Temporal Relationship and Risk Factors for Readmission to Acute Care Hospital from Inpatient Rehab

Samantha Willer, DO,MA[1], Anna Yumen, MSIV[2], Natasha Romanoski, DO[1], Lori Grafton, MD[1], Nancy Lokey, CRRN[1], Kristin Slavoski, MS[1]

1. Department of Physical Medicine and Rehabilitation, Penn State Health Milton S. Hershey Medical Center 2. Penn State College of Medicine, Hershey, PA

INTRO

- There is a need reduce hospital readmissions in attempts to reduce healthcare costs and improve patient outcomes
- Study Aim: determine if time of admission is related to acute care readmissions from an inpatient rehabilitation facility (IRF)

METHODS

- Retrospective chart review of all admissions to a free standing rehabilitation hospital from 1/1/2016 to 6/30/2016
- Multivariate logistic regression model with a 95% confidence interval compared the following variables
  - Time, date and month of admission
  - Age, sex, race
  - Admission diagnosis
  - Payer source
  - Referring hospital
  - FIM on admission and discharge
  - The following medical comorbidities

Steroid use	Peptic ulcer disease
Anticoagulation use	Liver Disease
MI	Renal disease
CHF	Dialysis
PVD	Primary malignancy
Stroke	Metastatic disease
COPD	LVAD
HTN	Tracheostomy
DM	Solid organ transplant

RESULTS

- Statistically significant relationships were found between lower discharge FIM scores, having an LVAD, steroid use, and history of solid organ transplant in relation to readmissions to acute care.
- No significant relationship between date and time of admission

Time and **day** of admission to the rehabilitation hospital does NOT increase **risk for readmission** to the acute care hospital, but having an **organ transplant**, being on **steroids**, having an **LVAD**, and having **lower FIM scores** does.

Demographics and Admissions Characteristics

	Not readmitted to acute care, # (%)	Readmitted to acute care, # (%)	P value
Admission Time			1.0000
After 5pm	161 (32%)	18 (32%)	
Before 5pm	337 (68%)	39(68%)	
Admission Day			0.4686
Weekday	453 (91%)	50 (88%)	
Weekend	45 (9%)	7 (12%)	

Take a picture for more information!

swiller@pennstatehealth.psu.edu @SamWillerDO

Multivariable Logistic Regression (Readmitted vs. Not Readmitted)

	OR (95% CI)
Admission FIM Score	0.93 (0.92-0.95)
LVAD	11.41 (2.05-63.35)
Steroid Use	3.32 (1.40-7.86)
Solid Organ Transplant	9.89 (1.53-63.93)

DISCUSSION

Based upon our data, time and day of admission to an inpatient rehabilitation facility did not increase the risk for readmission, however, this may vary between hospital settings with varying levels of resources and staffing available after hours.

There is a need for additional studies to identify other patient characteristics/comorbidities of those admitted to IRFs who statistically are at higher risk for readmission to the acute care hospital so that the providers in the IRFs might be more vigilant in preventing these potential complications.

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