



JOHNS HOPKINS
BLOOMBERG
SCHOOL of PUBLIC HEALTH

Department of Biostatistics

BIOSTATISTICS SEMINAR

Doubly Robust Estimation in a Semi-parametric Odds Ratio Model

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ABSTRACT

We consider the doubly robust estimation of the parameters in a semi-parametric conditional odds ratio model characterizing the effect of an exposure in the presence of many confounders. We develop estimators that are consistent and asymptotically normal in a union model where either of two baseline densities is correctly specified but not necessarily both. Furthermore, when the outcome has finite support, our approach provides estimators that are semi-parametric efficient in the union model at the intersection sub-model where both nuisance functions are correct. A case of particular interest arises when the outcome is binary, then our approach yields a doubly robust locally efficient estimator in a semi-parametric logistic regression model. For general types of outcomes, we provide a strategy to obtain doubly robust estimators that are nearly efficient at the intersection sub-model. We illustrate the method in a simulation study and an application in statistical genetics. Finally, we briefly discuss various extensions of the proposed method..

**The Johns Hopkins Bloomberg School of Public Health
Department of Biostatistics, Wednesday, October 7, 2009
Room W2030 School of Public Health, 4:00-5:00pm (Refreshments: 3:30)**

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