

## Arsenic in Drinking Water: An Emerging Environmental Health Challenge

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**Objective:** Determine the nature of arsenic contamination in drinking water in Bangladesh.

**Methodology:** This preliminary study was conducted during July-August 1997. A cross-sectional survey was carried out to collect information at the household level (observational study design). The performance of field kits used by other agencies available to us was compared with a selected laboratory technique. Five hundred and seventy tubewells and their users were studied. Tubewell water samples collected from almost the whole country, except some areas in Chittagong and Sylhet, were analyzed for arsenic and ferrous iron contents. Users of these tubewells were interviewed and their statements reviewed, and the methods commonly used by other agencies to measure arsenic contamination were compared.

**Results:** About 61% of the tubewells were found to contain arsenic in excess of the WHO-recommended value of 0.01 mg/L. The arsenic concentration varied from 0 mg/L to approximately 1.0 mg/L, and the ferrous iron content varied from 0 mg/L to 41 mg/L. The association between arsenic and iron and the depth of handpumps was found to vary with the hydrogeological conditions. The study revealed that only 4% of the respondents were aware of the arsenic contamination in the used tubewells. Unclear messages related to water treatment were as well found to be disseminated at the field level.

**Conclusion:** The environmental health challenge relating to arsenic contamination is massive and complex, and needs to be addressed appropriately. Findings of the research and development activities should be coordinated appropriately.

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## Economic Evaluation of MCH-FP Clinic-based Syphilis Screening in Rural Bangladesh

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**Objective:** Examine the costs and benefits of screening women of reproductive age visiting the MCH-FP centres, to identify the syphilis cases for treatment and estimate the cost-effectiveness of alternative screening strategies at different levels of syphilis prevalence.

**Methodology:** A field study was carried out to estimate the population-based rates of reproductive tract infections (RTIs), including STIs, in men and women in Matlab. The prevalence rate of syphilis was found to be about 0.8%, indicating a low prevalence of syphilis in rural Bangladesh. Based on the finding of the study, costs of screening and treatment of syphilis have been estimated assuming that the prevalence rate should be less than 3% in most rural communities. For costing the medical interventions, the market price of the laboratory tests and drugs was used. The study estimated the direct medical costs associated with screening and treatment of syphilis, excluding all direct non-medical and other indirect costs.

**Results:** If the prevalence rate of syphilis remains less than 6% in the population, screening with RPR, followed by TPHA, will be more cost-effective than performing RPR only. At the higher prevalence rates, RPR alone should be used for screening population for syphilis. The benefit-cost ratio of syphilis screening with treatment (treating both