Commentaries

Cholera: fourth year of the epidemic in Haiti; sixth decade of the global pandemic

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Invited Commentary on 'Cholera surveillance during the Haiti epidemic — the first 2 years', Barzilay et al.

The cholera epidemic in Haiti entered its fourth year on 21 October 2013. This unexpected catastrophe appeared in a rural area, spreading rapidly to all departments within a month, and 5% of the population was reported with cholera in the first year.¹ It has persisted, with lower case counts reported each year (national data, accessed 30 July 2013 at: <http://mspp.gouv.ht/site/index.php#>). Rapid case reporting to public health surveillance provided a detailed picture, guided mobilization of resources to treat and prevent the illness, identified areas for more detailed investigation, and documented the decrease in case mortality that followed improved treatment. As part of that surveillance, microbiological studies showed the epidemic strain of *Vibrio cholerae* O1 belongs to a lineage of atypical El Tor strains that arose in the 1990s and is now the predominant strain circulating in Asia and Africa.

2013 also marks the fifty-third year of the current global cholera pandemic, which began unexpectedly in Sulawesi in 1960.² Unlike previous cholera pandemics which spread globally in successive self-limited waves since 1817, this current seventh pandemic shows little sign of abating. In 2011, it affected people in 58 countries on six continents.³ This pandemic has appeared dramatically in numerous lower income countries, and has often persisted or recurred. Though attempts to limit introduction by quarantine or prophylaxis have generally failed, measures that limit subsequent spread have been successful, though they take substantial time, resources, and development. Epidemic cholera no longer threatens North America or Europe, has now disappeared from Latin America and is waning in Southeast Asia. The countries that remain most affected have inadequate water and

sewage treatment systems, and are marked by high infant mortality ratios (IMRs), likely reflecting other infections that spread through unsafe water.⁴

As Haiti shows, countries with inadequate sanitary infrastructure are still at risk. Short-term prevention measures can empower families and communities to make their household water safer, while building sustainable water and sanitation systems provides long-term protection. Oral cholera vaccines now show promise, and future vaccines may have even greater and more durable effect. For all these interventions, the numbers at risk are large, and the logistics of implementation challenging. For example, in 2011, an estimated 770 million persons lacked access to improved drinking water sources (2013 Millennium Development Goal report, p. 47, accessed 30 July 2013 at: <http://www.undp.org/content/dam/undp/library/MDG/english/mdg-report-2013-english.pdf>), and 53 countries (including Haiti) with 2.2 billion inhabitants had IMRs >40 per 1000 live births (Data from World Bank, accessed 30 July 2013 at: <http://data.worldbank.org/indicator/SP.DYN.IMRT.IN>).

In the future, pandemic cholera is likely to continue in Haiti and elsewhere as long as circumstances permit high rates of transmission. The bacterial strains that cause cholera are likely to keep evolving, shifting serotype, toxin type, and antimicrobial resistance. Changing climate may foster persistence in more places and bring floods that damage water and sewer systems, putting previously protected populations at risk. Epidemic cholera will still be a red flag that marks populations that need the safer water and sanitation infrastructures most of the world takes for granted.

Epidemic cholera in any one country threatens all countries still at risk. In the nineteenth century, fear of pandemic cholera propelled the first international health reporting agreement, giving cholera code #001 in the International Classification of Diseases. In the twenty-first century, epidemic cholera demands efforts in affected countries to help populations protect themselves, like the Call for Action announced in Haiti in 2011, as well as a global response to reduce the potential of epidemic cholera everywhere.⁵

References

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