

## Quick Review of Model System Research

### Do Rehospitalization Rates Differ Among Injury Severity Levels in the NIDRR Traumatic Brain Injury Model Systems Programs?<sup>1</sup>

#### What is the study about?

This study compares the rate and nature of rehospitalization in a cohort of patients enrolled in the National Institute on Disability and Rehabilitation Research Traumatic Brain Injury Model Systems (TBIMS) with and without disorders of consciousness (DOC) at the time of rehabilitation. The period of interest is 1, 2, and 5 years postinjury.

#### Who participated in the study?

Data from 5,498 participants were included in this study after excluding those who had missing information, such as duration of unconsciousness, 1-year followup data, or those who had mild traumatic brain injury (TBI). Of these individuals, 366 were defined as the DOC sample, while the remaining 5,102 had either moderate or severe TBI. These participants were selected from the 9,028 enrollees in the Injury TBIMS database that maintains medical records for patients from 16 TBIMSs (i.e., Federally funded medical centers) enrolled between 1988 and 2009.

#### How was the study conducted?

Participants and their caregivers were contacted at 1 year postinjury and the number of hospitalizations and causes for rehospitalization was collected from them. For those with DOC, rehospitalization was also reported at 2 and 5 years postinjury.

#### What did the study find?

A total of 1,583 rehospitalizations were documented within the first year of followup (2.82/100 months), with orthopedic and/or reconstructive issues as the leading reasons for readmission in the first year postinjury. Among the DOC participants with complete followup at all years, there were 143 unique rehospitalizations for inpatient rehabilitation, general health maintenance, infection, or for reasons related to obstetrics and gynecology. The study found that, in general, participants with DOC had higher rates of rehospitalization when compared to participants with moderate and severe TBI 1 year postinjury. For those with DOC, the data show that rehospitalization rates declined in years 2 and 5. One of the most common reasons for rehospitalization of patients with DOC was admission to acute inpatient rehabilitation. This may signify either functional gain or decline. Nonetheless, the findings show that patients with DOC have unique medical needs requiring more frequent access to health care facilities.

The contents of this quick review were developed under a grant from the Department of Education, NIDRR grant number H133A110004. However, those contents do not necessarily represent the policy of the Department of Education, and you should not assume endorsement by the Federal Government.

<sup>1</sup> Nakase-Richardson, R., Tran, J., Cifu, D., Barnett, S. D., Horn, L. J., Greenwald, B. D., Brunner, R. C., ... Giacino, J. T. (2013). Do rehospitalization rates differ among injury severity levels in the NIDRR Traumatic Brain Injury Model Systems program? *Archives of Physical Medicine and Rehabilitation*, Epub ahead of print.