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## Improving Cholera Surveillance in Low Resource Settings with an Enriched Dipstick Assay



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Two children play near a latrine and dirty water in Yaoundé, Cameroon. Photo: David A Sack, October 2014.

Cholera outbreaks continue to threaten public health, most recently with outbreaks in Tanzania, Kenya, Malawi, and Iraq. In order to prepare, prevent, and react to cholera threats, endemic and at-risk countries need sustainable cholera surveillance programs.

Cholera surveillance is often hindered by poor surveillance strategies and the requirement for laboratory confirmation. The current “gold” standard for cholera case confirmation is a positive culture. While this method is specific, it poses several challenges in low resource settings, including high costs, logistical constraints, specimen transport, procurement of laboratory supplies, and attendant processing delays. These challenges are just a few of the reasons that improved surveillance options are needed for effective and sustainable cholera surveillance to promote early case detection and a rapid response. Access to timely information gives decision makers the information they need to implement cholera control strategies to prevent the further spread of cholera.



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Positive dipstick from water taken from a well in Far North Cameroon. Photo: Etienne Guenou, March 2014.

The enriched cholera dipstick assay provides a tool for simplified surveillance in low resource settings. The [Manual for Detecting Vibrio Cholerae 01 from Fecal Samples Using an Enriched Dipstick Assay- a Low-Cost, Simplified Method of Confirming Cholera](#) [4] provides a description of the modified method, the dipstick test kit, how to test fecal specimens, and safe handling.

The DOVE project, in collaboration with M.A. Sante, a nonprofit in Cameroon, conducted clinical and epidemiological surveillance in the Far North Region of Cameroon (FNC) using simplified surveillance methods. The results of the first year of this surveillance were recently published, [Clinical and Environmental Surveillance for Vibrio cholerae in Resource Constrained Areas: Application During a 1-Year Surveillance in the Far North Region of Cameroon](#) [5]. The project demonstrated that the enriched dipstick assay led to earlier case detection and reductions in logistics, supply costs and false-positives.



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Sampling water from a well that was associated with a cholera outbreak in Douala, Cameroon in 2011. Photo: David A Sack, May, 2014.

Simplified specimen preservation methods were also evaluated during surveillance efforts in the FNC. These methods enabled molecular characterization of specimens collected during two distinct outbreaks in Cameroon in 2014 and are documented in a recent publication, [Evaluation in Cameroon of a Novel, Simplified Methodology to Assist Molecular Microbiological Analysis of V. cholerae in Resource-Limited Settings](#) [7]. The use of filter paper to preserve DNA allowed for easy storage and

transportation and enabled advanced molecular characterization of *Vibrio cholerae* in the region.

**Source URL:** <https://stopcholera.org/blog/improving-cholera-surveillance-low-resource-settings-enriched-dipstick-assay>

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