

Water Quality vs. Sanitation Accessibility:

What is the most effective intervention point for cholera in Dhaka, Bangladesh?

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Annually, 3 to 5 million individuals contract cholera, an acute diarrheal infection that is caused by the ingestion of food or water containing the *Vibrio cholerae* bacterium. Because cholera is a waterborne disease, it can be transmitted quickly in environments with inadequate water and sanitation systems where infected waste easily pollutes drinking water. Today, Bangladesh continues to struggle with endemic cholera. Donor organizations address water and sanitation via localized initiatives, including the installation of tubewells and sanitary latrines. At this small-scale, water quality and sanitation accessibility can be improved independently of one another, and when resources are limited, donors must invest in the most effective of disease prevention options. This study uses cholera incidence data (years 2000-2009) collected at the International Centre of Diarrheal Disease Research, Bangladesh to compare the disease prevention power of water versus sanitation in Dhaka, Bangladesh. Data regarding use of sanitary latrines and boiling of drinking water were obtained and used as surrogate variables for sanitation accessibility and water quality respectively. The study found that boiling water is 10 times more effective at preventing cholera than the use of a sanitary latrine. By extension, water quality is more critical to cholera prevention than sanitation accessibility in Dhaka. As the nation's most prevalent diarrheal disease, cholera outbreaks result in incalculable lost wages and treatment expenses, taken from the pockets of an already impoverished society. Bangladesh cannot afford cholera; prevention is the only sustainable control option, and water quality is the most effective intervention point for Dhaka, Bangladesh.