





Critical failings in humanitarian response: a cholera outbreak in Kumer Refugee Camp, Ethiopia, 2023

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INTRODUCTION

Cholera is an acute watery diarrhoeal disease caused by toxins from O1 and O139 serogroups of the bacteria *vibrio cholerae*.¹ It causes an estimated 29 000–143 000 deaths each year worldwide.¹ A national outbreak of cholera has been ongoing in Ethiopia since August 2022.² In July 2023, a large point-source outbreak occurred in West Gondar, Ethiopia, involving over 2300 cases.³

In response to the conflict in Sudan, commencing in April 2023, thousands of refugees and Ethiopian returnees have crossed the border into West Gondar.⁴ Kumer Refugee Camp (KRC) was established 70 km from the Sudan border, and primarily hosts Sudanese refugees, but also Eritrean, South Sudanese and other nationals who were present in Sudan at the time of the conflict. Official figures estimate the population of KRC at 9383.⁵ At the Point of Entry (PoE) in Metema, approximately 3000 refugees and asylum seekers wait for days or weeks in the open air for transport to KRC, and 6 km from the PoE there is a small permanent camp of 2400 refugees, originally a transit camp.

A cholera outbreak began in KRC on 24 August 2023 and was culture confirmed on 30 August 2023. The Ministry of Health led the response through its emergency operations centre. A Médecins Sans Frontières cholera team was deployed to KRC on 28 August 2023 to respond in case management, in close collaboration with the Regional Health Bureau (RHB). A total of 470 cases were treated from 24 August to 19 September (figure 1), with a case fatality rate of 1.7% (n=8).

SUMMARY BOX

- ⇒ A cholera outbreak was confirmed in Kumer Refugee Camp, Amhara Region, Ethiopia, on 24 August 2023. In total, 470 cases were treated between 24 August and 19 September 2023.
- ⇒ The water, sanitation and hygiene, health and nutrition conditions of the camp all fell short of Sphere guideline minimum standards.
- ⇒ This represents a failure of the humanitarian response and is likely to be common across Ethiopia's refugee camps due to influxes of refugees adding pressure to already stretched response capacities.
- ⇒ Funding gaps in refugee response must be addressed.

Cholera outbreak management

Effective cholera outbreak response requires a multisectoral approach to reduce mortality and transmission. This includes early detection and treatment of cases through active case finding and proper case management through the establishment of cholera treatment centres (CTCs), ensuring an adequate supply of safe water, and improved sanitation and hygiene by providing latrines, hand-washing points and soap.⁶ Additionally, risk communication and community engagement (RCCE) are necessary to educate and involve the community in prevention and control measures.⁶ Finally, vaccination with oral cholera vaccine (OCV) can play a role.⁶

Cholera outbreak response complicated by failings in refugee health service provision

Case management and nutrition

Cholera case management began immediately, and construction of a 50-bed CTC was completed by 9 September. A generally accepted benchmark for quality of care in cholera outbreaks is a case fatality rate

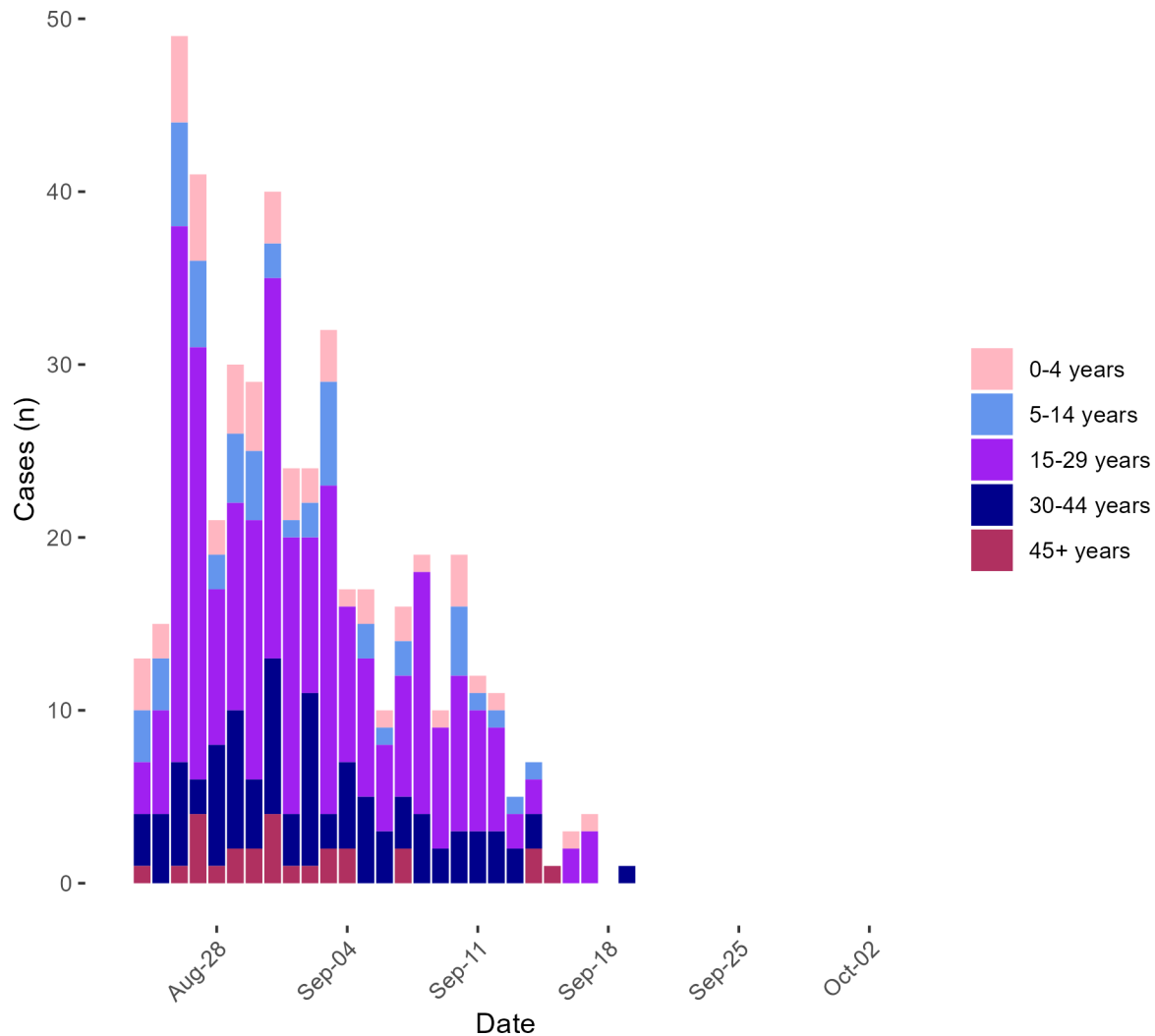


Figure 1 Number of new cases by day and age group, Kumer Refugee Camp, 24 August 2023 to 03 October 2023.

(CFR) < 1%.⁷ The weekly CFR in KRC fell from 4.3% in the first four days of the outbreak, to 0.9% in the third week, and 0% in the fourth week. However, case management was complicated by concurrent malnutrition in cholera patients. This has been documented previously in Nigeria, where the length of stay was associated with the nutritional status of cases.⁸ Two meals per day were provided in KRC, the first at 14:00. No food was distributed from 1–3 and 7–16 October. A comprehensive malnutrition treatment programme was commenced in mid-September in response to the high prevalence of malnutrition, but adequate food must be available to prevent malnutrition.

Health promotion, and water, sanitation and hygiene

A team of community health educators (CHEs) was engaged from the refugee population to provide RCCE activities, including tent-to-tent health promotion messaging and active case finding. Health promotion messages were challenging to implement due to inadequate water, sanitation and hygiene (WASH) in the camp. KRC had only 50 latrines (1 per 200 population), 10 times fewer than the minimum standard of 1 per 20 population

(table 1), and no handwashing points at the latrines. Open defecation was common in fields around the river that flowed through the camp, likely contaminating the river. While not representative, in the week beginning 4 September only 39% of households visited by CHEs had access to soap. Water was supplied by trucking at a capacity of 10L/person/day (minimum standard 15L/person/day (table 1)) and was inconsistently chlorinated, with free residual chlorine ranging from 0 to 1.5 mg/L (minimum standard 0.2–0.5 mg/L at point of delivery, or 0.5–1 mg/L in outbreak settings).⁷ Due to limited output from the source borehole and availability of fuel for trucking, water supply was largely absent between 6–9 September. Refugees collected untreated water from the river, or from host-community wells and hand-pumps for a fee. An increase in cholera cases related to the interruption of water supply was not observed. Effective RCCE likely mitigated the effects of the water and sanitation challenges. Construction of additional semi-permanent latrines, support to increase the output from the source borehole, and distribution of non-food items including soap and mosquito nets began in September.

Table 1 Minimum Sphere standards for food security and nutrition, water, sanitation and hygiene and healthcare with key indicators⁷

Sphere standard	Key indicators
Food security and nutrition	
Food assistance	
The basic nutritional needs of the affected people, including the most vulnerable, are met.	General nutrition requirements: <ul style="list-style-type: none"> ▶ Prevalence of malnutrition among children <5 years. ▶ Percentage of targeted households that receive the minimum food energy requirements (2100 kCal per person per day) and recommended daily micronutrient intake.
Water, sanitation and hygiene	
Water supply	
People have equitable and affordable access to a sufficient quantity of safe water to meet their drinking and domestic needs.	Access and water quality: <ul style="list-style-type: none"> ▶ 15 L of water per person per day. ▶ One water point per 250 people. ▶ Maximum of 30 min wait at the water source.
Water is palatable and of sufficient quality for drinking and cooking, and for personal and domestic hygiene, without causing a risk to health.	Water quality: <ul style="list-style-type: none"> ▶ ≥0.2–0.5 mg/L of free residual chlorine at the point of water delivery. ▶ 0.5–1 mg/L of free residual chlorine at point of water delivery in outbreak settings.
Hygiene promotion	
Appropriate items to support hygiene, health, dignity and well-being are available and used by the affected people.	Identification, access to and use of hygiene items: <ul style="list-style-type: none"> ▶ 250 g of soap per person per month for bathing. ▶ 200 g of soap for laundry per person per month. ▶ Soap and water at a handwashing station (one station per shared toilet or one per household).
Excreta management	
All excreta are safely contained on-site to avoid contamination of the natural, living, learning, working and communal environments.	Environment free from human excreta: <ul style="list-style-type: none"> ▶ There are no human faeces present in the environment in which people live, learn and work.
People have adequate, appropriate and acceptable toilets to allow rapid, safe and secure access at all times.	Access to and number of toilets: <ul style="list-style-type: none"> ▶ Maximum 20 people per toilet.
Health	
Health systems	
People have access to integrated quality healthcare that is safe, effective and patient-centred.	Health service delivery: <ul style="list-style-type: none"> ▶ Percentage of population that can access primary healthcare within 1 hour's walk from dwellings. ▶ Percentage of patients referred* in adequate time. * Emergency referral systems with predetermined, safe and protected transport mechanisms should be available 24 hours a day, 7 days a week.

Vaccination and registration

Cholera is a vaccine-preventable disease, with three WHO prequalified vaccines on the market.⁹ However, due to rising case numbers worldwide and production challenges, there is a global shortage of OCV.¹⁰ In response to the outbreak, a one-dose mass vaccination campaign targeting people aged ≥1 year was carried out from 17–21 September. While two doses offer more effective and long-lasting protection, current protocols recommend only one dose due to the shortages.¹⁰ As such, cholera outbreak risk in KRC will increase substantially once protective antibodies wane within a year.¹⁰ OCV

was also carried out at the PoE and designated transit camp.

Vaccination is a key strategy in the prevention of outbreaks in the refugee camp setting.¹¹ As with cholera vaccination, no routine immunisation against measles was in place for new arrivals in KRC. A mass measles vaccination campaign was carried out in KRC, designated transit camp and PoE between 8–11 October, but routine vaccination of new arrivals is needed.

In 5 days, 6175 people were vaccinated with OCV in KRC based on administrative data. This is well below the official estimated census of 9383. While this may reflect

low coverage achieved by the campaign, many people are reported to have spontaneously returned to Sudan (these data indicating potentially as many as 3000) with the refugee population reporting they prefer the risks of war over the poor conditions of the camp.⁴ The Sudanese town of Gedaref, near Metema, declared a cholera outbreak on 26 September 2023, possibly seeded by Sudanese refugees returning from KRC.¹²

Registration and documentation are key first steps to ensure the protection of refugees and asylum seekers, and individual-level data is required for programme planning, with United Nations High Commissioner for Refugees (UNHCR) guidelines indicating registration should be performed within 3 months.¹³ The true outbreak attack rate and OCV coverage achieved from the mass campaign are unknown, analyses of subpopulations at risk of cholera were unable to be performed, and non-food item distributions were complicated by the absence of population denominators.

Routine healthcare access

UNHCR guidelines for health in camps indicate that one health facility should be available per 10 000 people.¹⁴ The facility should offer primary healthcare, including routine immunisation, non-communicable disease, mental health and reproductive healthcare, and nutrition screening and care.¹⁵ Emergency referral systems should be available with safe and protected transport mechanisms.¹⁵ UNHCR guidelines specify a time frame of <6 months for implementation.¹⁵

Routine primary healthcare was available for the camp residents through a supported RHB health post, and provided by one doctor, with the clinic staffed from approximately 10:00–16:00 each day. In the absence of 24-hour emergency care, life-threatening non-cholera cases, particularly severe malaria, were presenting to the CTC for treatment. This time period coincided with the peak malaria season for the region, and most refugees did not have access to mosquito nets. Amhara region, where KRC is located, has seen an escalation in tension and clashes between government and militia forces since August 2023, with a curfew imposed region-wide, complicating and interrupting service provision. Nevertheless, 24-hour emergency care and referral is required.

Minimum standards for refugee camps

The cholera outbreak in KRC was successfully brought under control in a short time frame, despite the poor water, sanitation, health and nutrition conditions of the camp that complicated the response. Cholera has long posed a threat to refugees, but the development of the Sphere guidelines in 1997, which set minimum standards on WASH, nutrition, health and shelter, has reduced the number and size of outbreaks in refugee camps.¹⁶ With the large cholera outbreak in West Gondar (150 km south of KRC) in July 2023, the outbreak risk in KRC was well known before it occurred. Nevertheless, Sphere's minimum standards for WASH, nutrition and healthcare

had not been met in KRC, with the numbers of latrines and handwashing points, availability of soap, amount and quality of water, quality and quantity of food and access to healthcare all falling short (table 1). A year on from the outbreak, the dire plight of KRC's refugees in terms of access to healthcare, and violence, kidnappings and insecurity, continue to feature in international media.¹⁷

The Global Taskforce on Cholera has set a roadmap to reduce cholera deaths by 90% by 2030, with the implementation of basic WASH services outlined as a cornerstone activity.¹⁸ Refugee populations must not be forgotten in these efforts. All people affected by crisis have a right to receive protection and assistance, ensuring the basic conditions for life with dignity. With the influx of refugees due to the Sudan conflict adding pressure to already stretched refugee response capacity, the conditions seen in KRC are likely to be common across many of Ethiopia's refugee camps. UNHCR has received only 24% of the US\$431.6 million needed to support Ethiopia's 926 471 refugees.¹⁹

CONCLUSION

The cholera outbreak response in KRC faced several complications due to failings in refugee services. As a result, the cholera outbreak team additionally had to manage emergency non-cholera cases in the CTC, provide measles vaccinations, increase borehole output, monitor water quality, build latrines, distribute non-food items and advocate for food distributions. This account demonstrates that effective cholera response is achievable even in challenging contexts but also highlights an ongoing neglected crisis in Ethiopia and a need to address urgent funding gaps to protect these conflict-induced displaced populations.

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