirima	Actor's shirt is removed
19	Wife packs luggage to move to the isolation compartment of the tent	at 1150		Mbirima	
20	Immigration officers blame the system for assigning only HSAs to work at the port of entry	at 1150		Mbirima	Staff at the border are urging the port health official to contact Kapenda Health Centre for assistance
21	Disinfection of vomit is done	at 1155		Mbirima	
22	N95 mask provided to cleaner to disinfect the toilet which was used by the actor	at 1207		Mbirima	
23	Wife calls a relative of husband	at 1219		Mbirima	
24	Relative of husband calls back the wife of actor	at 1225		Ex Control Room	The relative is informed that an ambulance will be dispatched from Chitipa boma to the border. Further investigations by DHO staff will be done at the border
25	Some passengers are having their history taken by the port health official	at 1225		Mbirima	
26	Port health official briefs the Immigration officer about the history of the passengers after reviewing the health passport books	at 1233		Mbirima	
27	DEHO's phone cannot be reached	at 1235			The port health official does not have DHSS's number
28	Port health official tries to call IDSR Coordinator	at 1238		Mbirima	
29	IDSR Coordinator's phone is out of reach	at 1257			
30	Ex Controller calls DHO. Tells the DHO that he has passed the border earlier today and that there was a lot of confusion at the site because of an alleged Ebola traveler	at 1320	at 1321	Ex Control Room	DHO was at Kapenda health center and will move to Mbirima border post to assess the situation. He had not received any call from anyone about the incident
31	NFP has been alerted on the situation at Mbirima by the Chitipa IDSR Coordinator	at 1354			IDSR Coordinator is on his way to Mbirima.

32	NFP has informed the Team Leader	at 1405			
33	4 people have arrived at the border and went straight into the isolation tent	at 1410		Mbirima	Might be from Tanzania going through the normal border crossing procedure
34	Actor comes back from toilet and passes the 4 travelers to the isolation compartment of the tent	at 1416			This is the second time the actor has visited the toilet
35	The 4 people have proceeded to the immigration department for further border processes	1416			The 4 travelers have been cleared by the port health official
36	Wife in gloves seen pouring water after coming from the toilet	at 1420			
37	Wife of actor calls relative of husband	at 1425		Ex Control room	The Relative of the husband is told that the patient will be take direct to Karonga
38	Relative of husband calls the port health official. Says he has called the management team	at 1430			The plan as indicated by the port health official is that DHO will send a team to Mbirima for assessment. The patient will then be referred directly to Karonga depending on the outcome of the assessment
39	A vehicle has arrived at Mbirima from Malawi side	at 1430			
40	DHO has arrived and is being briefed by the port health official. Immigration officer is present	at 1436			A discussion underway according to picture description
41	DHO team has become suspicious of vehicles parked near the border				
42	Lab officer calls Central Lab for clarification on where the EVD sample can be collected	at 1457			
43	Port health official and a member from the DHO team talking to passengers who traveled with the actor	at 1500			Details of the passengers collected by the DHO
44	HSA in full PPE except for gumboots	at 1515			
45	DRRT departs Chitipa boma for Mbirima	at 1515			

46	Screening of travelers entering Malawi no longer being done in isolation tent	at 1517			
47	Three members of DHO team have left by vehicle leaving one member behind	at 1517			
48	Remaining member of DHO team interviews wife	at 1518			
49	Several people watching the scene	at 1518			
50	HSA screening travelers with 'PPE'	at 1520			
51	Three members of the DHO team have returned and inspect the area that the suspect vomited	at 1527			
52	DRRT departs Chitipa boma for Mbirima	at 1515			
53	Patient came out of the isolation compartment of the tent and was quickly sent back	at 1539			
54	Passengers' knowledge on Ebola being assessed by DHO team	at 1541			
55	Immigration officers preparing chlorine solution	at 15 41			
56	IDSR Coordinator calls NFP again for information of affected regions in DRC to establish the epidemiological link	at 1542			
57	Passengers being refused to leave as they have been told that Ebola is a national concern.	at 15:53			the DHO team in process of contacting hospitals of the respective residential areas for passengers for 21 days observations.
58	Ambulance on its way as the passengers are waiting to be disinfected before being transported	at 15:54			
59	HSA mobilizing people to revisit decontamination of places where the "suspect" has been.	at 15:54			young men mobilized to make solutions for decontamination
60	HSA busy screening people, attending to the patient, directing decontamination, and attending to the loud complaints of the "passengers"	at 16:00			

61	Ambulance has arrived	at 16:01			2 ambulances; MG 876 AK is one of the ambulances present
62	DHO and Ambulance team discussing next to the ambulances	at 16: 10			
63	Entire Immigration staff, a member from the DRRT team and DHO staff spectators watching from a distance	at 16:13			
64	passenger told to wait, forms have been given so that more information is filled	at 16:14			
65	DRRT preparing to move. Pulling PPE from their ambulance	at 16:16			
66	DRRT moved to disinfection with the sprayers	at 16:22			
67	wife calls the husbands relative	at 16:30			
68	wife calls the husbands relative to update that they will be leaving for Kalonga	at 16:32			the passengers are not allowed to buy food or to receive money.
69	the DRRT now seems to have pulled down all PPE they needed from the ambulance. Awaiting for the order to move to the patient	at 16:32			
70	the room that the patient used is restricted and has been disinfected	at 16:47			
71	DRRT donning	at 16:52			
72	DRRT still donning	at 1702			
73	About 7 people watching the donning of PPE by DRRT	at 1707			
74	Member of the control room receives a WhatsApp message asking if he has heard anything on a suspected case of Ebola in Chitipa	at 1705		Ex Control Room	
75	One ambulance has departed from Mbirima with amber lights on.	at 1716		Mbirima	Passengers in ambulance not known
76	One DRRT member is moving into the isolation tent	at 1720		Mbirima	
77	The DRRT member has commenced disinfection of the isolation tent	at 1721		Mbirima	

78	The remaining members of the DRRT move into the isolation area	at 1731			Sample collection kit taken into the isolation area
79	The ambulance that departed the scene was from Kameme Health Centre.	at 1740		Mbirima	
80	Sample being collected	at 1743		Mbirima	
81	Foot bath prepared and laid at the entrance to the isolation center	at 1746		Mbirima	
82	DC and O/C MPS of Karonga have been briefed about the SIMEX	at 1947		Karonga	Four members of the Exercise Team attended the meeting
83	Another ambulance approaching Mbirima border post with amber lights and siren on	at 1951		Mbirima	
84	Passengers feet are being sprinkled with disinfectant	at 1753		Mbirima	
85	Benches, chairs and the surrounding areas being disinfected by a member of DRRT team	at 1753		Mbirima	
86	Sample collected	at 1801		Mbirima	Packaging underway
87	DRRT members out of the isolation tent	at 1806		Mbirima	
88	Relative of husband receives a call from the wife informing her that the patient will be taken to Karonga	at 1808	at 1809	Mbirima	Patient and guardian plus the sample to board the same ambulance
89	An ambulance seen entering Karonga ETC	at 1812		Karonga	
89	DHO Karonga calls the Team Leader at PHIM to inquire if Karonga DHO should receive the suspected EVD case in Karonga ETU	at 1815		Karonga	DHO Karonga advised to admit the suspected case
90	DRRT members doffing	at 1822		Mbirima	
91	DHO Karonga informs the visiting physician that they are expecting a suspected EVD case from Chitipa in an hour and a half. Invitation extended for him to attend a planned meeting at 1900hrs	at 1825		Karonga	

92	Community engagement has started at Mbirima border post surrounding areas	at 1825		Mbirima	Chiefs have been engaged
93	Passengers to be released after completing follow up forms. DHOs in their respective homes will be contacted to continue the follow up process	at 1832		Mbirima	Instructions from the DHO Chitipa
94	Patient has not yet boarded the ambulance	at 1843		Mbirima	Sample already in the ambulance
95	A woman is heard informing the community members that there is an Ebola patient at the border	at 1845		Mbirima	
96	PPE being disposed off by burning	at 1856		Mbirima	
97	Patient has boarded the ambulance	at 1904		Mbirima	
98	Reusable PPE being disinfected	at 1908		Mbirima	
99	Wife has started coughing	at 1911		Mbirima	
	DEHO Chitipa informs Environmental Health National Level about probable EVD case	at 1921			
100	Ambulance has departed from Mbirima	at 1940		Mbirima	Patient, wife, brother and 2 HCWs on board
101	Passengers who travelled to the border with the patient in the morning are boarded the DHO's vehicle at the back and about to depart from Mbirima	at 1942		Mbirima	
102	DEHO Chitipa calls a Deputy Director in the Department of Preventive Health that he is failing to get through to the SH. He will share a summary report with the central level later in the night	at 1944			
103	The ambulance which was seen approaching Karonga ETC was actually just an ordinary land cruiser vehicle with one of the exercise team members	at 2005		Karonga	
104	Ambulance with patient approaching Chitipa boma	at 2011		Chitipa	
105	Ambulance with patient passing Chitipa boma	at 2030		Chitipa	

106	Management meeting has just ended in Karonga	at 2019		Karonga	Case will be managed in Karonga. Sample collection discussed. Accommodation of HCWs working in ETU.
107	Chitipa Lab Technician communicates the contact number of the person in custody of the sample	at 2040			
108	Ambulance passing Kapoka TC	at 2042		Chitipa	
109	Karonga continues to set up the ETU	at 2059		Karonga	
110	Mbirima Ex Evaluator arrives in Chitipa boma	at 2101		Chitipa	Proceeding to Karonga
111	ETC in Karonga ready	at 2110		Karonga	
112	Flat tyre for Sienta	at 2131		Mbirima	spare tyre being fitted
113	More supplies being brought into the ETC in Karonga	at 2118		Karonga	
114	Ambulance passing Kayerekera	at 2122			
115	Ambulance at Karonga airport	at 2129			
116	Sienta arrives in Chitipa boma	at 2131			
117	Ambulance at Karonga roundabout	at 2132			
118	Ambulance arrives at Karonga ETU	at 2136			
119	Patient taken into ETU	at 2152			
120	Food brought to patient and guardians	at 2158			
121	A second ambulance seen approaching the ETU. It reverses and leaves immediately	at 2203			
122	Two HCWs in full PPE disinfect ambulance under the DMO's supervision	at 2205			
123	The visiting Physician enters the ETC	at 2206			Decision made. The guardians will be given chairs outside the ETC and their temperatures will be checked
124	One HCW leaves the ETU in full PPE and goes into the main hospital	at 2226			
125	One HCW in full PPE gets the sample and takes it behind the ETU	at 2228			

126	Central lab reports that the sample doesn't have any documentation	at 2230			
127	Vehicle carrying specimen departs for Lilongwe	at 2235			
128	Patient walks to the toilet and back. HCWs have put another liter of normal saline	at 2242			
129	Patient asks HCWs to inform the guardians to call his brother	at 2258			
130	Wife wants to visit patient but has been told that she can only do so in full PPE	at 2258			
131	Guardians being disinfected and shown their toilets	at 2307			
132	Ambulance leaves the ETU	at 2308			
133	DEHO is the lead supervisor in full PPE	at 2309			
134	DHO, DMO and DNO available	at 2311			
135	They are using sharps containers which are not pierce or water resistant	at 2312			
136	Clothes of patient being disinfected with 0.5% chlorine	at 2332			
137	Supervisor seen to be observing doffing	at 2332			
138	DHO, DEHO and DMO have doffed. They stand on chlorinated door mat for 5 min	at 2336			
139	They HCWs are seen to be walking in a predefined direction	at 2340			
140	PPE segregated into reusable and non-reusable	at 2340			
141	Central lab calls and stops a member of KPS lab posting about the exercise	at 2345			
142	People at ETU taking precautions	at 2348			
143	DMO, the lead clinician, writing patient history after coming out of ETU	at 2350			
144	Ambulance disinfected. Full disinfection to be done in Chitipa	at 0001			

145	Ward round done. Patient to continue with normal saline only. Agree not to send FBC to lab	at 0021			
146	Guardians not given shelter and linen	at 0036			
147	NFP receives preliminary report from IDSR Coordinator Chitipa	at 0200			
148	The news about the Ebola suspected case continues to spread on social media	at 0625			
149	Ex Control Room set up in Karonga	at 0647			
150	RDT results being released	at 0653			
151	Results shared with Chitipa DHO and sample sent to NICD for confirmation	at 0724			
152	Patient given breakfast	at 0726			
153	DHO worried about guardians being put together with patient in isolation compartment of the isolation tent	at 0731			
154	HES advises the Ex Control Room to consider psychosocial support and PFA	at 0739			
	IDSR coordinator in Chitipa has been informed about the RDT positive results by NFP	at 0754			Planning to communicate to the passengers' respective district for contact tracing. Management meeting planned at 0830
155	Guardians outside the ETU, no movement	at 0757			
157	Doctor arrives, talking to guardians	at 0810			
158	Hospital management are now aware of the RDT positive result but haven't disclosed to the patient yet	at 0812			
159	Hospital management are yet to share the positive RDT results with other members of staff, waiting for proper channel	at 0816			
160	Patient not yet transferred to red zone. Waiting for confirmed lab results	at 0820			

161	RDT positive results communicated to Karonga DMO by Chitipa DHO. Karonga DHO's phone could not be reached	at 0828			
162	Food delivered through the window	at 0822			
	Security Officers chased the all the people near the ETU	at 0831			
163	DHO Karonga calls DMO and DEHO to make sure contact tracing is done and asks Chitpa to come and assist	at 0853			
165	Karonga staff not happy with Chitipa referring the case to Karonga.	at 0855			
166	DEHO Karonga has informed PHEMC about the probable EVD case in the ETU	at 0859			DEHO KA informs Environmental Health National level about the RDT + results
167	DHO calls Dr Kabuluzi but his phone is out of reach	at 0901			Management team worried that patient looks weak and might vomit. Patient has eaten and has gone back to sleep
168	Ex Controller departs Chitipa boma for Mbirima to check on HAS	at 0905			
169	Management considering moving a refrigerator to the ETU for members of staff use	at 0907			
	Dc Chitipa going to DHO for the meeting	at 0914			
170	Karonga Team brainstorming on possible diagnosis	at 0915			
171	Chitipa waiting updates on PHEMC meeting	at 9:18			
172	Fresh chlorine for disinfection prepared	at 0919			fuel purchased for burning used items
173	Day shift has not yet taken over	at 0927			seniors pushing for juniors to take shifts
174	Movements close to ETU is highly restricted for non HCW	at 0941			
175	Guardians kept outside ETU but within the fence of ETU	at 0954			

176	Exercise Directors calls PHIM TL requesting him to inform the DHO's of Chitipa and Karonga about the positive results of the ERDT	at 1005			

Annex 5: **Part A: Participant Information Sheet: Main Actor**

Public Health Institute of Malawi

Study title

Ebola Small Scale Field Simulation Exercise in Chitipa and Karonga Districts

Name and Contacts of Principal Investigator

Evelyn Chitsa Banda PhD

Public Health Institute of Malawi; P. O Box 30377 Lilongwe 3, Malawi

chitsabandaeve@yahoo.com +265 999 936 937

NHSRC Contacts

The Chairman, NHSRC, C/O ministry of Health, P.O Box 30377, Lilongwe.

Introduction

The Public Health Institute of Malawi under the Ministry of Health and Population and its stakeholders are planning to conduct an open small scale field simulation exercise on Ebola in Chitipa and Karonga districts with financial support from Norwegian Institute of Public Health, the World Health Organization and CDC Atlanta through I-tech while the East Central and Southern Africa –Health Community (ECSA-HC) and other local partners will provide technical support. The aim of this exercise is to determine the level of preparedness of different players in responding to an Ebola outbreak under ONE-HEALTH approach.

You are being invited to participate in this open small scale field simulation is exercise which is aimed at assessing the level of preparedness of the two northern districts in the country in prevention detection and response to public health events. This simulation is open because some of the key people in the participating districts will be informed before or soon after commencement of the activity. National legislation from the Government of Malawi require that your written consent be obtained before undertaking any study involving you personally.

Participation to this activity is voluntary. Before you decide, it is important that you understand what will be involved so that you are able to give informed consent. As a potential participant you will be informed on the following areas; the objectives of this study, the steps involved, and possible benefits and risks. There may be some words that you do not understand, but please feel free to ask questions. Please take time to read this form and discuss it with your family, friends

or doctor if you want before you can make the decision to participate or not. If you wish to participate, you will be asked to sign a consent form. However, it is up to you to decide whether or not to take part in this exercise.

Purpose of the exercise

1. To assess the level of alertness of members of staff at the point of entry in detecting suspected Ebola cases

2. To analyze the capacity levels of institutions in Ebola suspect case management at the quarantine/ isolation unit

3. To appreciate the capacity levels of clinical teams in EVD case management at the Ebola Treatment Unit

4. To evaluate the effectiveness and efficiency of coordination structures in managing EVD suspect and confirmed cases at both district and facility service delivery levels.

What will happen if the participant doesn't agree to participate?

Participation in research is voluntary, you are free to decide if you want to take part in the research or not. If you have decided not to participate that is completely fine and no repercussions will befall you.

Procedure (What will happen to the blood and other samples)

The exercise will use a simulated scenario of a suspected Ebola case entering a port of entry in the northern part of the country and progress up to isolation, referral to isolation unit and later to treatment unit. There may be need to collect blood samples for the following tests; Full blood count, malaria, HIV, Ebola and grouping and cross match. It is worth mentioning that as a patient you are allowed to accept or refuse any sample collection from you including refusing to have a procedure performed on you. The exercise is expected to run for a period of not more than 36 hours. But some small variances may be there. The exercise is based on the Ebola Preparedness plan for Malawi.

It is expected that the District Rapid Response Team will refer the suspect to Chitipa isolation unit where the sample for Ebola and other samples will be collected. The patient is expected to be referred to Karonga Ebola treatment unit (ETU) upon receiving information from the national reference laboratory where the sample will be sent that the sample tested positive for Ebola after an Ebola Rapid Testing was done. Most likely the results will be communicated to the district level management for their action. You are however going to have a doctor with you once you get into Karonga ETU who is aware of the simulation exercise who should be able to control and monitor that you don't get unnecessary medication and procedures.

Benefits of the exercise

The exercise will not bring direct benefits to the participant but it will help the participating districts and the nation at large in ascertaining the level of preparedness and improve on the identified gaps in the preparedness plan.

Are there any associated risks with the participation in the study?

Participation in the study does not introduce major risks, only that the blood sample collection and may be some intravenous infusion may introduce minimal risk.

CONFIDENTIALITY

Your true identity will remain confidential and we don't require you to provide any real particulars of yourself as a person to anyone other than the activity managers. At the end of the exercise, the data collected on you shall be stored in a separate folder and shall be stored away from the reach of any person except the activity managers. However, during this process we will make sure that any information that could potentially identify you will be deleted from the records so that your confidentiality is respected. The video will not be shared with anyone outside the exercise. However, you may give investigators permission to use the video for evaluation and education purposes by checking the appropriate box below. By educational use, we mean that if you agree the video may be used in presentations to train other clinicians and public health practitioners on case surveillance, detection, infection prevention and case management.

If you accept to have your video used for educational purpose, there is a risk that your identity might not be fully preserved, although investigators will work their best to minimize this risk by not disclosing your name and by deleting your video from any presentation that might be sent to other third parties.

☐ I consent to the use of my video-recording for education purposes.

☐ I do not consent to the use of my video-recording for education purposes

RIGHTS AND RESPONSIBILITIES

Signing this consent form in no way limits your legal rights against the investigators or anyone else. In addition, by consenting to participate in this study you do not release the investigators from their legal and professional responsibilities. Your participation in this study is entirely voluntary and it is your choice whether to participate or not. Your decision will not affect the services you receive at any hospital including the participating district hospitals and the port of entry.

For more information, you can contact Dr. Chitsa-Banda using the info on the first page of this consent form. If you have concerns about the study, you can also contact the NATIONAL HEALTH SCIENCES RESEARCH COMMITTEE, Ministry of Health, Malawi; Cell: 0999397913.

Study Approval

The exercise was reviewed and approved by NHSRC- **Ministry of Health, P.O Box 30377, Lilongwe 3, Malawi**.

Tel: : 0999397913**. Email; mohdoccentre@g.mail.com.**

Annex 6 Part B: informed Consent Form

CONSENT TO PARTICIPATE

- I have read and understood this participant information sheet and the consent form.
- I have had enough time to consider the information and to ask for advice if necessary. I have had the opportunity to ask questions, and had satisfactory answers to my questions.
- I understand that all the information collected will be kept confidential, and that the results will only be used for the scientific purposes stated in this form.
- I understand that my participation in this study is voluntary and that I can withdraw any time without any effects on my current or future medical care.
- I understand that I am not waiving any of my legal rights as a result of signing this consent form.
- I have been told that I will receive a dated and signed copy of this consent form for my own records.
- I freely consent to participate in this study.
- I have been told that I will receive a compensation fee amounting to MK154,000.00

PRINTED NAME OF PARTICIPANT	SIGNATURE	DATE
PRINTED NAME OF THE INVESTIGATOR/ OR DESIGNATED REPRESENTATIVE	SIGNATURE	DATE
PRINTED NAME OF WITNESS	SIGNATURE	DATE

LANGUAGE USED FOR DISCUSSION: English

Annex 7 Part A: Participant Information Sheet Actor's Wife

Public Health Institute of Malawi

Study title

Ebola Small Scale Field Simulation Exercise in Chitipa and Karonga Districts

Name and Contacts of Principal Investigator

Evelyn Chitsa Banda PhD

Public Health Institute of Malawi; P. O Box 30377 Lilongwe 3, Malawi

chitsabandaeve@yahoo.com +265 999 936 937

NHSRC Contacts

The Chairman, NHSRC, C/O ministry of Health, P.O Box 30377, Lilongwe.

Introduction

The Public Health Institute of Malawi under the Ministry of Health and Population and its stakeholders are planning to conduct an open small scale field simulation exercise on Ebola in Chitipa and Karonga districts with financial support from Norwegian Institute of Public Health, the World Health Organization and CDC Atlanta through I-tech while the East Central and Southern Africa –Health Community (ECSA-HC) and other local partners will provide technical support. The aim of this exercise is to determine the level of preparedness of different players in responding to an Ebola outbreak under ONE-HEALTH approach.

You are being invited to participate in this open small scale field simulation as a wife of a patient who is suspected of having Ebola and is finally diagnosed as such. The exercise is aimed at assessing the level of preparedness of the two northern districts in the country in prevention detection and response to public health events. This simulation is open because some of the key people in the participating districts will be informed before or soon after commencement of the activity. National legislation from the Government of Malawi require that your written consent be obtained before undertaking any activity involving you personally.

Participation to this activity is voluntary. Before you decide, it is important that you understand what will be involved so that you are able to give informed consent. As a potential participant you will be informed on the following areas; the objectives of this study, the steps involved, and possible benefits and risks. There may be some words that you do not understand, but please feel free to ask questions. Please take time to read this form and discuss it with your family and

friends if you want before you can make the decision to participate or not. If you wish to participate, you will be asked to sign a consent form. However, it is up to you to decide whether or not to take part in this exercise.

Purpose of the exercise

1. To assess the level of alertness of members of staff at the point of entry in detecting suspected Ebola cases

2. To analyze the capacity levels of institutions in Ebola suspect case management at the quarantine/ isolation unit

3. To appreciate the capacity levels of clinical teams in EVD case management at the Ebola Treatment Unit

4. To evaluate the effectiveness and efficiency of coordination structures in managing EVD suspect and confirmed cases at both district and facility service delivery levels.

What will happen if the participant doesn't agree to participate?

Participation in research is voluntary, you are free to decide if you want to take part in the research or not. If you have decided not to participate that is completely fine and no repercussions will befall you.

Procedure (What will happen to the blood and other samples)

The exercise will use a simulated scenario of a suspected Ebola case who is a business man and usually uses monkey bridges to cross over into the country. As a wife you will receive a call from his business friend telling you that your husband has just started vomiting blood at Mbilima border in Chitipa. You will be accompanied by a brother who will escort you to the boarder where you will find your husband isolated as they will be waiting for an ambulance to come and fetch the patient to either isolation unit at the district hospital or Karonga treatment unit. Upon enquiry you are expected to inform the Port of Entry officers his medical history which involves complaining of severe headaches, fever and diarrhoea in the past week and had visited Kameme health center.

The exercise is expected to run for a period of not more than 36 hours. But some small variances may be there. The exercise is based on the Ebola Preparedness plan for Malawi. It is expected that the District Rapid Response Team will refer the suspect to Chitipa isolation unit where the sample for Ebola and other samples will be collected. Most likely the results will be communicated to the district level management for their action. You will be required to respond to the situation according to the advice from the lead exercise controller who will be situated in a specially designed room called the control room elsewhere.

Benefits of the exercise

The exercise will not bring direct benefits to the participant but it will help the participating districts and the nation at large in ascertaining the level of preparedness and improve on the identified gaps in the preparedness plan.

Are there any associated risks with the participation in the study?

There are no anticipated risks for participating in the activity. In case there are security issues the Police in-charge of the district will provide the necessary support.

CONFIDENTIALITY

Your true identity will remain confidential and we don't require you to provide any real particulars of yourself as a person to anyone other than the activity managers. At the end of the exercise, the data collected on you shall be stored in a separate folder and shall be stored away from the reach of any person except the activity managers. However, during this process we will make sure that any information that could potentially identify you will be deleted from the records so that your confidentiality is respected. The video will not be shared with anyone outside the exercise. However, you may give investigators permission to use the video for evaluation and education purposes by checking the appropriate box below. By educational use, we mean that if you agree the video may be used in presentations to train other clinicians and public health practitioners on case surveillance, detection, infection prevention and case management.

If you accept to have your video used for educational purpose, there is a risk that your identity might not be fully preserved, although investigators will work their best to minimize this risk by not disclosing your name and by deleting your

video from any presentation that might be sent to other third parties.

☐ I consent to the use of my video-recording for education purposes.

☐ I do not consent to the use of my video-recording for education purposes

RIGHTS AND RESPONSIBILITIES

Signing this consent form in no way limits your legal rights against the investigators or anyone else. In addition, by consenting to participate in this study you do not release the investigators from their legal and professional responsibilities. Your participation in this study is entirely voluntary and it is your choice whether to participate or not. Your decision will not affect the services you receive at any hospital including the participating district hospitals and the port of entry.

For more information, you can contact Dr. Chitsa-Banda using the info on the first page of this consent form. If you have concerns about the study, you can also contact the NATIONAL HEALTH SCIENCES RESEARCH COMMITTEE, Ministry of Health, Malawi; Cell: 0999397913.

Study Approval

The exercise was reviewed and approved by NHSRC- **Ministry of Health, P.O Box 30377, Lilongwe 3, Malawi**.

Tel: : 0999397913**. Email; mohdoccentre@g.mail.com.**

Annex 8 **Part B: informed Consent Form**

CONSENT TO PARTICIPATE

- I have read and understood this participant information sheet and the consent form.
- I have had enough time to consider the information and to ask for advice if necessary. I have had the opportunity to ask questions, and had satisfactory answers to my questions.
- I understand that all the information collected will be kept confidential, and that the results will only be used for the scientific purposes stated in this form.
- I understand that my participation in this simulation exercise is voluntary and that I can withdraw any time without any effects on my current or future medical care.
- I understand that I am not waiving any of my legal rights as a result of signing this consent form.
- I have been told that I will receive a dated and signed copy of this consent form for my own records.
- I freely consent to participate in this exercise.
- I have been told that I will receive a compensation fee amounting to MK154,000.00

PRINTED NAME OF PARTICIPANT	SIGNATURE	DATE
PRINTED NAME OF THE INVESTIGATOR/ OR DESIGNATED REPRESENTATIVE	SIGNATURE	DATE
PRINTED NAME OF WITNESS	SIGNATURE	DATE

LANGUAGE USED FOR DISCUSSION: English

Annex 9: Part A: Participant Information Sheet: Business Partner

Public Health Institute of Malawi

Study title

Ebola Small Scale Field Simulation Exercise in Chitipa and Karonga Districts

Name and Contacts of Principal Investigator

Evelyn Chitsa Banda PhD

Public Health Institute of Malawi; P. O Box 30377 Lilongwe 3, Malawi

chitsabandaeve@yahoo.com +265 999 936 937

NHSRC Contacts

The Chairman, NHSRC, C/O ministry of Health, P.O Box 30377, Lilongwe.

Introduction

The Public Health Institute of Malawi under the Ministry of Health and Population and its stakeholders are planning to conduct an open small scale field simulation exercise on Ebola in Chitipa and Karonga districts with financial support from Norwegian Institute of Public Health, the World Health Organization and CDC Atlanta through I-tech while the East Central and Southern Africa –Health Community (ECSA-HC) and other local partners will provide technical support. The aim of this exercise is to determine the level of preparedness of different players in responding to an Ebola outbreak under ONE-HEALTH approach.

You are being invited to participate in this open small scale field simulation as a business friend of an Ebola suspected patient. This exercise is aimed at assessing the level of preparedness of the two northern districts in the country in prevention detection and response to public health events. This simulation is open because some of the key people in the participating districts will be informed before or soon after commencement of the activity. National legislation from the Government of Malawi require that your written consent be obtained before undertaking any activity involving you personally.

Participation to this activity is voluntary. Before you decide, it is important that you understand what will be involved so that you are able to give informed consent. As a potential participant you will be informed on the following areas; the objectives of this simulation exercise, the steps involved, and possible benefits and risks. There may be some words that you do not understand, but please feel free to ask questions. Please take time to read this form and discuss it with your

family, friends or doctor if you want before you can make the decision to participate or not. If you wish to participate, you will be asked to sign a consent form. However, it is up to you to decide whether or not to take part in this exercise.

Purpose of the exercise

1. To assess the level of alertness of members of staff at the point of entry in detecting suspected Ebola cases

2. To analyze the capacity levels of institutions in Ebola suspect case management at the quarantine/ isolation unit

3. To appreciate the capacity levels of clinical teams in EVD case management at the Ebola Treatment Unit

4. To evaluate the effectiveness and efficiency of coordination structures in managing EVD suspect and confirmed cases at both district and facility service delivery levels.

What will happen if the participant doesn't agree to participate?

Participation in simulation exercise is voluntary, you are free to decide if you want to take part in the exercise or not. If you have decided not to participate that is completely fine and no repercussions will befall you.

Procedure (What will happen to the blood and other samples)

The exercise will use a simulated scenario of a suspected Ebola case entering a port of entry in the northern part of the country and progress up to isolation, referral to isolation unit and later to treatment unit. There may be need to collect blood samples for the following tests; Full blood count, malaria, HIV, Ebola and grouping and cross match. It is worth mentioning that as a patient you are allowed to accept or refuse any sample collection from you including refusing to have a procedure performed on you. The exercise is expected to run for a period of not more than 36 hours. But some small variances may be there. The exercise is based on the Ebola Preparedness plan for Malawi.

It is expected that the District Rapid Response Team will refer the suspect to Chitipa isolation unit where the sample for Ebola and other samples will be collected. The patient is expected to be referred to Karonga Ebola treatment unit (ETU) upon receiving information from the national reference laboratory where the sample will be sent that the sample tested positive for Ebola after an Ebola Rapid Testing was done. Most likely the results will be communicated to the district level management for their action. You are however going to have a doctor with you once you get into Karonga ETU who is aware of the simulation exercise who should be able to control and monitor that you don't get unnecessary medication and procedures.

Benefits of the exercise

The exercise will not bring direct benefits to the participant but it will help the participating districts and the nation at large in ascertaining the level of preparedness and improve on the identified gaps in the preparedness plan.

Are there any associated risks with the participation in the study?

Participation in this exercise does not introduce major risks, only that the blood sample collection and may be some intravenous infusion may introduce minimal risk.

CONFIDENTIALITY

Your true identity will remain confidential and we don't require you to provide any real particulars of yourself as a person to anyone other than the activity managers. At the end of the exercise, the data collected on you shall be stored in a separate folder and shall be stored away from the reach of any person except the activity managers. However, during this process we will make sure that any information that could potentially identify you will be deleted from the records so that your confidentiality is respected. The video will not be shared with anyone outside the exercise. However, you may give the exercise director permission to use the video for evaluation and education purposes by checking the appropriate box below. By educational use, we mean that if you agree the video may be used in presentations to train other clinicians and public health practitioners on case surveillance, detection, infection prevention and case management.

If you accept to have your video used for educational purpose, there is a risk that your identity might not be fully preserved, although exercise managers will work their best to minimize this risk by not disclosing your name and by deleting your video from any presentation that might be sent to other third parties.

☐ I consent to the use of my video-recording for education purposes.

☐ I do not consent to the use of my video-recording for education purposes

RIGHTS AND RESPONSIBILITIES

Signing this consent form in no way limits your legal rights against the investigators or anyone else. In addition, by consenting to participate in this exercise you do not release the investigators from their legal and professional responsibilities. Your participation in this exercise is entirely voluntary and it is your choice whether to participate or not. Your decision will not affect the services you receive at any hospital including the participating district hospitals and the port of entry.

For more information, you can contact Dr. Chitsa-Banda using the info on the first page of this consent form. If you have concerns about the exercise, you can also contact the NATIONAL HEALTH SCIENCES RESEARCH COMMITTEE, Ministry of Health, Malawi; Cell: 0999397913.

Study Approval

The exercise was reviewed and approved by NHSRC- **Ministry of Health, P.O Box 30377, Lilongwe 3, Malawi**.

Tel: : 0999397913**. Email; mohdoccentre@g.mail.com.**

Annex 10 Part B: informed Consent Form

CONSENT TO PARTICIPATE

- I have read and understood this participant information sheet and the consent form.
- I have had enough time to consider the information and to ask for advice if necessary. I have had the opportunity to ask questions, and had satisfactory answers to my questions.
- I understand that all the information collected will be kept confidential, and that the results will only be used for the scientific purposes stated in this form.
- I understand that my participation in this exercise is voluntary and that I can withdraw any time without any effects on my current or future medical care.
- I understand that I am not waiving any of my legal rights as a result of signing this consent form.
- I have been told that I will receive a dated and signed copy of this consent form for my own records.
- I freely consent to participate in this exercise.
- I have been told that I will receive a compensation fee amounting to MK154,000.00

PRINTED NAME OF PARTICIPANT	SIGNATURE	DATE
PRINTED NAME OF THE INVESTIGATOR/ OR DESIGNATED REPRESENTATIVE	SIGNATURE	DATE
PRINTED NAME OF WITNESS	SIGNATURE	DATE

LANGUAGE USED FOR DISCUSSION: English

Annex 11: Part A: Participant Information Sheet: Brother in-law

Public Health Institute of Malawi

Study title

Ebola Small Scale Field Simulation Exercise in Chitipa and Karonga Districts

Name and Contacts of Principal Investigator

Evelyn Chitsa Banda PhD

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NHSRC Contacts

The Chairman, NHSRC, C/O ministry of Health, P.O Box 30377, Lilongwe.

Introduction

The Public Health Institute of Malawi under the Ministry of Health and Population and its stakeholders are planning to conduct an open small scale field simulation exercise on Ebola in Chitipa and Karonga districts with financial support from Norwegian Institute of Public Health, the World Health Organization and CDC Atlanta through I-tech while the East Central and Southern Africa –Health Community (ECSA-HC) and other local partners will provide technical support. The aim of this exercise is to determine the level of preparedness of different players in responding to an Ebola outbreak under ONE-HEALTH approach.

You are being invited to participate in this open small scale field simulation as a brother in-law of a patient who is suspected of having Ebola and is finally diagnosed as such. The exercise is aimed at assessing the level of preparedness of the two northern districts in the country in prevention detection and response to public health events. This simulation is open because some of the key people in the participating districts will be informed before or soon after commencement of the activity. National legislation from the Government of Malawi require that your written consent be obtained before undertaking any activity involving you personally.

Participation to this activity is voluntary. Before you decide, it is important that you understand what will be involved so that you are able to give informed consent. As a potential participant you will be informed on the following areas; the objectives of this study, the steps involved, and possible benefits and risks. There may be some words that you do not understand, but please feel free to ask questions. Please take time to read this form and discuss it with your family and

friends if you want before you can make the decision to participate or not. If you wish to participate, you will be asked to sign a consent form. However, it is up to you to decide whether or not to take part in this exercise.

Purpose of the exercise

1. To assess the level of alertness of members of staff at the point of entry in detecting suspected Ebola cases

2. To analyze the capacity levels of institutions in Ebola suspect case management at the quarantine/ isolation unit

3. To appreciate the capacity levels of clinical teams in EVD case management at the Ebola Treatment Unit

4. To evaluate the effectiveness and efficiency of coordination structures in managing EVD suspect and confirmed cases at both district and facility service delivery levels.

What will happen if the participant doesn't agree to participate?

Participation in research is voluntary, you are free to decide if you want to take part in the research or not. If you have decided not to participate that is completely fine and no repercussions will befall you.

Procedure (What will happen to the blood and other samples)

The exercise will use a simulated scenario of a suspected Ebola case who is a business man and usually uses monkey bridges to cross over into the country. As a wife you will receive a call from his business friend telling you that your husband has just started vomiting blood at Mbilima border in Chitipa. You will be accompanied by a brother who will escort you to the boarder where you will find your husband isolated as they will be waiting for an ambulance to come and fetch the patient to either isolation unit at the district hospital or Karonga treatment unit. Upon enquiry you are expected to inform the Port of Entry officers his medical history which involves complaining of severe headaches, fever and diarrhoea in the past week and had visited Kameme health center.

The exercise is expected to run for a period of not more than 36 hours. But some small variances may be there. The exercise is based on the Ebola Preparedness plan for Malawi. It is expected that the District Rapid Response Team will refer the suspect to Chitipa isolation unit where the sample for Ebola and other samples will be collected. Most likely the results will be communicated to the district level management for their action. You will be required to respond to the situation according to the advice from the lead exercise controller who will be situated in a specially designed room called the control room elsewhere.

Benefits of the exercise

The exercise will not bring direct benefits to the participant but it will help the participating districts and the nation at large in ascertaining the level of preparedness and improve on the identified gaps in the preparedness plan.

Are there any associated risks with the participation in the study?

There are no anticipated risks for participating in the activity. In case there are security issues the Police in-charge of the district will provide the necessary support.

CONFIDENTIALITY

Your true identity will remain confidential and we don't require you to provide any real particulars of yourself as a person to anyone other than the activity managers. At the end of the exercise, the data collected on you shall be stored in a separate folder and shall be stored away from the reach of any person except the activity managers. However, during this process we will make sure that any information that could potentially identify you will be deleted from the records so that your confidentiality is respected. The video will not be shared with anyone outside the exercise. However, you may give investigators permission to use the video for evaluation and education purposes by checking the appropriate box below. By educational use, we mean that if you agree the video may be used in presentations to train other clinicians and public health practitioners on case surveillance, detection, infection prevention and case management.

If you accept to have your video used for educational purpose, there is a risk that your identity might not be fully preserved, although investigators will work their best to minimize this risk by not disclosing your name and by deleting your

video from any presentation that might be sent to other third parties.

☐ I consent to the use of my video-recording for education purposes.

☐ I do not consent to the use of my video-recording for education purposes

RIGHTS AND RESPONSIBILITIES

Signing this consent form in no way limits your legal rights against the investigators or anyone else. In addition, by consenting to participate in this study you do not release the investigators from their legal and professional responsibilities. Your participation in this study is entirely voluntary and it is your choice whether to participate or not. Your decision will not affect the services you receive at any hospital including the participating district hospitals and the port of entry.

For more information, you can contact Dr. Chitsa-Banda using the info on the first page of this consent form. If you have concerns about the study, you can also contact the NATIONAL HEALTH SCIENCES RESEARCH COMMITTEE, Ministry of Health, Malawi; Cell: 0999397913.

Study Approval

The exercise was reviewed and approved by NHSRC- **Ministry of Health, P.O Box 30377, Lilongwe 3, Malawi**.

Tel: : 0999397913**. Email; mohdoccentre@g.mail.com.**

Annex 12: Part B: informed Consent Form

CONSENT TO PARTICIPATE

- I have read and understood this participant information sheet and the consent form.
- I have had enough time to consider the information and to ask for advice if necessary. I have had the opportunity to ask questions, and had satisfactory answers to my questions.
- I understand that all the information collected will be kept confidential, and that the results will only be used for the scientific purposes stated in this form.
- I understand that my participation in this simulation exercise is voluntary and that I can withdraw any time without any effects on my current or future medical care.
- I understand that I am not waiving any of my legal rights as a result of signing this consent form.
- I have been told that I will receive a dated and signed copy of this consent form for my own records.
- I freely consent to participate in this exercise.
- I have been told that I will receive a compensation fee amounting to MK154,000.00

PRINTED NAME OF PARTICIPANT	SIGNATURE	DATE
PRINTED NAME OF THE INVESTIGATOR/ OR DESIGNATED REPRESENTATIVE	SIGNATURE	DATE
PRINTED NAME OF WITNESS	SIGNATURE	DATE

LANGUAGE USED FOR DISCUSSION: English

Annex 13: SimEx Evaluation Form

MBILIMA BORDER POST SIMULATION EXERCISE

Malawi

4th -7th November 2019

Evaluation Checklist

INTRODUCTION

The Ministry of Health and Population Services (MoHPS) in collaboration with its partners conducted a Field Simulation Exercise from 4-6 November 2019 at the Mbilima Border Post, Chitipa District with the following objectives

1. To test an Ebola alert management system at Points of Entry
    - Primary screening
    - Infection prevention and control (IPC) - hand hygiene, isolation
    - Information to sick travellers
    - Luggage management
    - Communication/interaction with other agencies within the port of entry
2. To test an Ebola suspect case management at the Isolation
    - Secondary screening
    - Infrastructure, equipment and material- PPE, case investigation forms
    - IIPC measures- isolation
    - Information to sick patient
    - Communications with District, NFP, Reference Laboratory
3. To test Ebola suspect case management at the ETU
    - Laboratory- sample collection, packaging and transportation PPE, Case investigation forms
    - IPC measures
    - Communications with District, NFP, Reference Laboratory
4. To assess coordination and information flow of EVD positive results from the Laboratory (UVRI) to district and national level
5. To assess how a positive EVD case is managed at the ETU
6. To assess the coordination structures and functions at district level

SCOPE

This checklist was developed based on the specific objectives of a Field Simulation Exercise as described below. In addition, general questions under Section B were adopted from the World Health Organization Simulation Exercise evaluation form

EVALUATION AND SCORING

The checklist is scored to quantify the outcomes of the simulation exercise. The scores can be used to track performance over time. The scoring is based in the specific objectives of the simulation exercise (Section A) and general observations (Section B)

Specific Objectives

For each of the Simulation Exercise objectives below, document your observations as follows

- Y (Yes)- If the activity was conducted 100% = Full Marks as allocated per Question
- P (Partial) - If the activity was partly implemented = ½ mark
- NB: Each time a P is marked - indicate in the comments sections what was not done
- N (No) If the activity was not implemented at all = 0 Marks

Where there are tick boxes under main question, tick appropriate box before allocating marks. Where all sub questions are ticked **Y** - award full marks as allocated for each question

For each sub question ticked **P**, it contributes ½ mark towards total marks.

Objective	**Score**	
	Achieved	**Total Possible**
Objective 1: To test Ebola alert management system at Points of Entry	**16**	**21**
Objective 2: To test an Ebola suspect case management at the Isolation	**12**	**16**
Objective 3: To test Ebola suspect case management at the ETU	**1 ½**	**2**
Objective 4: To assess coordination and information flow of EVD positive results from the Laboratory (UVRI) to district and national level	**3**	**5**
Objective 5: To assess how a positive EVD case is managed at the ETU	**3 ½**	**5**
Objective 6: To assess the coordination structures and functions at district level	**1 ½**	**5**
General Observations	**5**	**8**
Total Score	**37.5**	**62**
	59%	

Objective	Observation			Comment	Score
OBJECTIVE 1: TO TEST AN EBOLA ALERT MANAGEMENT SYSTEM AT POINTS OF ENTRY					
Primary Screening	**Y**	**P**	**N**		**2**
	Tick for each item as Yes(Y), Partial (P) or No(N)			• Handwashing was done for travellers with the suspect ONLY • The bucket with solution was not labelled to ascertain its contents	
	Y	**P**	**N**		
Was there handwashing by the travellers					
Was the appropriate solution used for handwashing					
Was the suspect traveller screened for Temperature					
Infection prevention and control (IPC)	**Y**	**P**	**N**		**4 ½**
	Tick for each item as Yes(Y), Partial (P) or No(N)			• Initially suspect was handled with inappropriate PPE even after vomiting and showing symptoms of VHF • Suspect isolated within 1 hr of arrival (10:25 arrival; 11:50 hrs isolated) • Before arrival of the RRT, passengers were being screened inside the isolation unit, but this was stopped on their arrival • Wife requested to decontaminate vomit of suspect in the toilet • Other travellers held but not isolated until screened. They were allowed to sit outside mingling with other travellers	
	Y	**P**	**N**		
Is there equipment to screen travellers					
During screening for Temperature, did the officials maintain safe distance (at least 1 meter)					
Did the officials use appropriate PPE when handling suspect patient, cleaning vomit					
Was decontamination of contaminated areas done appropriately					
Was the suspect traveller immediately isolated					
Were the other travellers (people with suspect) isolated					
Was the luggage of the traveller taken care of by officials	**Y**	**P**	**N**		**1**

Was the Trigger Notification Form with traveller's details completed	**Y**	**P**	**N**		**0**
Communication/interaction with other agencies within the port of entry	**Y**	**P**	**N**	• Communication between HAS, Immigration was observed to be very optimal as they kept discussing the case	**1**
Risk Communication	**Y**	**P**	**N**		**2**
	Tick for each item as Yes(Y), Partial (P) or No(N)			• HSA and the RRT that responded both took some time to explain to the fellow travellers on Ebola, its risk and why they were being kept. They were also informed that contact will be made to their nearest hospitals for continued observation for 21 days	
	Y	**P**	**N**		
Was the suspect traveller educated about the signs, symptoms and benefits of possible treatment at an isolation unit					
Did the officials explain to the other travellers who were with the suspect about the signs, symptoms and benefits of possible treatment at an isolation unit					
Coordination	**Y**	**P**	**N**		**2**
	Tick for each item as Yes(Y), Partial (P) or No(N)			• Although communication to all respective persons, it was observed that there was a delay of up to 3 hrs as they could not be reached. • Hence, the RRT only arrived 4 ½ later after the exercise team had to inject by calling the DHO	
	Y	**P**	**N**		
Was there Communication with District Environmental Officer (DEHO) about the suspect case					
Did the DEHO communicate with the ADHSS and National Focal Person about the suspect cate					
Was there communication with other agencies (immigration, security) about the suspect case					
Transportation of suspect case	**Y**	**P**	**N**		**3 ½**
	Tick for each item as Yes(Y), Partial (P) or No(N)			• There is no transport at the PoE but it is accessible from Chitipa District Hospital when needed • The ambulance was not fully decontaminated after dropping suspect at Karonga District Hospital	
	Y	**P**	**N**		
Was transport readily available to transfer suspect traveller					
Was the transport used appropriate for transporting suspect traveller					
Was the suspect traveller accompanied by appropriate officials to the Isolation Centre					
Was the transport used appropriately decontaminated after use					

OBJECTIVE 1: TOTAL SCORE					16/21
OBJECTIVE 2: TO TEST AN EBOLA SUSPECT CASE MANAGEMENT AT ISOLATION					
Secondary screening	**Y**	**P**	**N**		**2**
	Tick for each item as Yes(Y), Partial (P) or No(N)				
	Y	**P**	**N**		
Was secondary screening (temperature, history taking) conducted at arrival at the Isolation Centre					
Were details of next of kin addresses of places visited in the last week taken					
Status of Isolation Centre	**Y**	**P**	**N**		**2**
	Tick for each item as Yes(Y), Partial (P) or No(N)				
	Y	**P**	**N**		
Is there a designated isolation centre for Ebola suspects					
Was the isolation unit appropriate for Ebola suspects (location, equipment, condition, safety, security)					
IPC at the Isolation Centre	**Y**	**P**	**N**		**1½**
	Tick for each item as Yes(Y), Partial (P) or No(N)			• Although PPE was available and worn, some staff were observed moving from dirt to clean areas still donned.	
	Y	**P**	**N**		
Was appropriate PPE available in the Isolation Centre					
Did staff handling suspect patient use PPE appropriately					
Case Management	**Y**	**P**	**N**		**2 ½**
	Tick for each item as Yes(Y), Partial (P) or No(N)			• Upon arrival, the suspect was kept in the ambulance for another hour while ETU was being made ready	
	Y	**P**	**N**		
Was the patient admitted into the isolation centre on time					
Was management of symptoms initiated					
Was the patient informed about situation and next steps					
Sample collection and testing	**Y**	**P**	**N**		**2 ½**
	Tick for each item as Yes(Y), Partial (P) or No(N)			• There was no triple packaging materials within the ETU and sample left from ETU for testing	
	Y	**P**	**N**		
Were appropriate samples collected					

Were the sample appropriately packaged for safe transportation (triple packaging)					
Was the case investigation form filled					
Was the chain of custody form (transmittal form/checklist) filled to accompany the samples					
Was transport available to pick the sample within time frame as stated by the laboratory					
Coordination	**Y**	**P**	**N**		**2**
	Tick for each item as Yes(Y), Partial (P) or No(N)				
	Y	**P**	**N**		
Was there communication with the District, National Focal Person on the admission of patient into the Isolation Centre					
Was there communication with the laboratory about collection and transportation of the samples					
OBJECTIVE 2: TOTAL SCORE					**12/16**
OBJECTIVE 3: TO TEST EBOLA SUSPECT CASE MANAGEMENT AT EBOLA TREATMENT UNIT					
IPC in the isolation Centre	**Y**	**P**	**N**		**1 ½**
	Tick for each item as Yes(Y), Partial (P) or No(N)			• Some staff were observed walking with PPE outside of the ETU after admission of suspect	
	Y	**P**	**N**		
Was appropriate PPE available for use during continued case management					
Did staff continue to use PPE appropriately while managing the patient					
OBJECTIVE 3: TOTAL SCORE					**1 ½**
OBJECTIVE 4: TO ASSESS COORDINATION AND INFORMATION FLOW OF EVD POSITIVE RESULTS FROM LABORATORY, DISTRICT AND NATIONAL LEVEL					
Result Communication	**Y**	**P**	**N**		**2**
	Tick for each item as Yes(Y), Partial (P) or No(N)			• Communication was delayed due to network challenges • At attempt was made to communicate with DPH and the phone did not go through	
	Y	**P**	**N**		
Were results communicated to ADHSS					
Did the ADHSS communicate with DEHO and Mbilima Crossing point about positive results					
Did ADHSS communicate with Director Preventative Health (DPH) in writing (detailing case, location, number of probable cases and response plan)					

Coordination	**Y**	**P**	**N**		**1**
	Tick for each item as Yes(Y), Partial (P) or No(N)				
	Y	**P**	**N**		
Did the DC, mobilize and convene the PHEMC					
Was Port Health Tanzania informed about the positive case					
OBJECTIVE 4: TOTAL SCORE					**3**

OBJECTIVE 5: TO ASSESS HOW A POSITIVE EVD CASE IS MANAGED AT EBOLA TREATMENT UNIT

Case Management	**Y**	**P**	**N**		**2 ½**
	Tick for each item as Yes(Y), Partial (P) or No(N)			• There was no proper demarcation in the ETU for suspect and confirmed case • The RRT and Case Management team did not have a psychosocial expert	
	Y	**P**	**N**		
Was the patient transferred to an Ebola Treatment Unit					
Was clinical care initiated					
Was there adequate documentation (results, monitoring tools, clinical notes)					
Was psychosocial support offered to the patient and the guardians					
Surveillance: Was the contact list based on patient information, information from immigration/Mbilima Songwe Crossing point, Isongole & Mbeya (Tanzania) compiled	**Y**	**P**	**N**		**1**
OBJECTIVE 5: TOTAL SCORE					**3 ½**

OBJECTIVE 6: TO ASSESS THE COORDINATION STRUCTURES AND FUNCTIONS AT DISTRICT LEVEL

Coordination	**Y**	**P**	**N**		**1 ½**
	Yes(Y), Partial (P) or No(N)			• Although the meeting was called, it was not multi-sectorial • The SIMEX was stopped while meeting was in progress, some areas were not assessed	
	Y	**P**	**N**		
Was the PHEMC convened within 24 hours of positive results notification					
Were all pillars/sectors represented in the PHEMC meeting					
Was a response plan developed with clear allocation of tasks	**Not Assessed**				
Was an incident manager nominated					
Was there communication with the National Focal Person on the outcomes of the meeting	**Not Assessed**				

Media and Information Management	**Y**	**P**	**N**		**0**
	Yes(Y), Partial (P) or No(N)			• During the 1st emergency meeting, there was no plan communicated on how media will be managed since information on Ebola suspect was already in social media • SIMEX was stopped before information of positive case could be communicated	
	Y	**P**	**N**		
Was media managed appropriately and adequately during the simulation					
Was information disseminated in time to the public following the confirmation of the case	**Not Assessed**				
OBJECTIVE 6: TOTAL SCORE					**1 ½**
GRAND TOTAL SCORE	**59%**				

Section B: General Observations

(Adopted from the World Health Organization Simulation Exercise Evaluation Form

Complete this section considering the entire simulation exercise

N.B. Tick relevant box at right (Y= Yes = 2 Marks; P= Partially = 1 Mark; N= No = 0 Marks)

Area	**Observations**				**Score**
Was the infrastructure, systems, organogram, team(s) (composition and roles and responsibilities) effective for the function/operation being evaluated?	**Y**	**P**	**N**	• The RRT in the district does not include a psychosocial specialist • There is no standby clinical management team for Ebola suspects at Karonga, Chitipa requested to provide human resources for the care of the suspect • There is no system for managing contacts - wife and relative were left to stay outside the ETU • Communication out and into Mbilima Border Post was challenging due to erratic network which delayed response and decision making	**1**
Were there procedure(s) and protocol(s) relevant to the function/operation? Was it/were they effective? Was it/were they followed	**Y**	**P**	**N**	• IPC procedure not properly followed at Isolation Unit Mbilima - some passengers screened at the isolation unit where suspect was held, suspect allowed to move in and out	**1**

				of isolation, suspects not isolated until screened • Procedures on sample collection, packaging and transportation were not available for reference by the Laboratory • No risk communication plan available for border post personnel to follow after identifying suspect case	
Was the coordination and communication between members of the team(s) clear and effective?	**Y**	**P**	**N**	• Inter-agency interaction and coordination between Port Health and Immigration and between the PoE and District team was observed • Interaction between the DRRT members in response once system was activated E.g Nurse, Lab, Clinician, DEHO, IDSR were mobilized • Emergency meeting held within 24 hrs by both Chitipa and Karonga	**2**
Did the actual outcomes match the expected outcomes? Please relate to specific outcomes.	**Y**	**P**	**N**	• The following outcomes not fully achieved • IPC at Isolation and ETU • Case management • Management of contacts • Psychosocial support to suspect and relatives • Coordination due to communication challenges	**1**
GENERAL OBSERVATIONS TOTAL MARKS					**5**

Annex 14: SimEx Participant List

No	Name of Participant	Institution/Organisation	Residential Area	E-mail	WhatsApp Number
1	Lutufyo Kayange	MDF	Area 47/2	lutufyokayange@yahoo.com	0999 448 987
2	Enos Kaudza	MDF	Area 25 C	enoskaudzu@gmail.com	0993 482 003
3	Bishop Benson Chikapa	Karonga	Karonga	bensonchikapa@gmail.com	0993 686 081
4	Gift Kachoka	Malawi Police Services	A/30	kachokagift@gmail.com	0884 451 677
5	H.C.K Gondwe	Chitipa	Chitipa	kalalamukahumphrey@yahoo.com	0888 203 604
6	N.A.B Msowoya	Chitipa OPC	Chitipa	ntchachi@gmail.com	0995 423 812
7	John Minga	Electrician	Karonga	0997 176 531	0997 176 531
8	Chisuwo Laphoid	PHIM- NPHRL	Area 47	lchisuwo@gmail.com	0888 877 680
9	Dr John Chipolombwe	Physician	Mzuzu	jchipolombwe@yahoo.com	0882 676 542
10	Master Chalimba	Malawi Revenue Authority	Chitipa	mchalimba@mra.mw	0888 873 022
11	Aubrey Kawale	Malawi Police Services	Chitipa	Aubreyk9550@gmail.com	0992 308 631
12	Dr Kachepa Upile	Vet Doctor	Lilongwe	kachepaupile@yahoo.com	0994 660 455
13	Dominic Musopole	KDO			0991 462 692
14	Andy c. Kabaghe	Immigration	Lumbadzi		0884 069 887
15	Ernest Moyika	Youth Pvt	Area 23		0993 635 600
16	Wedson Sinkhonde	Chair	Chitipa		0995 480 245
17	Alick F. Banda	PHIM-NPHRL	Area 46	afubanda@gmail.com	0999 386 342
18	Bettie Mukhondiya	MDF	Chilinde 1		0999 473 942
19	Steven Musopole	Agriculture	Chitipa	musopole.steven@gmail.com	0996 289 886
20	Alone Ganizani	MOHP	Lilongwe	amganizani@gmail.com	0999 268 537
21	Chance Kaira	N.I.C.E	Karonga		0997 468 815
22	Dr Amos Nyaka	Society of Medical Doctors	Lilongwe	amosnyaka@gmail.com	0991286 991

23	Umaer Naseer	Norwegian Institute of Public Health	Norway	umaerna@gmail.com	+979538835
24	Emily Macdonald	NIPH	Norway	emacdonald.mw@gmail.com	+9740311342
25	Victor Etuk	CDC Atlanta	A/43	mgq0@cdc.gov	0888 991 033
26	Ephod Kachigwada	DODMA	Kawale 1	ephodkachigwada@gmail.com	0999 670 671
27	Daniel Mandala	DODMA	Area 23	daniel-mandala@undp.org	0999 750 161
28	Samuel Kamanga	TSA	Karonga	Samkamanda99@gmail.com	0888 131 765
29	Dr Annie Mwale	PHIM- Epd	A47	chaumaanie@gmail.com	+61420425802
30	Mtisunge Yelewa	PHIM- Epd	A24	Muttie2009@yahoo.com	0995 436 220
31	Ted Bandawe	CP-DHO	Chitipa	tbandawe@gmail.com	0993 929 197
32	Boniface Grem	PHIM- Epd -Intern	A47	bonifacegrem@gmail.com	0882 613 223
33	Glory Kambwiri	PHIM	A36	kambwiriglory1@gmail.com	0994 843 908
34	Victor Chithabwa	CDHO	Chitipa		
35	Dr Gladson Kamwendo	DAHLD	A25	gladsonkamwendo@yahoo.co.uk	0996 666 114
36	Penjani Phiri	PHIM- IT	A23	penjaniphiri@gmail.com	0999 362 492
37	Brian Mhango	Zone Manager (N)	Karonga		0995 139 068
38	Dominic Manthalu	CHSU	A22 B		0993 091 746
39	Rose Mwafongo	CHSU	Chisapo		0888 691 181
40	Tusambe Mwalilino	KDHO	Karonga	Tusambe mwalilino@yahoo.com	0999 361 763
41	Chisomo Phethi	MOH/KADHO	Karonga		0888 676 167
42	Towera Ng”oma	ONSE	Karonga	tngoma@onsehealth.org	0992 599 043
43	Isaac Sangweni	Self Help Africa	Karonga	Isaac.sangwani@selfhelpafrica.com	0999 911 944
44	Chilufya Kaponda	Red Cross	Karonga	Chilufyakaponda33@gmail.com	0880 866 337
45	Victor Nthakomwa	CISP	Karonga	victornthakomwa@gmail.com	0995 493 749
46	Richard Kamanga	Fisheries	Karonga		0882 718 526
47	Vincent Shaba	Karonga Diocese	Karonga	viishaba@gmail.com	0998 657 200
48	Gift nyirongo	FOCUS	Karonga	giftnyirongo@gmail.com	0993 793 656

49	Jotham Nyasulu	MOH	Chitipa		0884 628 270
50	Victor Matumbo	CD DHO	Chitipa	victormatumbo@gmail.com	0886 352 237
51	Sam Chirwa	DHO	Chitipa	Samchirwa3@gmail.com	0999 263 287
52	Chrispin Chikakula	KADSWO	Karonga	cchikakula@gmail.com	0881040879
53	Jonathan Ndovi	KDH	Karonga		0884 443 053
54	Aggrey Mwangolera	KDH	Karonga		
55	Macdonald Kamwela	KDH	Karonga	macdonaldkamwera@yahoo.com	0888 539 446
56	Voster Msutu	KDH	Karonga	vostermsutu@gmail.com	0888 548 028
57	Reuben Majidu	MOH	Karonga	reubenmajidu57@gmail.com	0996 615 430
58	Martin Mkandawire	KDC	Karonga	martinmkandawire@gmail.com	0999 552 305
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