

## Strengthening the maternal and child health responses to Ebola outbreaks in Uganda



Uganda was declared Ebola free on Jan 11, 2023.<sup>1</sup> Although Uganda had successfully dealt with previous outbreaks of Ebola virus disease, this outbreak was of particular concern due to several factors,<sup>2</sup> such as the causative strain, the Sudan strain, having limited therapeutic and vaccine options, that the epidemic started in a district on a major transport link, and that the start of the outbreak occurred during a time in which Uganda was still recovering from the shock of COVID-19.<sup>2</sup> Having recently commented on the negative effects of COVID-19 on maternal and child services in Uganda,<sup>3</sup> reflections on the response to the most recent outbreak of Ebola and its interplay with maternal, neonatal, and child health (MNCH) might facilitate appropriate preparation for possible future outbreaks.

Although potentially a necessary measure to control the Ebola outbreak, the looming threat of a nationwide lockdown led to understandable concerns, considering the long-lasting effects seen following COVID-19. During the Ugandan lockdown in response to COVID-19, we described an increase in the rate of infants with low birthweight, stillbirths, and preterm births due to the closure of antenatal care, mother-to-child transmission of HIV preventative care, routine vaccination services, and sexual and reproductive health services.<sup>3</sup> The indirect effects of measures taken to deal with a disease outbreak of major concern need to be considered for MNCH services; however, these effects must be balanced with the requirement for necessary infection control measures and the mitigation of the risk of hospitals being overwhelmed and overcrowded by a rise in Ebola cases. Given that this was the largest outbreak of Ebola virus with the Sudan strain to date, it would be valuable to reflect on how to improve continuing care of these often-neglected sections of society during outbreaks of Ebola virus disease.

Along with strengthening existing health-care structures, we must consider how Ebola Treatment Units can better serve pregnant women and children. With a birth rate of 37 per 1000 people in Uganda,<sup>4</sup> it was inevitable that there were both confirmed and suspected cases of Ebola in pregnant people. Ebola Treatment Units are effective at limiting infection

spread between patients, health-care workers, and the community; however, the services of care to mother and child remain an area where improvement is needed.

The ability to perform safe delivery of care to mothers and children needs to be integrated into any design of an Ebola Treatment Unit. Differentiating symptoms such as vaginal bleeding from obstetric complications (eg, placental abruption) with suspected symptoms of Ebola is challenging.<sup>5</sup> The overlap of symptoms of Ebola and those of placental abruption, bleeding from placenta previa, ectopic pregnancy, and septic abortion, leads to difficulties using a symptom-based strategy to screen pregnant women for Ebola.<sup>5</sup> These difficulties in turn cause issues with infection prevention and control and also create unnecessary obstacles to obstetric treatment if the screening tools are used inappropriately. Improving access to diagnostics so that pregnant women can either be diagnosed with Ebola or have infection control measures de-escalated appropriately and promptly would help to address this challenge. Additionally, appropriate counselling should be given to pregnant mothers about the high risk of loss of pregnancy if diagnosed with Ebola and they should be closely followed up with a detailed plan for delivery or potential complications.

There were three pregnant women and one stillborn with confirmed Ebola in the recent outbreak in Uganda.<sup>6</sup> Therefore, supporting existing maternal health centres with appropriate personal protective equipment and infection control procedures to cope with pregnant women and children presenting away from treatment centres must form an essential part of any future outbreak response.

With 28 child cases and 12 child deaths caused by Ebola, as of December, 2022, it is critical to consider how the facilities that deliver care to children can be improved.<sup>7</sup> Ebola Treatment Units remain a setting that is not safe or comforting for children and there are added difficulties due to the necessary restriction of caregivers entering treatment units. Adaptations to the structure and exploring the safety of making use of survivors as caregivers to assist with child care might help to address this deficit.



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Additionally, closing the gap in the research of safety and efficacy data of investigational therapeutics and vaccines for pregnant women is essential for us to make substantial steps forward in their management during an outbreak of Ebola. Fortunately, due to reassuring progress in 2019, the Strategic Advisory Group of Experts had recommended the inclusion of pregnant women in research studies that used the rVSV-ZEBOV-GP vaccine.<sup>8</sup> This recommendation in turn contributed to the wide acceptance of inclusion of pregnant women in the protocol for the most recent vaccination cluster randomised controlled trial.

Finally, with the Ugandan outbreak formally over, attention must remain on pregnant women and children in the form of psycho-social support and community engagement in returning and reintegrating back into their homes. Although efforts should be made to protect women, it is also wise to harness the influence that women have in communities. In Uganda, women's mothers have been found to be an important source of information about antenatal care.<sup>9</sup> The role of women as informants within their community is often underused in Ebola outbreaks, where their involvement could potentially help strengthen response mechanisms.<sup>10</sup>

It is critical to keep pregnant women and children in the picture when planning any response. In this period of the outbreak ending, we need to address the difficulties in diagnosis within these groups and the challenges of giving safe obstetric and paediatric and neonatal care in Ebola Treatment Units as part of outbreak preparedness. We also advocate for a prioritisation of holistic MNCH care during future outbreaks to ensure that the gains made towards the sustainable development goals are not further jeopardised.

We declare no competing interests.

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