

Quick Review of Model System Research

Variation in Inpatient Rehabilitation Utilization After Hospitalization for Burn Injury in the United States¹

What is the study about?

Each year, close to 45,000 people are admitted to the hospital for burn treatment. Advances in burn care over the past 40 years have led to better survival rates. Yet patients face challenges as they leave the hospital and reintegrate into society. Patients who receive inpatient rehabilitation show major improvements in functioning. But little is known about the number of people using these services across the country. This study aimed to measure the rate of inpatient rehabilitation facility (IRF) use by state. Researchers also looked at the effects of age, sex, type of insurance, and severity of burn on IRF use.

Who participated in the study?

Study subjects included 57,968 patients admitted to hospitals for burn injury over 10 years (between 2001 and 2010). Patients lived in 19 different states. Subjects were a wide variety of ages. Average age at time of injury was 38.8 years. Almost two-thirds of patients were male. Most patients (72.6%) had 10% or less of their total body surface area (TBSA) burned. Close to 60% of patients had government-based insurance, while 29% had private insurance. Twelve percent of the patients were uninsured. Most patients (87.4%) were discharged from the hospital to home.

How was the study conducted?

For this retrospective cohort study, researchers used publicly available patient data from the Healthcare Cost and Utilization Project's (HCUP) State Inpatient Databases (SID). The SID is a set of hospital databases from data organizations in participating states. Researchers identified all patients hospitalized with burns and sorted them into seven discharge groups: home, skilled nursing facility, inpatient rehabilitation, transfer to another acute care hospital, psychiatric hospital, hospice, and death. Researchers used statistical analyses to look at the main outcome of interest, discharge to inpatient rehabilitation. They also looked at the influence of other variables on likelihood of IRF use.

What did the study find?

The study found that there were significant differences by state in the proportion of discharges to inpatient rehabilitation. Many factors could account for differences across states. For example, practice habits of local physicians might affect rates of referral to rehabilitation. Likewise, burn centers with set protocols may be more likely than local hospitals to refer patients. Increased age, hospitalization at a burn center, and possessing health insurance all increased the likelihood of an inpatient rehabilitation stay following hospitalization for a burn injury, while a higher TBSA generally demonstrated higher rehabilitation utilization until TBSA surpassed 70%. The type of health insurance (private or government-based) did not seem to matter. The investigators suggest that national guidelines for rehabilitation care after a burn injury may reduce the differences observed among the states with respect to IRF use. They also indicated that further research could help identify the precise reasons that use varies across states. Such research could also look at how those differences affect patient outcomes and advise on how to standardize treatment.

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¹ Green, N.H., Pham, T.N., Esselman, P.C., & Rivara, F.P. (2014). Variation in Inpatient Rehabilitation Utilization After Hospitalization for Burn Injury in the United States. *Journal of Burn Care & Research*. 2014 Nov 24. PubMed PMID: 25423440