

# **Effectiveness of a Community-Based Oral Cholera Vaccine Campaign during Flooding in Beira City, Mozambique: A Systematic Review of the 2002 Response**

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## | Abstract

Flooding in urban African settings creates conditions conducive to cholera outbreaks. Community-based oral cholera vaccination is a potential public health response, but evidence of its effectiveness in acute emergency contexts is required. The campaign in Beira City, Mozambique, following severe flooding, provides a critical case study. This systematic review aimed to synthesise evidence on the effectiveness of the community-based oral cholera vaccine (OCV) campaign implemented in Beira City in response to flooding. Its objectives were to assess vaccine coverage, logistical feasibility, and impact on cholera incidence and mortality. A systematic search of multiple academic databases and grey literature sources was conducted. Studies reporting on the campaign's implementation, coverage, or epidemiological outcomes were included. Data extraction and quality assessment were performed by two independent reviewers using standardised tools. A narrative synthesis of findings was undertaken. Five studies met the inclusion criteria. The campaign achieved high vaccine coverage, with one study reporting coverage exceeding 80% of the target population. Evidence suggested the intervention was feasible and contributed to a reduction in suspected cholera cases in vaccinated neighbourhoods compared to non-vaccinated areas. Logistical challenges, particularly regarding cold-chain maintenance and community mobilisation, were documented. The community-based OCV campaign in

Beira was a feasible and likely effective intervention during a flooding emergency. The achievement of high coverage was associated with a reduction in cholera burden, supporting the use of OCV as part of an integrated response in similar humanitarian contexts. Future emergency responses should integrate OCV into broader water, sanitation, and hygiene (WASH) strategies. Investment in community engagement and local logistics is crucial for achieving high coverage. Further operational research is needed to refine delivery models and assess long-term impact.

cholera, oral cholera vaccine, flooding, Mozambique, outbreak response, systematic review

This review consolidates existing evidence on a specific emergency OCV campaign, providing synthesised findings to inform public health policy and practice for cholera control in flood-affected urban settings in Africa.

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