Readmissions in Neurosurgery: A Qualitative Inquiry

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Key words
- Institute for Healthcare Improvement
- Neurosurgery
- Readmission
- STAAR

Abbreviations and Acronyms
IHI: Institute for Healthcare Improvement
STAAR: STate Action on Avoidable Rehospitalizations

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Citation: World Neurosurg. (2014) 82, 3/4:376-379.
http://dx.doi.org/10.1016/j.wneu.2014.02.028

Journal homepage: www.WORLDNEUROSURGERY.org

Available online: www.sciencedirect.com

OBJECTIVE: **To identify deficiencies leading to readmissions to the University of Florida Neurosurgery Service by using the Institute for Healthcare Improvement STate Action on Avoidable Rehospitalizations Readmissions diagnostic tool and to report the opinions of patients, their families, and health care providers.**

METHODS: **A retrospective review of hospital admission and discharge data was conducted. All patients who met eligibility criteria and who were discharged from the neurosurgery service between January 1 and March 31, 2012, and readmitted within 30 days after discharge ($n = 74$; 66 patients; 7 multiple readmissions) were included. A chart review revealed potential precipitating factors. Health care providers, patients, and family members were also interviewed. Median values and frequencies were used to summarize the data.**

RESULTS: **The 30-day readmission rate on the neurosurgery service was 14%. Problems associated with wound care accounted for 24% of readmissions, neurologic conditions accounted for 50%, and other medical conditions accounted for 26%. Patients and providers agreed on the medical diagnoses resulting in readmission, but providers also often named "patient noncompliance" as a factor leading to readmission, whereas patients often thought they either were "sent home too early" or had a "general decline with no improvement."**

CONCLUSIONS: **Systematic patterns and common themes associated with patient readmissions were identified for a neurosurgical service. These findings are now being used to implement changes in discharge planning.**

INTRODUCTION

Despite the increasing cost of health care, Medicare and the U.S. health care delivery system have been plagued by questions of quality. With Medicare expenditures projected to increase by $410.6 billion during the years 2010–2020 (3), growing concerns have led to policy changes, specifically the Patient Protection and Affordable Care Act. Included in the Patient Protection and Affordable Care Act are changes to the fee-for-service Medicare benefits package intended to reduce costs and improve patient outcomes (10). One goal of the Patient Protection and Affordable Care Act is to reduce hospital readmissions or rehospitalizations, which are defined as the admittance of a patient shortly after discharge. As a result of this legislation, as of October 2013, the Center for Medicare and Medicaid Services has the ability to penalize financially hospitals with disproportionately large readmission rates (10). At the present time, the Medicare Payment and Advisory Commission is using hospital readmission rates as an indicator of quality and efficiency (8). With the Medicare Payment and Advisory Commission reporting that 75% of all 30-day hospital readmissions have the potential to be avoided, reducing readmissions can result in an estimated cost savings of >$12 billion annually (8).

Although researchers have investigated the causes of rehospitalizations in relation to specific conditions and the quality of care provided by hospitals, the factors associated with readmission rates on the neurosurgery service remain largely uninvestigated. In 2009, the Institute for Healthcare Improvement (IHI) began the STate Action on Avoidable Rehospitalizations (STAAR) program. The STAAR program intends to decrease rehospitalizations by improving transitions of care and prompting policy makers to reform health care practices (6). The IHI STAAR readmissions diagnostic tool is composed of 2 sections: a review of readmitted patient charts, and an interview with patients, family members, and health care providers (11). We used this tool to determine the specific causes of readmission on a busy neurosurgical service and to gain insight into methods of reducing readmissions.

METHODS

Design and Sample

The institutional review board of the University of Florida, Gainesville, approved this study. Because data from patient charts are collected as part of routine quality control, a waiver of consent was granted by the institutional review board. Informed consent was obtained from patients who agreed to be interviewed for this study.

A retrospective review of hospital admissions and discharge data was conducted. All patients discharged from the neurosurgery service between January 1 and March 31, 2012, and readmitted within 30 days after discharge were included in the study. Patients were excluded if they were readmitted within 30 days for a scheduled procedure. All readmissions within 30 days of discharge were included, regardless of the readmitting service.

Data Collection

We identified 66 readmissions. Chart reviews were also conducted on the 66 readmitted patients. Each chart review examined 9 questions for each readmission in accordance with the IHI STAAR readmissions diagnostic tool (Table 1). Patient charts were also reviewed to examine the discharge process to identify common systematic patterns and themes associated with readmissions on the neurosurgery service. In addition, 28 of the 66 patients and family members (42%) were interviewed using the questions in the IHI STAAR readmissions diagnostic tool. The patient and family interviews consist of 6 questions (Table 2). Additionally, 6 physicians and 5 midlevel health care providers were asked to conduct a brief chart review for each patient readmitted under their care and answer the question "Why do you think this patient was readmitted?"

Table 1. Institute for Healthcare Improvement STate Action on Avoidable Rehospitalizations Chart Review of Patient Readmissions

Number of days between the last discharge and readmission date?
Was the follow-up physician visit scheduled before discharge? (yes/no)
If yes, was the patient able to attend the office visit? (yes/no)
Were there any urgent clinic/ED visits before readmission? (yes/no)
Functional status of the patient on discharge?
Was a clear discharge plan documented? (yes/no)
Was evidence of "Teach Back" documented? (yes/no)
List any documented reasons for readmission.
Did any social conditions (transportation, lack of money for medication, lack of housing) contribute to the readmission? (yes/no)

ED, emergency department.

Table 2. Institute for Healthcare Improvement STate Action on Avoidable Rehospitalizations Patient Interview Questions

How do you think you became sick enough to come back to the hospital?	
Did you see your physician or the physician's nurse in the office before you returned to the hospital? (yes/no)	
If yes, which physician (PCP or specialist) did you see?	If no, why not?
Describe any difficulties you had in getting an appointment or getting to the office visit.	
Has anything gotten in the way of your taking your medicines?	
How do you take your medicines and set up your pills each day?	
Describe your typical meals since you got home.	

PCP, primary care physician.

Data Analysis

Interview responses were coded into discrete categories. A descriptive analysis consisting of median values and frequencies was used to summarize the collected patient data.

RESULTS

Between January 1 and March 31, 2012, the neurosurgery service had 626 cases eligible for readmission. The average length of stay for patients on the neurosurgery service was 6.0 days. The 30-day readmission rate on the neurosurgery service was 14%, the 14-day readmission rate was 9.3%, and the 7-day readmission rate was 5.9%. Of the 66 patients who were readmitted during this time, 45% were female, and 55% were male. Study participants had a median age of 57 years, with a range spanning from 3 months to 85 years. Although there were 66 patients who met the inclusion criteria for the study, there were 74 total readmissions with 7 patients experiencing multiple rehospitalizations.

Chart Review

The median time between discharge and readmission was 9 days. Approximately 7% of patients visited an urgent care center or emergency department before readmission. In all 74 readmissions, there was a clear documented discharge plan with a discharge condition of "stable." In 35% of the readmissions with a discharge condition classified as "stable," the patient had difficulties noted on the discharge examination. In 19% of cases, a follow-up visit was scheduled before discharge, with only 50% of patients able to attend the follow-up visit. In the remaining 81% of readmissions, the responsibility of scheduling a follow-up appointment was left to the patient. Reasons for readmission were coded and classified into 3 discrete categories. Problems associated with wound care accounted for 24% of patient readmissions, neurologic conditions and symptoms accounted for 50% of patient readmissions, and other medical conditions and symptoms accounted for 26% of patient readmissions on the neurosurgery service (Tables 3 and 4). Of the 74 readmitted cases, 25 required neurosurgical intervention. Additionally, our review of the discharge process indicated that most patients were discharged home or to a rehabilitation facility (Table 5).

Table 3. Institute for Healthcare Improvement STate Action on Avoidable Rehospitalizations Chart Review Results

Median number of days between discharge and readmission	9 days
Percentage of patients with scheduled follow-up before discharge	19%
Percentage of patients with scheduled follow-up that were able to attend	50%
Percentage of patients that visited the ED or urgent care center before readmission	7%
Percentage of readmissions with documentation of "Teach Back" education method	1.4%
Percentage of readmitted patients with documentation of social conditions	0%
Percentage of patients with functional deficits noted on discharge examination	35%
Percentage of readmitted patients with a clear discharge plan	100%

ED, emergency department.