

## Recovery- and Community-Based Mental Health Services in the Slovak Republic: Implications on Hospitalizations and Lengths-of-Stay for the Severely and Persistently Mentally Ill

### Authors/Presenters:

Joan Bloom, Ph.D.  
Professor, Health Policy and Management  
School of Public Health  
University of California, Berkeley  
409 Warren Hall#7360  
Berkeley, California  
Jbloom@berkeley.edu

Soo Hyang Kang, DrPH  
Research Program Coordinator  
School of Public Health  
University of California, Berkeley  
1908 Magdalena Circle #60  
Santa Clara, California  
Shkangpak@yahoo.com

Jenny Hyun, Ph.D.  
Doctoral Candidate, Health Services and Policy  
Analysis  
School of Public Health  
University of California, Berkeley  
1908 Magdalena Circle #60  
Santa Clara, California  
Jhyun@berkeley.edu

Petr Nawka, M.D.  
Chair  
Hrehovcika 1  
07101 Michalovce  
Slovak Republic  
Nawka@pnmi.sk

### Research Objective

Reform of psychiatric services in the former-Communist countries of Eastern Europe has focused on shifting away from psychiatric hospitalizations toward building infrastructure for the delivery of community mental health services. Community mental health services were introduced incrementally to severely and persistently mentally ill (SPMI) individuals residing in the Michalovce region of Slovakia beginning with a pilot project in 2001. This study seeks to assess the impact of community mental health service interventions (i.e., case management, sheltered housing, and psychiatric rehabilitation centers) on the probability of hospitalization, 30-day re-hospitalization, and inpatient lengths-of-stay for SPMI individuals in the Michalovce region of Slovakia.

### Study Design

This study uses a natural experiment design on a longitudinal cohort of SPMI individuals over five years. Generalized estimating equation models are used to correct for standard error estimates with repeated measures. Analyses controlled for differences in demographic and diagnostic characteristics between those who did and did not receive community mental health services.

### Population Studied

Analyses are conducted on a cohort of 803 SPMI individuals residing in the Michalovce region who were hospitalized in 2001 at the psychiatric hospital in Michalovce (n=4,015). Forty-six individuals within the cohort received some type of community mental health service intervention between 2001 and 2005. Those who received community mental health services were more likely to be younger, unmarried, and to have a diagnosis of schizophrenia than those who did not receive community mental health services. At baseline, mean lengths-of-stay were 146.9 (s.d.=112.6) and 38.9 (s.d.=10.53) days for SPMI individuals who received community mental health services and those who did not, respectively.

### Principal Findings

Those who received community mental health services had 5.7 times higher odds of being hospitalized in any given year (OR=5.7,  $p \leq 0.001$ ). While the probability of hospitalization decreased steadily over time, community

service interventions did not have a significant effect on the probability of hospitalizations. Those SPMI individuals who received community mental health services had 89.4 more days in the hospital than those who did not receive community mental health services ( $p \leq 0.01$ ). In later years, however, the probability of hospitalization was not significantly different from those who had not received community mental health services. Lengths-of-stay decreased over time, however, and the interaction of community mental health services and time showed a significant effect in 2004 and 2005 where those who received community mental health services showed 71.8 and 73.5 fewer days of hospitalization, respectively, as compared to those who did not receive community mental health services in 2001. Those who received community mental health services were significantly more likely to be re-hospitalized within 30 days ( $OR=8.0$ ,  $p \leq 0.01$ ), but their odds of 30-day re-hospitalization decreased significantly in later periods. Significant demographic factors that are associated with hospitalization and lengths-of-stay include marital status and having a diagnosis of schizophrenia.

### **Conclusions**

Community mental health services appear to be effective in reducing hospital lengths-of-stay and re-hospitalization for SPMI individuals. SPMI individuals who received community mental health services had lower hospital lengths-of-stay and were less likely to be re-hospitalized within 30 days in later years of the study period. While there were significant initial differences between individuals who had received and had not received community mental health services in the probability of hospitalization, 30-day re-hospitalization, and inpatient lengths of stay, individuals who received community mental health services were not any more likely to be hospitalized in later years of the study and, when hospitalized, their inpatient lengths-of-stay were significantly lower than those who had not received community mental health services.

### **Implications for Policy, Delivery, or Practice**

This study supports the continuing policy initiative of building de-institutionalized, community-based mental health systems in Slovakia and in other Eastern European countries. Future research should investigate the cost-effectiveness and quality of community mental health services, including implementation and management of those services, and quality of life issues surrounding de-institutionalized care for SPMI individuals.