



The challenges of addressing the cholera outbreak in Cameroon

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ABSTRACT

Cholera is an enteric disease caused by the ingestion of food or water contaminated by the toxins of the bacteria - *Vibrio Cholerae*. Its transmission is exacerbated by poor sanitary conditions and poor hygiene practices. Affected individuals may present with severe symptoms such as watery diarrhoea and vomiting that can lead to death within few hours. Cameroon is experiencing its worst cholera outbreak in decades. The outbreak is severest in the South-West and the Littoral regions. As of the time of writing, in six regions of the country, 6652 suspected cases of cholera including 134 deaths (CFR 2%) have been reported and the number is rising. Shortage of safe drinking water and contamination of rivers has exacerbated the outbreak, especially in the rural and hard to reach communities. The *trans*-border movement at the South-West region, defecation in the open and on rivers, and overcrowding at the Littoral region have been particularly challenging towards curbing the outbreak. Despite the challenges, Cameroon's health authorities have been working to bring the situation under control by engaging in community sensitization on good hygiene habits, disinfection of houses and vaccination campaigns. In the light of these, it is recommended that Cameroon should improve and strengthen its vaccination campaign across the country. Adequate health systems should be established at the point of entry to prevent cross-border cholera transmission and retransmission. Access to hard to reach communities should be improved so that vaccines and basic health care and sanitation services such as provision of safe drinking water can be provided.

1. Introduction

Cameroon's health care system is faced with the worst cholera outbreak in decades. Cholera is an acute diarrheal disease caused by the ingestion of food or water contaminated with toxin-producing strains of *Vibrio Cholerae* [1]. The disease has been particularly prevalent in the two most vulnerable continents -Africa and Asia. Its transmission results from poor sanitary practices and conditions such as open defecation, unhygienic food handling and lack of safe drinking water [1]. Cholera can be severe, although people who get sick with the disease often

develop mild or no symptoms. Approximately, 1 in 10 people who get sick with cholera will develop severe symptoms such as watery diarrhoea, vomiting, and leg cramps [2]. Watery diarrhoea and vomiting result to rapid loss of body fluids, and consequently leading to dehydration which without proper treatment can lead to death within few hours. It is estimated that, about 1.3–4 million people around the world get cholera each year and 21,000 to 143,000 people die from the disease [2].

Since 1817, seven cholera pandemics have spread from South and Southeast Asia to the rest of the world [3]. The seventh pandemic landed

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on the shores of Africa 9 years later of which the first cases were reported by Guinea-Bissau and Guinea Conakry. Cholera still remains a significant cause of illness and death in many African countries; and sub-Saharan Africa has reported more cholera cases and cholera related deaths than any other region [4]. It is known that cholera outbreak is not new to Cameroon especially during dry seasons, but the recent outbreak is the worst, ever experienced by the country. Cameroon reported its first case of cholera in 1971 where, it was estimated that over 2000 people contracted the disease; and since then, the country has been experiencing recurrences. With the recent deadly outbreak, Cameroon is on the verge of recording the highest number of cholera cases and deaths since the emergence of the disease in the country.

2. Discussion

The ongoing cases of cholera outbreak in Cameroon were first reported by health authorities on October 29, 2021. Cameroon is among several countries in West and Central Africa experiencing recurrent cholera outbreaks [5]. On February 1, 2022, Cameroon's Ministry of Health confirmed the spread of cholera in the South-West and Littoral regions, after 37 positive cases and five deaths were recorded within 24 h [6]. The outbreak was first observed in the Bakassi peninsula (South-West) with 1100 confirmed cases and 32 deaths as of January 1, 2022 [6]. Since then, the outbreak continues to spread in the country, affecting other regions (Fig. 1). As of April 30, 2022, 6652 suspected cases of cholera including 134 deaths (CFR 2%) have been reported from six regions of the country - the South-West (4617 cases, 77 deaths), Littoral (1704 cases, 51 deaths), South (183 cases, 2 deaths), Central (125 cases, 4 deaths), North (15 cases, no death) and Far North (eight cases, no death) regions [5]. The two most affected regions continue to be the South-West and the Littoral regions, where the former is the most affected followed by the latter.

As the transmission of cholera is attributed to poor sanitary conditions, many related risk factors might have resulted to the ongoing cholera outbreak in Cameroon. Such risk factors may include wide transmission of *Vibrio cholerae* in the country due to open defecation, inadequate safe drinking water in some regions and poor hygiene



Fig. 1. Map of Cameroon showing the 10 regions of the country. Source http://www.researchgate.net/figure/The-Map-of-Cameroon-showing-the-ten-regions_fig2_51171986.

practices such as poor food handling. These factors are very much evident in the South-West region near the Nigerian border as a result of the violent conflict that alters the provision of basic sanitary services, such as water and sanitation, evidently, making it the most affected region. The second most cholera hit region – the Littoral region, hosts 81,298 internally displaced people from South West and North West region of Cameroon [6]. This has led to overcrowding in the Littoral region which may make maintaining sanitary conditions difficult, thereby, providing favourable conditions for the outbreak. The long dry season experienced by Cameroon and other neighbouring African countries has contributed immensely to the cholera outbreak. The shortage of clean drinking water in western towns and villages resulted from the long dry season and the disease is fast spreading because cattle and civilians defecate in the open and in rivers that serve as sources of water for the communities [7].

Considering how fragile the health care system of Cameroon is, as a low-income country; the cholera outbreak may have overburdened it. The health care structures have been overloaded due to the high cholera outbreak. More people continue to get infected and the available health care facilities are inadequate to deliver the best of care to them. For instance, Limbe government hospital in the South-West region which has a capacity of 200 beds, has received more than 240 cholera patients [7] and, the number of patients received in hospitals keep growing on daily basis. This has without doubt, overstretched the capacity of the hospitals and hampered the quality of care rendered.

Controlling the cholera outbreak by Cameroon may be seriously challenging. The most affected South-West region that borders Nigeria and Cameroon can be particularly challenging due to the humanitarian crises and the massive *trans*-border movement in the region. Hard to reach areas are another challenge. Areas with difficult terrains make it difficult to provide the necessary facilities like portable water and decent sanitary conditions and there are situations where feces are found in the rivers where people draw water from Ref. [8] and, this has led to shortage of clean drinking water due to contaminations.

Despite these challenges, the Cameroon health authorities have been trying to bring the situation under control by engaging into community sensitization. The authorities have been visiting homes, disinfecting toilets, public taps and water points and teaching the citizens on environmental and hand hygiene, especially after using latrines [9]. To further bring the outbreak under control, cholera patients in the most hit South-West region were quarantined. Vaccine was also involved in the fight against the cholera outbreak in Cameroon. On March 16, 2022, the country started its cholera vaccination campaign with 800,000 cholera vaccines donated by the World Health Organization [10]. Additional cholera vaccine doses were also approved by Gavi, which were to be delivered to Cameroon. Gavi approved two million doses to tackle the outbreak, and half of these have already been shipped [8]. More than 100,000 people in the South-West Region have so far received the vaccines. Above all, the country is working towards revising its national cholera control plan that will include the conduct of preventive campaigns in the cholera most hit regions [8].

3. Conclusion

The current cholera outbreak in Cameroon is compounded by poor sanitary systems and hygiene with the most impact at the southwestern region that is faced with humanitarian crises and massive *trans*-border movement between Nigeria and Cameroon. This has led to the disruption of basic healthcare and hygiene services. The increasing incidence of the outbreak and its transmission to other regions of the country implies that the current interventions to control and mitigate the outbreak adopted by the Cameroon's health authorities may be inadequate, and therefore need to be strengthened in order to mitigate the impact of the outbreak.

4. Recommendations

In order to prevent cholera transmission, improving access to safe water and good sanitation systems, effective waste management, food safety practices, and hygiene habits are recommended [5]. In addition to public awareness campaigns on the dangers of cholera and its management, reactive vaccination campaigns should also be strengthened across the country. Since the hardest hit southwestern region, shares a border with Nigeria and difficulties in checking people's health status may be encountered due to the massive *trans*-border movements; adequate health systems should be established at the point of entry to prevent cross-border cholera transmission and retransmission. At the second most hit overcrowded Littoral region, basic hygiene facilities and services can be improved to lower the risk of cholera transmissions. Access to hard to reach communities should be improved by the government and humanitarian organisations so that vaccines and basic health care and sanitation services such as provision of safe drinking water can be provided. Defecation in the open and rivers that serve as source of water for the communities should be discouraged. The government may expand its national cholera control plan to include all the regions of the country.

Contribution of authors

Shuaibu Saidu Musa, Kengo Nathan Ezie and Don Eliseo Lucero-Prisno III conceived the idea. Shuaibu Saidu Musa, Kengo Nathan Ezie, Godfred Yawson Scott, Muktar Musa Shallangwa, Adamu Muhammad Ibrahim, Tobi Nifemi Olajide and Muhammad Aisha Hameed collected and analysed the data and information and rotated in writing different versions of the drafts with important intellectual contributions from Don Eliseo Lucero-Prisno III. All authors read and approved the final manuscript.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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