



The University of Chicago  
Department of Statistics

Master's Thesis Presentation

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**Variance of Ranked Data in  
the National Immunization Survey**

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**ABSTRACT**

The National Immunization Survey (NIS) monitors vaccination coverage rates for children 19–35 months. The NIS is conducted by the National Opinion Research Center and sponsored by the Centers for Disease Control and Prevention. Data is collected in a two phase design. The first stage is a telephone interview to households and the second phase is a mail interview of children's vaccination providers. Data from the NIS are used to produce timely estimates of vaccination coverage rates for all childhood vaccinations recommended by the Advisory Committee on Immunization Practices (ACIP).

States are ranked based on the vaccination coverage rate. This rank is subject to some sample variability. This paper examines various variance estimation methods for ranked data. These methods include: simulation, bootstrap, jackknife, and balanced half-samples methods.