

# The impact of Water Supply and Sanitation interventions on child health: evidence from DHS surveys

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In this paper I examine the impacts on child health, using diarrhoea as the health outcome, (amongst children living in households) with access to different types of water and sanitation facilities, and from socio-economic and child specific factors. Using cross-sectional health DHS survey data, I employ the propensity score method to match children belonging to different treatment groups, defined by water types and sanitation facilities, with children in a control group. I also employ time differenced and quantile regression techniques to compare my results and to check for their robustness. I demonstrate that it is important to incorporate the survey design in both linear regression and propensity score analysis. Ignoring the survey weights affects the estimates of population-level effects substantially in the analysis. The paper will discuss ways in which propensity score can be used to estimate average cost-effectiveness. Finally I discuss software for implementing a matching estimation. There are currently two options for researchers who want to perform matching estimation with a relatively "canned" package: STATA and R. Both packages offer simple syntax and can be used to compute any one of the three estimands (ATE, ATT, or ATC) and have numerous options regarding the number of matches, bias-correction, heteroscedasticity correction, etc. STATA has the advantage of being much more well known, but the matching routine in R is significantly faster. Accordingly I shall provide syntax codes in STATA and R for both propensity score matching and cost-effectiveness modeling.

## References

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