

# Ebola on our doorstep: Ebola Virus Disease preparedness in South Sudan

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## INTRODUCTION

No disease invokes fear and panic globally like Ebola Virus Disease (previously known as the Ebola Haemorrhagic Fever). Ebola Virus Disease (EVD) is a severe febrile illness which causes death in 25–90% of all the clinically ill, and is caused by the Ebola virus, a member of the Filoviridae family. Five species of Ebola virus (Zaire, Sudan, Bundibugyo, Reston and Tai Forest) constitute the genus Ebola virus. The Bundibugyo, Zaire, and Sudan Ebola virus species cause severe EVD outbreaks in humans. Fruit bats of the Pteropodidae family are considered to be the natural host of the Ebola virus [1]. Epidemics of EVD are thought to begin when an individual becomes infected through contact with the meat or body fluids of an infected animal. Once the patient becomes ill or dies, the virus spreads to others who come into direct contact. Person-to-person transmission occurs through direct contact with the blood, body fluids, or skin of patients with EVD, including those who have died. Laboratory diagnosis is essential to confirm EVD cases [2]. Over the last two decades, Ebola virus disease outbreaks have become more frequent [3]. The unprecedented 2014 outbreak in Guinea, Liberia and Sierra that infected over 28,616 people and killed over 11,000 [4] disrupted the entire health systems and almost resulted in a total economic collapse was a stark reminder of the devastation that EVD outbreaks can cause. It also emphasized the need for countries to take proactive preparedness actions whenever there is an outbreak in a neighbouring country.

## RISK ASSESSMENT OF EVD SPREAD TO SOUTH SUDAN

The risk assessment of EVD spreading from the epicentre in Ituri province in the Democratic Republic of Congo (DRC) to South Sudan was jointly done by the Ministry of Health (MoH) in DRC with the three levels of the World Health Organization (WHO) and employed the methodology in the WHO guidelines for the risk assessment of acute public health events [5]. Based on the initial hazard, context and exposure assessments which considered the porous border of the two countries, the high trade and population movement, the presence of refugees and IDPs along the border areas, the weak and

fragile health systems in the region and the similarities in culture, flora and fauna the level of risk was placed at 'high' (similar to that of neighbouring countries like Uganda and Rwanda). On 28th September 2018 the level of risk was raised to 'very high' [6] as the outbreak in DRC evolved and was compounded by insecurity that saw interruptions in control measures resulting in a number of contacts being missed and new cases being identified that were not known contacts.

South Sudan has previously experienced three EVD outbreaks in 1976 [7], 1979 [8] and 2004 [9] and all these were due to Ebola Sudan species and were not linked to cross-border transmission. Therefore, given the presence of the reservoirs (fruit eating bats) in the greater Equatoria region, it is possible that a sporadic outbreak can happen, and so the country is always at risk.

## BASELINE ASSESSMENT USING WHO CONSOLIDATED PREPAREDNESS CHECKLIST

When the EVD outbreak was declared in the DRC, the MoH used the WHO Consolidated EVD Preparedness Checklist [10] to establish the status of preparedness at the national level as well as to inform the development of a comprehensive contingency plan. The assessment also took into consideration the gaps identified in the Joint External Evaluation (JEE) of the International Health Regulation Core capacities in October 2017 [11]. The assessment revealed serious gaps in Coordination, Risk Communication, Rapid Response teams, Laboratory, Case Management and Infection Prevention and Control, Safe and Dignified Burial and Logistics. Consequently, these thematic areas were earmarked for immediate intervention in order to scale up the capacity to respond given that the DRC outbreak was spreading.

## PREPAREDNESS ACTIONS BY THEMATIC AREAS

### Leadership and Coordination

The MoH and WHO fast-tracked the operationalization of the first ever Public Health Emergency Operations Centre (PHEOC) to act as the central coordinating body for the EVD preparedness activities. Given the level of

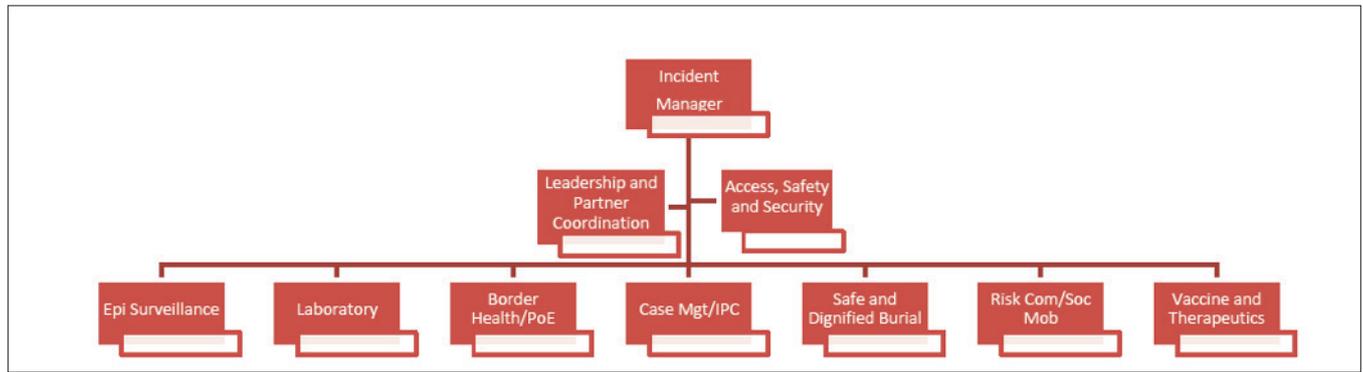


Figure 1: Organogram of the National Task Force (NTF)

risk of EVD spreading to South Sudan from DRC the PHEOC was upgraded from a “Watch Mode” to an “Alert mode”, and the National EVD Taskforce (NTF) chaired by an Incident Manager and all key Technical working groups were activated (Figure 1). State level taskforces were activated in the high-risk states of Yei River, Gbudue, Torit, Maridi, Tambura and Jubek. The NTF guided the development of a contingency plan as well as an EVD preparedness operational plan and the updating of all the standard operation procedures (SOPs) for all the Technical areas of an EVD response. Over 20 Meetings of the NTF have so far been conducted, some of which have been chaired by the Honourable Minister of Health, Dr Riak Gai Gok. Six strategic areas of preparedness were identified as shown in Figure 1: The NTF has also mobilized donors to pledge towards the USD 11 million EVD preparedness operational Plan. These funds will be channelled to the different UN agencies and partners supporting different technical areas of the preparedness. So far over USD 2 million have been received by different partners to support the preparedness efforts.

**Access, Security and Safety**

The fact that the second wave of EVD cases in Beni, DRC has been driven by insecurity and access impediment prompted the NTF to focus on access, safety and security. High-level engagement in conflict-affected areas with armed groups enabled the establishment of screening points in parts of Yei River State such as Kaya and Okaba.

**Risk Communication and Social Mobilization**

Communities’ perception of the risk of EVD as well as their acceptance of prevention and control measures is vital for any preparedness and control efforts. The MoH with support from UNICEF, WHO and other partners has rolled out different risk communication and community engagement strategies. High-level advocacy visits led by the National Minister of Health was made to all the priority states; mass media messaging, community meetings and Information, Education and Communication (IEC) materials have been updated and disseminated. The community has been supportive and

has been calling the hotline to seek for more information or to report suspected cases or deaths. This needs to be sustained through continuous engagement and regular, accurate communication.

**Epidemiology, Surveillance and Laboratory**

- An Alert desk was created at the National Public Health Emergency Operations Centre with a toll-free hotline; this has received over 1200 calls of which three have been suspected Ebola cases - that were investigated and tested negative.
- To improve case detection and investigations, standard case definitions have been distributed across the country and Rapid Response teams are undergoing training and receiving mentorship from experts (WHO, Centers for Disease Control and other partners) on case investigation and contact tracing.
- At the National Public Health Laboratory over 20 laboratory personnel were trained on Biosafety and Biosecurity for management of infectious samples as well as EVD molecular testing using Genxpert Technology. This enabled the country to conduct its first in-country EVD Diagnostic test in October [12].

**Points of Entry**

- Over 39 Points of Entry have been mapped for establishing screening points, of which 14 have been prioritized in the high-risk states of Yei River, Gbudue, Tambura, and Torit - all these are currently operational. The Juba International Airport screening point has been upgraded to meet the requirements under the International Health Regulations 2005; Nimule ground crossing screening, which is the busiest in the country with over 4,000 travellers per day, is also being upgraded. Over 300,000 travellers have been screened in all 14 sites with 13 alert cases picked but none met suspected case definitions.

**CASE MANAGEMENT AND INFECTION PREVENTION AND CONTROL**

- Prompt isolation of suspected Ebola cases and the early

initiation of support treatment is a Key Pillar of Ebola response that reduces EVD transmission and increases the chances of survival for those infected. Using the WHO Consolidated EVD preparedness checklists, the MoH noted that there were no isolation facilities in the country and the level of infection prevention and control in most health facilities was sub-optimal. The amount of information given to health care workers increases their understanding of EVD and their engagement in training<sup>[13]</sup>. Therefore the MoH conducted orientation sessions to frontline healthcare workers in the early phases of the DRC outbreak, and training in 10 priority sites on comprehensive case management and infection prevention between October and November 2017.

- Construction of 10 isolation sites in Jubek, Yei River, Gbudue, Torit and Tambura states has been prioritized by the National taskforce with support from the donors.
- Safe and dignified burial teams were identified in Juba, Yei and Yambio and are undergoing training.

### Vaccines and Therapeutics

The latest tool for the control of an EVD outbreak is the recombinant vascular stomatitis virus (rVSV) vaccine against Ebola Zaire (ZEBOV). This vaccine, although not yet licensed, has been reported to be safe with high efficacy<sup>[14]</sup>. It is being used in DRC for the response, and in Uganda among the frontline health workers as a risk mitigation. The Vaccine and Therapeutics working group has initiated the process of obtaining ethical clearance for the compassionate use of the vaccine among frontline health workers. Once this is obtained, WHO and other partners will support the vaccination of health workers as per the approved protocol.

### CONCLUSION

South Sudan will remain at risk of EVD outbreaks for the foreseeable future. Therefore, it is important that relevant capacity to detect, investigate, respond and contain any outbreak at source is developed as required under International Health Regulations (2005). The country has not yet attained operational readiness, however significant progress has been made by the MoH and partners. Given the history and context of the Health System in South Sudan there is a need for more support to ensure that the required level of readiness for any EVD outbreak is attained.

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