

***D R A F T***

**For Consideration by: (To be determined)**

***Validation of a Model for Estimating  
State and Local Prevalence of Serious Mental Illness***

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## **Abstract**

This study addresses an ongoing problem in mental health needs assessment. This involves estimating the prevalence of an identified problem for local areas – specifically, serious mental illness (SMI) among adults -- in a reliable, valid, and cost-effective manner. The aim of this study is the application and testing of a recently introduced methodology from the field of small area estimation to determining SMI rates in the 48 contiguous U.S. states, and in the towns and cities of Massachusetts. It uses ‘regression synthetic estimation fitted using area-level covariates’, to estimate a model using data from the 2001-2002 replication of the National Comorbidity Study (n=5,593) and apply it, using 2000 STF-3C Census data, to various state and local areas in the U.S. The estimates are then compared with independently collected SMI indicators. The resulting estimates show not only face validity and internal consistency, but also predictive validity. The logistic model had an overall predictive accuracy of 91.1%, largely based on socioeconomic disparities. Pearson *r* validity coefficients for the estimates range from 0.43 to 0.75. The model generated a national estimate of SMI adults of 5.5%; for the 48 states, rates ranging from 4.7% to 7.0%; and for Massachusetts towns and cities, 1.1% to 7.5%.

**KEYWORDS:** Serious mental illness, Needs assessment, Small area estimation, National Comorbidity Study, Socioeconomic disparities