

## Ecology of water in non notified slum of Mumbai

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Urban slums in developing countries that are not recognized by the government often lack legal access to municipal water supplies. This results in the creation of insecure “informal” water distribution systems that may increase water-borne disease risk. We evaluate an informal water distribution system in a slum in Mumbai, India using commonly accepted health and social equity indicators. We also identify predictors of bacterial contamination of drinking water using logistic regression analysis. Data were collected through two studies: the 2008 Baseline Needs Assessment survey of 959 households and the 2011 Seasonal Water Assessment, in which 229 samples were collected for water quality testing over three seasons. Water samples were collected in each season from the following points along the distribution system: motors that directly tap the municipal supply (i.e., “point-of-source” water), hoses going to slum lanes, and storage and drinking water containers from 21 households. Depending on season, households spend an average of 52 to 206 times more than the standard municipal charge of Indian rupees 2.25 (US dollars 0.04) per 1000 liters for water, and, in some seasons, 95% use less than the WHO-recommended minimum of 50 liters per capita per day. During the monsoon season, 50% of point-of-source water samples were contaminated. Stored drinking water was contaminated in all seasons, with rates as high as 43% for *E.coli* and 76% for coliform bacteria. In the multivariate logistic regression analysis, monsoon and summer seasons were associated with significantly increased odds of drinking water contamination.

### Biography

Anita Patil-Deshmukh MPH from Harvard, was a faculty neonatologist in Chicago for 25 years and the director of the Pediatric Residency program for 9 years. She has been heading a independent research collective in Mumbai after relocating to Mumbai in 2005. She has conducted 11 public health projects in Mumbai slums in collaboration with Harvard School of Public Health and NYU. Three papers based on this projects are has published in peer reviewed journals. This work has led to increasing the immunization rates in the slum from 29% to 80.7 % with the help of the local governing body.

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