Decreasing Hospital Readmission Rates at Ascension Providence Rochester Hospital

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Background

- Hospital readmissions (HR) are estimated to cost the US healthcare system 15-20 billion dollars annually. Approximately 1 in 5 Medicare fee-for-service patients discharged from a hospital are readmitted within 30 days.

- The Hospital Readmissions Reduction Program (HRRP) came into effect in 2013 which implemented financial penalties for hospitals with higher than average 30 day readmission rates.

- Ascension Providence Rochester Hospital (APRH) the current 30-day HR rate is 11% with a goal to be under 10%.

- We partnered with the multidisciplinary Readmission Workgroup at ARPH to conduct a quality improvement (QI) initiative aimed at reducing HRs.

Quality Improvement Objectives

- Long-term goal: Develop institutional level strategies and protocols to be implemented during any hospital admission that will lead to a decreased HR rate under 10%

- Baseline: Identify current factors associated with HRs at ARPH by examining HR data

- Implement: Plan Do Study Act (PDSA) cycle 1 to examine various metrics of current HRs at ARPH

Methods

- Ascension tracks HRs at ARPH through the software Tableau. We extracted 6 months of all cause HRs to analyze (April - September 2021)

- Information obtained from Tableau included:
  *Patient Name
  *Admitting Physician
  *Patient Age
  *Readmission Diagnosis
  *Discharge Date   *Number of days
between admissions

- For each HR we examined the initial hospital admission in Cerner for further metrics including:
  *Initial Admitting Diagnosis   *Primary Care
Physician
  *Resident Involvement   *1st admission length
of stay
  *Patient comorbidities
  *1st discharge location

Results

- A total of 590 HRs were identified in Tableau between April and September 2021. Corresponding initial hospital admissions were identified within the previous 30 days in Cerner (N = 590)

- Patient characteristics are identified in Table 1

Age	Mean = 67			
Number of Comorbidities	0, 4.5% (N=27)	1 , 8.3% (N=49)	2, 12% (71)	3, 75.2% (N=458)
Frequent HRs	Yes, 43% (N=256)	No, 57% (N=334)		

Table 1: Patient Characteristics

- The most common admitting diagnoses related to the initial hospital admission are shown in Figure 1 (all cause Respiratory (16%), Cardiac (15%), Sepsis/Infection (11%), Gastroenterology related (11%))

Figure 1: Most Common Initial Hospital Stay Admitting Diagnoses
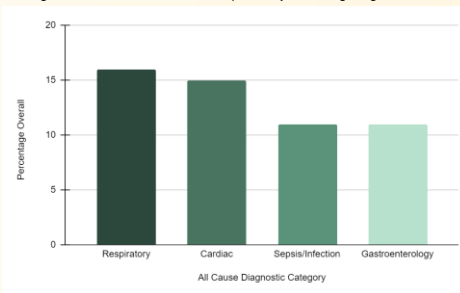
- The most common discharge locations after the initial hospital admission were: Home 63% (N=373), Unknown/not documented in discharge summary 16.6% (N=98), Subacute nursing or rehab facility 16% (N = 96), in hospital transfer 6% (N=36)

- The mean length of stay for the initial hospital admission was 6.2 days. The mean number of days between hospital admissions was 11.5 days.

- The Admitting Physician was the Patient's Primary Care Physician in 27.7% of the HRs examined (N = 164). Resident Physicians were involved in 44% of the HRs examined (Family Medicine 12%, Internal Medicine 32%)

- The HR admission diagnosis was the same or related to the initial hospital admission diagnosis 38% of the time (N = 231)

Results

- Factors complicated the initial hospital admission are shown in Table 2

Complication	Total Number	Percentage Overall
None	318	54
New Disease Diagnosis/Onset	131	22
Documentation	21	3.5
Discharged home with medical Equipment	18	3
Ward Transfer	15	2.5
No formal Diagnosis	10	1.7

Table 2: Complicating factors related to the initial hospital admission

Discussion

- Our results show that Patients with HRs at ARPH are more likely to be admitted to a physician who is not their Primary Care Physician and to a Non-Resident Physician. One limitation of this study is that we have not analyzed the total number of admissions for each physician. HRs it could be that the residency programs in fact have higher overall admission rates.

- Future directions for our quality improvement project will center around further analysis of patients with frequent HRs, patients admitted for respiratory, cardiac and infectious illnesses and those with a new disease diagnosis or onset during their initial hospital stay to determine potential interventions for patients with frequent HRs to decrease readmissions.

Public Health Implications

- Hospital readmissions are associated with financial burden for various stakeholders, including: the hospital, government, insurance companies, and patients.

- There are inherent risks for the patients as well, including nosocomial infections,adverse drug reactions, falls and disjointed care between a hospitalist and their Primary Care Physician (if not the same)

- It is our hope that our analysis will help ARPH to identify targeted areas to decrease hospital readmission rates at ARPH in addition to improving patient experiences and outcomes