Editorial

Addressing Cholera Outbreaks in Zambia: A Call for a Social Ecological Approach

Authors: *Josphat Bwembya[1]; Doreen M. Shempela[1]; Roma Chilengi[1]*

Affiliations: [1]Zambia National Public Health Institute, Lusaka, Zambia

Corresponding author: *Josphatbwembya@gmail.com*

Cite this Article: *Bwembya, J., Shempela, D.M and Chilengi, R. (2025). Addressing Cholera Outbreaks in Zambia: A Call for a Social Ecological Approach. The Health Press 09(3): 4-6.*

Introduction

Cholera continues to pose a significant public health threat across Africa, driving outbreaks that result in avoidable illness and death. Globally, an estimated 2.8 million cases and 95,000 deaths occur annually [1], with Africa carrying the greatest burden: 82% of cases and 94% of deaths [2]. Between January and August 2025 alone, 213,586 cases and 4,507 deaths were recorded across 23 African Union (AU) Member States [3]. Projections for the upcoming rainy season (September 2025–February 2026) predict more than 200,000 additional cases and 6,020 deaths, representing a 42% increase in cases and nearly double the number of deaths compared to 2024, if current efforts remain unchanged [2].

In response to this growing crisis, the Africa Centre for Disease Control and Prevention (Africa CDC) and the World Health Organization (WHO) launched a six-month continental cholera response plan on August 26, 2025, in Lusaka, Zambia. This initiative, endorsed by African Union (AU) Cholera Champion President Hakainde Hichilema, aims to accelerate progress toward eliminating cholera by 2030. The plan prioritizes seven key areas: coordination, surveillance, laboratory capacity, case management, WASH (water, sanitation, and hygiene) interventions, vaccination, and community engagement [2,3]. President Hichilema's leadership reflects the strong political commitment essential for achieving a cholera-free Africa.

Zambia's experience with cholera

Zambia exemplifies the persistent challenge of cholera control. Almost every rainy season triggers new outbreaks, driven by inadequate WASH infrastructure, particularly in urban and peri-urban settlements [4]. The country has faced 29 outbreaks between 1977 and 2018, with case fatality rates ranging from 0.5% to 9.3% [4–6]. The 2023/24 outbreak alone recorded 23,381 cases and 740 deaths across nine provinces, with Lusaka, Central, and Eastern provinces most affected [5,6]. These outbreaks strain health services, disrupt livelihoods, and highlight deep-rooted structural and environmental drivers of cholera transmission.

To strengthen understanding and guide action, it is useful to interpret these outbreaks through the Social Ecological Model (SEM), which highlights how individual, community, institutional, and policy-level factors interact to perpetuate cholera transmission.

The Social Ecological Model: A framework for public health action

The Social Ecological Model (SEM), developed by psychologist Uriel Bronfenbrenner in the late 1970s, is a key framework in public health for understanding the multiple and interconnected influences on health outcomes. It recognises that health behaviours and outcomes are not shaped by a single factor, but emerge from interactions across different levels of society [7].

At the individual level, health outcomes are influenced by knowledge, attitudes, behaviours, and biological factors. In contrast, the interpersonal level reflects the impact of family, peers, and social networks on health practices. The community level encompasses cultural norms, neighbourhood conditions, and access to local resources that support or hinder healthy behaviours [7,8]. At the institutional level, the effectiveness of service delivery systems, schools, workplaces, and health

facilities plays a vital role, and at the policy or structural level, governance, legislation, public health regulations, and resource allocation determine the broader systems and infrastructure that sustain population health [7,8].

Applying the SEM to diseases such as cholera can help identify both immediate and structural drivers of transmission, enabling policymakers and practitioners to design more comprehensive and sustainable interventions beyond individual behaviour change.

Applying the SEM to cholera outbreaks in Zambia
Cholera transmission in Zambia is shaped by multiple, interconnected factors across different levels of the SEM. At the individual level, misconceptions about transmission and prevention persist despite general awareness, contributing to poor uptake of WASH practices and delayed treatment [6,9]. Interpersonal influences, particularly within overcrowded households in Lusaka, which account for nearly 75% of cases, compound risks through inadequate sanitation, contaminated water, and stigma that discourages early care-seeking [6].

At the community level, cultural practices, misinformation, reliance on unsafe water sources, and limited access to sanitation exacerbate outbreaks [6,10]. Only 68% of households in Zambia have access to improved water sources, and just 40% have access to improved sanitation, while rapid urbanisation, reliance on shallow wells in peri-urban areas, and seasonal flooding continue to heighten the risk of water contamination [5,10].

Organisational and institutional weaknesses, including inadequate surveillance, limited laboratory capacity, low emergency preparedness, and a critical shortage of health workers (11.2 per 10,000 in rural areas and 18.7 per 10,000 in urban areas, against the WHO standard of 40) [6], continue to undermine effective outbreak response. At the policy level, fiscal constraints, reduced WASH investment, weak enforcement of public health regulations, and weak inter-ministerial coordination undermine sustainable prevention efforts [6,10]. Collectively, these factors demonstrate that cholera in Zambia is not simply a matter of individual behaviour but a multi-level challenge rooted in social, environmental, institutional, and structural determinants.

A call to action

The recurrence of cholera outbreaks in Zambia highlights persistent weaknesses in current response strategies. Guided by the SEM, elimination efforts must address determinants at multiple levels: from individual to policy. This will require (1) urgent, sustained, and multisectoral action focused on expanding oral cholera vaccination, (2) investing in long-term WASH solutions, (3) strengthening community health education, (4) building resilient health systems for rapid detection and response, (5) enforcing sanitation and housing regulations, and (6) fostering cross-sectoral partnerships to tackle the structural drivers of outbreaks.

Conclusion

The launch of the continental cholera response plan in Lusaka reflects strong political leadership and renewed momentum toward cholera elimination. For Zambia, this presents both an opportunity and a responsibility to act across all levels of the SEM: empowering individuals and communities, strengthening institutions, and reinforcing policy and structural systems for sustainable WASH improvements. Cholera elimination is achievable if coordinated action, political will, and community ownership align to end recurring outbreaks.

References

1. Ngingo BL, Mchome ZS, Bwana VM, Chengula A, Mwanyika G, Mremi I, et al. Socioecological systems analysis of potential factors for cholera outbreaks and assessment of health system's readiness to detect and respond in Ilemela and Nkasi districts, Tanzania. BMC Health Services Research. 2023;23(1):1261.

2. Africa CDC. President Hakainde Hichilema, AU Cholera Champion, Joins Partners to Unveil Africa's New Continental Cholera Plan. Africa CDC. https://africacdc.org/news-item/president-hakainde-hichilema-au-cholera-champion-joins-partners-to-unveil-africas-new-continental-cholera-plan/. Accessed 29 September 2025.

3. Kunda J. Africa unveils continental cholera emergency preparedness, response plan. https://www.aa.com.tr/en/africa/africa-unveils-continental-cholera-emergency-preparedness-response-plan/3669892. Accessed 29 September 2025.

4. Mwaba J, Debes AK, Shea P, Mukonka V, Chewe O, Chisenga C, et al. Identification of cholera hotspots in Zambia: A spatiotemporal analysis of cholera data from 2008 to 2017. PLoS Negl Trop Dis. 2020;14(4):e0008227.

5. Mbewe N, Tembo J, Kasonde M, Mwangilwa K, Zulu PM, Sereki JA, et al. Navigating the cholera elimination roadmap in Zambia – A scoping review (2013–2024). PLoS Negl Trop Dis. 2025;19(6):e0012422.

6. Hakayuwa CM, Sibomana O, Kalasa CS. Cholera

resurges in Zambia: Challenges and future directions. IJID Regions. 2025;15:100640.

7. Yolene G, Ravenell J, Steptoe R, Douglas D, Camille J, Castor C. Socio Ecological Model (SEM) and Diffusion of Innovation (DOI) Integrated Framework: A Proposal for Integration to Improve Intervention in the Digital Age of Medicine. Innov Pharm. 2024;15(4):10.24926/iip.v15i4.6271.

8. Rural Health Information Hub. Ecological Models - Rural Health Promotion and Disease Prevention Toolkit. https://www.ruralhealthinfo.org/toolkits/health-promotion/2/theories-and-models/ecological. Accessed 30 September 2025.

9. Chisanga A, Daka S, Masebe E, Mulenga R, Dorothy B, Saul Simbeye T, et al. An Assessment of the Knowledge, Practices and Attitudes towards Cholera Preventive Measures among Students at Lusaka Apex Medical University in Lusaka, Zambia. International Journal of Innovative Science and Research Technology (IJISRT). 2024;492–505.

10. International Growth Centre. Cholera in Zambia: Treating the causes, not the symptoms. International Growth Centre. 2018. https://www.theigc.org/blogs/cholera-zambia-treating-causes-not-symptoms. Accessed 4 October 2025.