

Provide maternal and child services during Ebola outbreak in Sierra Leone

DOCTORS WITH AFRICA CUAMM IN SIERRA LEONE

Doctors with Africa CUAMM has been active in Sierra Leone since 2012, operating in Pujehun District, in the country's southernmost province, among the other districts. With a population of about 385,000, the district has one of the lowest population densities in Sierra Leone. Most of its inhabitants live in villages with fewer than 2,000 people. There is only one district hospital in the entire district, which includes a main hospital and a maternity complex. There are also 77 peripheral health units, five of which provide basic emergency obstetrics care (BEmOC).

THE EBOLA OUTBREAK: THE IMPACT ON HEALTH SERVICES

During the period 2014-2016, more than 11,310 people had died from the **Ebola Virus Disease (EVD)** outbreak in West Africa. Sierra Leone had the highest rate of confirmed cases, 8,704, including 3,589 deaths (WHO 2016).¹ These deaths took place in a country with one of the world's highest infant and maternal mortality rates: in 2014, infant mortality was 182 deaths per 1,000 live births and maternal mortality was 1,360 deaths per 100,000 live births. Due to the direct and indirect consequences of the health service interruptions related to the outbreak, under-5 mortality increased by more than 20% in 2014 (WHO Health Statistics 2015). Maternal health was also severely impacted, with more than 300 Ebola-related maternal deaths in addition to 1,781 non-Ebola related maternal deaths, for a 19% increase in maternal mortality (WHO 2015).

During the Ebola crisis, the population's trust in the national health system declined, leading to an **overall reduction in the use of health services**, including reproductive, maternal and child services. Underlying factors for the decrease included fear of infection, for both healthcare workers and patients, the fragility of the health systems, the reduced numbers of available health personnel and the death of healthcare workers due to EVD. It has been estimated that 30% of health workers who died of EVD were maternal and child health (MCH) care providers.

The first case of Ebola in **Pujehun District** was reported in July 2014. On January 10th, 2015, the district was the first to be declared Ebola-free by local authorities after 49 cases and a case fatality rate of 85.7%.



THE STRATEGY: A MULTI-LEVEL APPROACH

At the beginning of the Ebola epidemic, many expatriate healthcare workers in NGOs left Sierra Leone, negatively affecting care delivery and staff morale. On the contrary, Doctors with Africa CUAMM, together with other international organizations in the field, guaranteed a **continued presence** in the country, particularly in Pujehun District. This decision helped to ensure the continuity of maternal and infant health care and the access to health care services for the population. Moreover, the acceptance of the professional risks by both national and international staff may have contributed to maintaining an attitude of 'normality' in an extremely stressful environment, probably explaining the **population's positive receptiveness** towards the health services.

During the EVD epidemic, the predominantly vertical focus on outbreak control was associated with failures in providing effective care for routine health needs. In contrast, the approach implemented in the Pujehun district was not based on 'humanitarian response to health emergencies with a short half-life'. Rather, it worked on **strengthening all the components of the health system** – governance, human resources, community involvement – before, during and after the epidemic. A rapid response to the crisis by the local health authorities was implemented adopting public health measures. The activities were mainly concentrated on

¹ World Health Organization, Ebola response roadmap. Situation reports. 2018 <http://www.who.int/csr/disease/ebola/situationreports/archive/en/> (Accessed Mar 2019).

keeping the health service open and properly **functioning** in order to reduce the collateral effects of the epidemic on routine health services. No health units in the Pujehun district were closed during the epidemic. An essential role was played by a combination of **detection** and **isolation of cases** with **contact tracing**, strengthening the implementation of infection prevention and control (IPC) measures.

Measures to **empower community leaders** and use culturally appropriate methods of communication helped to dispel community mistrust in the health services. Local community leaders and religious leaders were involved to **raise awareness** on the importance of giving birth in health facilities, as well as to inform the population that the service was free of charge, reassuring that the transport by ambulances carried no risk of Ebola infection. The increase in complicated cases treated at the hospital did not translate into an increase in maternal and paediatric deaths, reflecting positively on the quality of care provided.²

WHAT PLAYED A KEY ROLE?

The EVD outbreak in Pujehun District is considered a nearly unique example of a successfully contained outbreak in a rural and geographically isolated district. Effective containment of EVD in the Pujehun is primarily ascribable to early response and intervention measures. In particular, the **isolation of cases** and **contact tracing** played a strategic role in tackle the epidemic in the District. The prompt and active management of the Ebola emergency in real time reduced the spread of infection and the impact of the disease on routine care for mothers and children. All these actions strongly depend on preparedness (such as rapid medical supplies and organization of contact investigation procedures), population awareness, and compliance with intervention policies. Overall, a timely and aggressive activation of countermeasures appears to be decisive in the prevention of EVD outbreak scale-up to national or international level.³

BEYOND THE EMERGENCY: THE VITAL IMPORTANCE OF THE REFERRAL SYSTEM

According to a study conducted before, during and after Ebola⁴, in the post-Ebola period, there was a significant increase in the volumes of activities: paediatric and maternal admissions, MDOC cases, deliveries and C-sections. This increase can be directly linked to the reorganisation of the referral system (RS) immediately after the epidemic. Special attention in fact was given to **strengthen the referral system**. Based on the three delays theory, in Pujehun it was decided to **tackle the second delay**, a lack of accessibility to health services (See Figure 2). The distance to the hospital as well as lack of accessible and affordable vehicles were recognised as significant barriers to access CEmONC services at the hospital. The success of the RS service can be linked to the integration of: (1) a transport system careful to the specific geographical characteristics of the district; (2) an effective communication system with a call centre in contact with all PHUs of the district, the ambulance drivers and the hospital; (3) training of all the PHU staff on the recognition of obstetric emergencies and



Figure 1

on the RS. The increase in the volume of the activities was such as to result in a further expansion and strengthening of the referral system, leading to the development of **the National Emergency Medical Service (NEMS)**, a network of ambulances coordinated to provide emergency aid and medical assistance in the prehospital setting involving personnel trained in rescue, stabilization and transportation of traumatic and medical emergencies.

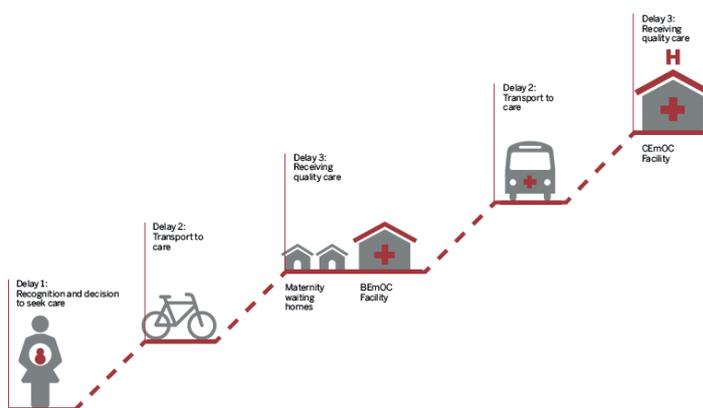


Figure 2

LESSONS LEARNED

The successfully contained EVD outbreak in Pujehun District leads to a few considerations:

- An early and timely response is necessary to tackle an epidemic, adopting a holistic context-related approach and culturally appropriate measures;
- Cooperation with local authorities, civil society and other organizations present is crucial;
- It is fundamental to address all aspects of healthcare to reduce the negative impact on health services, particularly the maternal and neonatal care, and maintain a population's acceptance towards them;
- It is essential to promote a long-term development approach in order to strengthen the resilience of the local health system.

2 Quaglio G, Pizzol D, Bome D, et al. Maintaining maternal and child health services during the ebola outbreak: experience from Pujehun, Sierra Leone. PLoS Curr 2016.

3 Ajelli M, Parlamento S, Bome D, Kebbi A, Atzori A, Frasson C, Putoto G, Carraro D, Merler S. The 2014 Ebola virus disease outbreak in Pujehun,

Sierra Leone: epidemiology and impact of interventions. BMC Med. 2015;13:281. doi: 10.1186/s12916-015-0524-z.

4 Quaglio G, Tognon F, Finos L, et al. Impact of Ebola outbreak on reproductive health services in a rural district of Sierra Leone: a prospective observational study. BMJ Open 2019;9:e029093. doi:10.1136/bmjopen-2019-029093