

# Effect of Insurance Status on Transfer of Patients with General Neurosurgical Conditions: An Analysis Using the Nationwide Inpatient Sample Databases

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## Introduction

There are concerns that economic factors may influence the transfer of patients with general neurosurgical conditions from nonteaching hospitals to teaching hospitals. We used the Nationwide Inpatient Sample (NIS) Database to study whether patients' insurance status influences transfers. We studied five neurosurgical conditions that could be managed by a general on-call neurosurgeon: abscess, adult hydrocephalus, spondylosis/stenosis, disc disease, and trauma.

## Methods

The NIS 1988-2009 was searched using ICD-9 codes for all hospitalizations for cranial or spinal abscess, hydrocephalus, spondylosis/stenosis, disc disease, and cranial or spinal trauma in patients 18 years and older. Transfer and hospital data is included in the NIS. Generalized estimating equations were performed controlling for age and gender using SAS statistical software.

## Results

There were 28,205 hospitalizations for abscess; 172,054 for hydrocephalus; 958,603 for spondylosis/stenosis; 818,704 for disc disease; and 396,851 for neurotrauma. Nonteaching hospitals were significantly more likely to transfer OUT an uninsured patient with abscess, hydrocephalus, spondylosis/stenosis, disc disease, or neurotrauma ( $P < 0.0001$ ,  $P < 0.0001$ ,  $P < 0.01$ ,  $P < 0.0001$ ,  $P = 0.06$ , respectively), and conversely, teaching hospitals were significantly more likely to transfer IN an uninsured patient with abscess, hydrocephalus, spondylosis/stenosis, disc disease, or neurotrauma ( $P < 0.0001$ ,  $P < 0.0001$ ,  $P < 0.0001$ ,  $P < 0.0001$ ,  $P = 0.0001$ , respectively).

## Conclusions

There appears to be an effect of insurance status on whether a patient with a general neurosurgical condition is transferred from nonteaching hospitals to teaching hospitals.

## Learning Objectives

By the conclusion of the session, participants should be able to:

- 1) Discuss factors influencing transfer of patients,
- 2) Discuss the effects of insurance status on transfers of patients;
- 3) Discuss the use and limitations of the Nationwide Inpatient Sample Database.