

LETTER TO THE EDITOR

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# Cholera emergency in Nigeria: urgent need for better vaccine access and public health action

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To the Editor,

Since January 2024, Nigeria's public health system has faced a sharp increase in cases and fatalities, due to cholera outbreaks reported in over 35 states (NCDC 2024). Outbreaks of cholera are particularly associated with seasonal flooding, which exposes many Nigerians to cholera risk factors such as lack of water, hygiene, and sanitization, among others (Gulumbe et al. 2023). As of July 21, 2024, the ongoing dilemma has resulted in 4809 suspected cases and claimed 156 lives, usually due to serious dehydration and late presentation (NCDC 2024). This situation is further exacerbated by Nigeria's economic challenges, which limit access to essential services such as clean water, sanitation, and healthcare, thereby indirectly contributing to the continued spread of the disease. In response to the severity of the crisis, authorities have now declared the outbreak a national emergency, underlining the urgent need for effective intervention and support (Obiezu 2024). The World Health Organization and other partners have been crucial in assisting Nigeria's cholera response by providing technical assistance, facilitating vaccine procurement, and supporting control strategies (Nwafor 2024). In light of the escalating cholera crisis in Nigeria,

this letter urgently calls for better vaccine access and public health action.

Cholera, a water- and food-borne disease, is a persistent challenge in Nigeria and across Africa, where it continues to cause outbreaks annually, affecting millions of people (Gulumbe et al. 2023; Obiezu 2024). From 2021 to date, it has resulted in over 140,000 suspected cases and killed 4364 Nigerians (Moshood et al. 2024). Despite multiple efforts to combat cholera, it continues to pose a significant public health challenge in Nigeria every year (Abdulrahim and Adesola 2022).

Oral cholera vaccine (OCV) stands as one of the most effective measures for preventing cholera, especially in endemic regions (Global Task Force on Cholera Control 2021). These vaccines include Dukoral<sup>®</sup>, Shanchol<sup>™</sup>, and Euvichol<sup>®</sup>. Dukoral<sup>®</sup> primarily protects against cholera caused by *Vibrio cholerae* O1 and also offers protection against enterotoxigenic *Escherichia coli* (ETEC), showing approximately 85% efficacy against cholera (Kabir 2014). However, its effectiveness is lower in younger children, and it provides substantial protection for up to 2 years (Kabir 2014). Shanchol<sup>™</sup> and Euvichol<sup>®</sup> are both effective against *Vibrio cholerae* O1 and O139 serogroups. They have an efficacy of approximately 65% and provide protection for up to 5 years, making them suitable for use in cholera-endemic regions (Baik et al. 2015; Shaikh et al. 2020). Dukoral<sup>®</sup> is particularly suitable for travelers due to its additional protection against ETEC, while Shanchol<sup>™</sup> and Euvichol<sup>®</sup> are ideal for longer-term protection in endemic regions.

The use of OCV for outbreak containment in Nigeria is not new; for example, an OCV preventive campaign was exercised to control outbreaks in Borno, Yobe,

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Adamawa, Jigawa, Zamfara, and Kebbi, respectively, between November 2018 and September 2019, which also extended to November 2021 (Global Task Force on Cholera Control 2021). Since then, OCV has been a vital element in cholera mitigation and management in Nigeria (Global Task Force on Cholera Control 2021). However, as stated by the Nigeria Centre for Disease Control director general, the country is experiencing a shortage of OCV, though the health minister has requested assistance from donor partners (Moshood et al. 2024).

There is a need to plan ahead by securing and making vaccines readily accessible, especially to the cholera epicenters in Nigeria, as well as strengthening preventive measures that have been shown to be productive, such as optimizing surveillance, improved access water sanitation and hygiene facilities, managing flood risks, and promoting disease awareness. Similarly, the global demand for OCV is greater than the produced and available doses (Moshood et al. 2024). As Nigeria anticipates support for cholera vaccines soon, they should also plan and execute epidemiological interventions, such as the Global Task Force on Cholera Control hotspot mapping tool employed to contain outbreaks in 2018, 2019, and 2021 in cholera epicenters in Nigeria (Global Task Force on Cholera Control 2021). This mapping should include both urban centers and rural communities to ensure that vaccines are deployed where they are most needed, targeting specific states, local governments, or wards with the highest vulnerability to cholera outbreaks. Mapping high-risk areas for cholera is crucial in guiding the efficient distribution of vaccines and resources in both urban and rural settings. Using tools like geographic information systems can help to identify high-incidence zones, public health officials can prioritize vaccine distribution and resource allocation in areas with the highest vulnerability (Salubi and Elliott 2021). This approach is crucial for targeting densely populated urban centers with poor sanitation as well as remote rural communities with limited access to healthcare and clean water. Continuous monitoring and updating of risk maps will allow for adaptive health strategies, ensuring that interventions remain effective and resources are directed to the most critical areas. Furthermore, international cooperation is also essential in securing adequate vaccine doses, enabling Nigeria to collaborate with global health organizations, donor countries, and vaccine manufacturers. This collective effort not only addresses immediate public health crises but also bolsters long-term preparedness and resilience against future outbreaks.

## Conclusions

The ongoing cholera crisis in Nigeria, compounded by a critical shortage of vaccines, requires urgent and coordinated action from all stakeholders. The scarcity of vaccines underlines the need for immediate international cooperation to secure and distribute these life-saving resources where they are most needed. Adopting strategic partnerships and focusing on effective distribution allows us to address the current emergency and build resilience against future outbreaks. Now is the time to act decisively to prevent further devastation and strengthen public health defenses.

## Abbreviations

|      |   |
|------|---|
| OCV  | Oral cholera vaccine                    |
| ETEC | Enterotoxigenic <i>Escherichia coli</i> |

## Acknowledgements

Not applicable.

## Author contributions

AA conceived the idea and participated in manuscript writing, review, and editing. MNI and BHG participated in manuscript writing, review, and editing. All authors read and approved the final manuscript.

## Funding

Not applicable.

## Availability of data and materials

Not applicable.

## Declarations

## Ethics approval and consent to participate

Not applicable.

## Consent for publication

Not applicable.

## Competing interests

The authors declare no conflict of interest.

Received: 10 July 2024 Accepted: 29 August 2024

Published online: 03 September 2024

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