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A Systematic Review of Community-Based Surveillance for Early Detection of Viral Haemorrhagic Fevers in Rural Liberia, 2012

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Abstract

Viral haemorrhagic fevers (VHFs) present a major public health threat in West Africa, with rural border areas at heightened risk. In response to a major outbreak, Liberia implemented a community-based surveillance (CBS) system in remote villages of Lofa County to facilitate earlier detection. A consolidated analysis of this system's performance is needed. This systematic review evaluated the structure, processes, and outcomes of the community-based surveillance system for early detection of VHF symptoms in rural Lofa County, Liberia. A systematic search of multiple academic databases and grey literature sources was undertaken. Studies reporting on the design, implementation, or evaluation of the Lofa County CBS system were included. Data were extracted and synthesised narratively, with study quality assessed using appropriate critical appraisal tools. The review identified a limited number of relevant studies. Findings indicated that the CBS system successfully engaged community health workers and established functional reporting mechanisms. One study noted community informants provided the initial alert for approximately 70% of investigated suspected VHF cases. Persistent challenges included inconsistent supply chains, variable training quality, and community stigma associated with suspected cases. The CBS system demonstrated feasibility and utility in improving early detection capacity in a remote setting, with community actors proving critical for initial alerts. However, its sustainability and overall effectiveness were undermined by broader health system weaknesses. Future CBS programmes should incorporate strengthened logistical support, regular refresher training, and dedicated community engagement to mitigate stigma. Further operational research is required to develop standardised metrics for evaluating CBS performance and cost-effectiveness. community health workers, early warning, epidemic preparedness, Liberia, surveillance, viral haemorrhagic fever This review synthesises available evidence on a key surveillance approach in a high-risk region, providing insights for strengthening community-based early detection systems for VHFs in similar settings.

Keywords: *community-based surveillance, viral haemorrhagic fevers, early detection, rural health systems, West Africa, Liberia, outbreak response*