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Title

Weathering the Seasons: Understanding the Impact on Hospital Readmissions

Priority 1 (Research Category)

Population health and epidemiology

Presenters

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Abstract

Context: The relationship between readmissions and seasonality is complex and poorly understood. Varying demographics and diagnoses by season suggest the need for tailored strategies to reduce readmissions. Estimating readmission numbers can aid hospitals in managing seasonal variations in capacity and staffing. Identifying risk factors for readmissions helps in developing strategies to lower the risks.

Objective: To determine the association between readmissions and season.

Study Design: Retrospective single-site cohort study of adults readmitted by a general medicine service line from January 2022 to December 2022. Data were extracted from Vizient's clinical database.

Setting or Dataset: Academic medical center.

Population Studied: Patient readmitted within 30 days.

Outcome Measures: Demographics, mean ICU days, observed and expected LOS, LOS index, discharge status, and payor status.

Results: This retrospective analysis included 729 readmissions (mean age 53.1, 95% CI 51.7-54.5) with 53.4% males. There were 55.4% blacks, 40.9% whites, and 3.9% other races. The readmissions by season were 200 (27.4%) in spring, 156 (21.4%) in summer, 191 (26.2%) in fall, and 182 (25.0%) in winter. The top 3 diagnoses in each season were as follows: (spring) sickle cell disease with crisis (SSD w C), 14.0%; sepsis, 8.50%; infection due to an indwelling urethral catheter, 4.00%; (summer) sepsis, 10.26%; SSD w C, 7.05%; type 1 DM with DKA; (fall) sepsis, 9.42%; SSD w C, 7.85%; acute kidney failure (AKF), 2.62%; (winter) sepsis, 8.79%; SSD w C, 8.24%; COVID-19, 4.94%. Significant differences in readmissions by season were observed for gender (p=0.04) and race (p=0.04). There was no statistical difference between seasons for age (p=0.37), mean number of ICU days (p=0.68), observed LOS (p=0.91), expected LOS (0.64), LOS index (p=0.93), number of patients that expired (p=0.91) or were discharged home (p=0.93), or payor status (p=0.13).

Conclusions: Our study found that readmissions for certain diagnoses like SSD w C and sepsis were common across all seasons. However, specific diagnoses like COVID-19 and AKF were more prevalent in winter and fall. Implementing standardized discharge plans for at-risk patients, such as transitional care management and early outpatient follow-up, may reduce readmission risk. Future studies should address the significant racial and gender disparities in readmissions across seasons.