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ID#140206

PUBLISHED ON
NOVEMBER 6, 2015

# Tahoe Healthcare Systems

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## The Hospital Readmissions Reduction Program

The high readmission level of hospital patients after they are discharged from the hospital is a significant concern for the US health care system. It is estimated that 20% of all hospitalized Medicare patients are readmitted within 30 days of hospitalization and 34% are readmitted within 90 days. The estimated cost of hospital readmissions is about $17.4 billion annually.[1] While some readmissions are due to normal medical complications, such high readmission rates are generally viewed as symptomatic of deeper problems in the US health care system, namely potential quality problems within hospitals, lack of coordination in follow-up care after discharge, and misaligned financial incentives to discharge patients early.

To address the problem, the 2010 Affordable Care Act established a hospital readmissions reduction program (HRRP). The program created financial incentives for hospitals to reduce readmissions by linking Medicare reimbursements to a hospital's risk-adjusted readmission rate. The initial phase of the HRRP, which began in October 2012, focused on three conditions: acute myocardial infarction (AMI), heart failure (HF), and pneumonia. Hospitals that had a three-year rolling readmission rate for these conditions that exceeded their risk-adjusted target were to be penalized a portion of their Medicare reimbursements. (See the CMS.gov website for details on the penalties.) For 2012, penalties could be as much 1% of the total reimbursements a hospital received for the three target conditions. In the first year of the program, 2,225 hospitals were subject to reduced payment penalties, with penalties totaling $225 million nationwide. The maximum penalties were set to increase to 3% of reimbursements by 2014.

## Tahoe Healthcare Systems

Tahoe Healthcare Systems is an integrated health care provider that owns and operates 14 hospitals in the Pacific Northwest. In 2012, approximately 18% of Tahoe's total revenues were

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**Acknowledgements**
*The authors are grateful to Carri Chan for insightful discussions.*



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insurance reimbursements from Medicare for the three conditions (acute myocardial infarction, heart failure, and pneumonia) covered by the HRRP. Senior managers at Tahoe were concerned that a significant portion of this revenue could be at risk due to HRRP penalties. Tahoe had already paid over $750,000 in fines in 2012 because their readmission rates exceeded the risk-adjusted targets. Under the new 2014 penalty rates, Tahoe's CFO, Leila Houssein, estimated its loss in Medicare reimbursements would rise to $8,000 per readmitted patient by 2014 if nothing was done to reduce the readmissions rates. Everyone at Tahoe felt the looming pressure of the HRRP penalties.

In response, the clinical staff in the Seattle hospital recently piloted a program called CareTracker. CareTracker combined patient education during and post hospitalization with periodic at-home monitoring of patients after discharge. The early results were promising: in the pilot study, CareTracker reduced the incidence of readmissions by 40% compared to a control group of patients not receiving the extra CareTracker treatment. However, the cost of the program was high; approximately $1,200 per patient.

Given these positive results and the concern over the impact of HRRP penalties over the coming years, Tahoe's management was contemplating rolling out CareTracker to all its hospitals. Before doing so, however, they asked Houssein to provide them with a better sense of the costs and benefits of the program. Toward this end, Houssein pulled data on all Tahoe system admissions over the last year for patients with AMI. The data is provided in the file Tahoe_Healthcare_Data.csv and the data dictionary is provided in Table 1.

**TABLE 1. DATA DICTIONARY FOR TAHOE_HEALTHCARE_DATA.CSV**

| Field | Description |
|---|---|
| age | Age at time of admission |
| sex | Gender. 0 = Male. 1 = Female. |
| flu_season | Flu Season (1 = Yes). Admission starting December through March |
| ed_admit | Admitted through the ED (1 = Yes). |
| severity score | Generic physiologic severity of illness score based on lab tests and vital signs |
| comorbidity score | Severity score based on patients' pre-existing diagnoses. |
| readmit30 | Indicator for hospital readmission within 30 days. 1 if readmitted, 0 otherwise. |

Houssein was pondering what insights she could glean from the data and what concrete recommendations she should make.

## Endnote

[1] Stephen F. Jencks, M.D., M.P.H., Mark V. Williams, M.D., and Eric A. Coleman, M.D., M.P.H., "Rehospitalizations among Patients in the Medicare Fee-for-Service Program," New England Journal of Medicine 360, no. 14 (2009): 1418-28.