

Following the 2014 Ebola outbreak, signs of recovery for Liberian healthcare system

February 20 2018



The Ebola virus disease (EVD) outbreak in 2014-2015 disrupted the provision of healthcare in Sierra Leone, Guinea, and Liberia. Credit: US Army Corps of Engineers, Savannah District

The effects of the Ebola virus disease (EVD) outbreak in 2014-2015 were felt not only directly, in the 28,616 cases of EVD and 11,310 deaths, but also indirectly, through the disruption in the provision of healthcare in Sierra Leone, Guinea, and Liberia—the countries most severely impacted by the outbreak. In a research article published this week in *PLOS Medicine*, Bradley H. Wagenaar, of the Department of Global Health, University of Washington, and colleagues quantify the health system output losses in Liberia during and in the immediate aftermath of the EVD outbreak, and the recovery of the health systems in the two years following.

Wagenaar and colleagues used routine [health](#) information system (RHIS) data from 379 public-sector health facilities across Liberia, from January 2010 through December 2016, to conduct a time series analysis of changes in 10 essential primary healthcare service indicators (clinic visits; bacille Calmette-Guérin (BCG) vaccinations; measles vaccinations; first pentavalent vaccinations; first antenatal care (ANC) visits; institutional births; postnatal care (PNC) visits within 6 weeks of birth; artemisinin-based combination therapy (ACT) treatments for malaria; [acute respiratory infections](#) (ARIs) treated; medroxyprogesterone acetate doses). They found that 4 months into the outbreak (September 2014), healthcare service outputs dropped between 67.3% (measles vaccinations; 95% CI: 77.9%, 56.8%, p vaccine-preventable diseases due to missing vaccinations) may persist for years to come.

The authors note several limitations to this study, including unknown impact of the EVD epidemic on quality of record keeping, unknown changes in quality of care, exclusion of Montserrado County, and exclusion of HIV and tuberculosis data. Still, the authors note that this analysis provides important lessons on preparing for and recovering from large scale outbreaks and other interruptions to health systems. They conclude: "Sustained investments in public-sector health system

strengthening are needed across EVD-affected countries to close gaps in primary care that occurred during the EVD [outbreak](#), and to build resilient primary healthcare systems capable of mitigating collateral effects of the next emerging epidemic."

More information: Wagenaar BH, Augusto O, Beste J, Toomay SJ, Wickett E, Dunbar N, et al. (2018) The 2014-2015 Ebola virus disease outbreak and primary healthcare delivery in Liberia: Time-series analyses for 2010-2016. *PLoS Med* 15(2): e1002508.
doi.org/10.1371/journal.pmed.1002508

Provided by Public Library of Science

Citation: Following the 2014 Ebola outbreak, signs of recovery for Liberian healthcare system (2018, February 20) retrieved 2 May 2024 from <https://medicalxpress.com/news/2018-02-ebola-outbreak-recovery-liberian-healthcare.html>

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