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Understanding Cholera in Nepal



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[Alfred Pach, PhD](#) [1]

Senior Social Scientist | International Vaccine Institute (IVI)



[2]

[Anuj Bhattachan, MD](#) [2]

Associate Research Scientist | International Vaccine Institute (IVI)

Nepal is a land-locked country with geographical and socio-cultural proximity to the Gangetic plain and the Bhramputra River basins of West Bengal and Bangladesh. The latter is known as the 'homeland of cholera' for its critical relation to six of the seven recent cholera pandemics (1). Nepal too battles with cholera, and a complex set of factors set the cholera scene in this Himalayan country.



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A cholera patient being rehydrated in Nepal. Photo: Lorenz von Seidlein (2014).

Cholera has existed in Nepal for a long time. The first recorded cholera epidemic took place in 1823, followed by a series of epidemics occurring in the Kathmandu Valley in 1831, 1843, 1856, 1862, and 1887. The first scientific report on cholera in Nepal was published in May of 1886 (2). The report vividly describes an outbreak, as well as the demography, geography and the sanitation and hygiene practices at that time. However, for nearly a century there was a gap in the public health history of Nepal; there are few reports of cholera following these earlier notices (3, 4), perhaps due to the political turmoil and isolationism of the Rana dynasty during this period.

It was not until the early 1990s that a handful of studies reporting cholera began to surface. Most of these studies were laboratory-based surveillance or outbreak reports (5-9). These studies indicated that *V. cholerae* 01 El Tor Ogawa is endemic in Nepal. The studies also describe the seasonal nature of cholera in the country with most cases reported during the rainy, or monsoon, season, which starts in June and usually ends by October. The largest cholera outbreak reported in Nepal, with

more than 30,000 people affected, was in Jajarkot in the Mid West region in 2009. Tragically, more than 500 people lost their life (10). More recently, during the 2014 monsoon, a cholera outbreak was reported in Rautahat in the Terai region adjoining northern states of India. The outbreak, during which more than 600 people were affected, was laboratory confirmed to be cholera (11) .

It has been estimated that nearly 20% of the population of Nepal is at risk for infection by *V. cholerae* (15). Every year, there are reports of cholera outbreaks from rural and urban locales (11, 12) , including parts of the country that are remote and difficult to access (13) . The hill districts of the mid western and far western development regions are particularly at high risk due to inadequate public health facilities and poor water and sanitation conditions.

Cholera outbreaks are a concern for a country like Nepal. Not only does Nepal face floods and landslides during the rainy season every year, it has a steady increase in urban population density accompanied by inadequate supplies of safe drinking water and high rates of open defecation. Studies of *V. cholera* in Nepal have shown drug resistance to a number of antibiotics (e.g. nalidixic acid, cotrimoxazole, etc.) probably related to the over-prescription of antibiotics in pharmacies (13, 16) . All of these complex factors raise the possibility of future cholera outbreaks that may be challenging to prevent and control. It is critical that Nepal improves its outbreak preparedness by strengthening its early warning and response system, expanding health education, increasing its case management readiness, ensuring the adequate distribution of rehydration supplies, and giving consideration to the provision of the oral cholera vaccine in high risk communities.

The recent establishment of an antimicrobial sentinel surveillance system across the country that includes the identification of cholera, along with plans for use of the WHO stockpile cholera vaccine, are significant steps in the development of a cholera response system. In a country which can only spend 2% of its domestic GDP on public health (17), however, there is a need for external support to fully develop an effective cholera prevention and control program. Creating an integrated and efficient response to cholera outbreaks in Nepal will involve the engagement and commitment of policy decision-makers, public health administrators and managers, and health care professionals. The control of cholera is eminently possible with the tools and knowledge available today, and the growing interest among health officials in introducing the oral cholera vaccine and expanding water and sanitation education.

References

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