

Water Quality vs. Sanitation Accessibility:

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

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Every year, 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 can easily pollute drinking water. Today, Bangladesh continues to struggle with endemic cholera. Donor organizations address water and sanitation via localized initiatives, including the installation of community water collection sites (i.e. tubewells; water-boiling points; etc.). At this small-scale level, 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 used daily cholera incidence data (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 extrapolation, water quality is more critical to cholera prevention than sanitation accessibility in Dhaka. At present, WaterAid – one of Bangladesh’s most significant water and sanitation organizations – invests the majority of its budget on improving sanitation accessibility. The World Health Organization and the United Nations Millennium Development Goals also prioritize sanitation accessibility. However, in Bangladesh, water quality must be given greater precedence. 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.