Using a Cluster Grid Approach to Strengthen Water, Sanitation, and Hygiene (WASH) and Infection prevention to Control the Cholera outbreak in Uganda

ABSTRACT

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Introduction:

Cholera disproportionately affects vulnerable populations, with outbreaks occurring in locations with limited access to clean water, adequate sanitation, and hygiene resources. Uganda experiences cholera outbreaks almost yearly, with the most recent July-August 2023 outbreak in the central and eastern regions registering over 30 confirmed cases and 5 deaths. Under climate change, cholera outbreaks are anticipated to increase especially during the rainy season, straining Uganda's healthcare system.

Objective:

To control the transmission of cholera and prepare health facilities (HFs) to manage cholera cases, we implemented multimodal IPC/WASH interventions within affected communities and their respective health facilities.

Methods:

Between July and August 2023, we deployed a cluster grid approach which delivered WASH and IPC interventions to health facilities (HFs) and communities in the five most affected sub-counties. We conducted WASH-IPC assessments using the Ministry of health (MoH) scorecard at 31 high risk health facilities.

At the facility level, interventions focused on closing the gaps identified from the assessments and included mentorship and training of health workers (n=325) to improve hand hygiene, environmental cleaning, disinfection, and waste elimination practices.

As part of the multi-modal approach, we also provided WASH/IPC supplies to further improve these practices. WASH/IPC assessments were repeated after interventions, and we compared findings from HF assessments using a paired t-test.

At the community level, interventions included hand hygiene promotion at households within the case clustered villages. To further curb the transmission in the affected communities, we sensitized 500 community members at highly trafficked community sites such as fishing and markets.

Results:

At baseline, the mean WASH/IPC score at HFs was 45% (Standard deviation (SD)=17.73), which improved to 72% (SD9.9; $p<0.05$) following the intervention, with an average improvement of 26% f. Hand hygiene scores, greatly improved with a mean difference of 76% while waste management remained low. At the household level, access to sanitation facilities remained low, with only 30% of households in the affected districts having sanitation facilities in the district toilet/latrine survey.

Conclusion/Relevance to WASH Sector Trends:

Given the improved WASH/IPC practices at HFs and absence of secondary transmission to other sub countries, the cluster grid approach presented shows promise for use in future cholera outbreaks in similar settings. Given the anticipated increase in cholera outbreaks due to climate change, and the ongoing shortage of cholera vaccines, interventions that address root causes of the outbreaks such as poor WASH conditions are increasingly important.