Reducing Readmission

Analysis of factors contributing to inpatient readmission rates

Objectives

- Given current rates of inpatient re-admission, steps need to be taken to understand the factors behind what contributes to a patient's probability of re-admitting within 30 days of discharge.

- Questions to consider:
  - What is the primary admitting diagnosis for patients by age group?
  - Do diabetes diagnoses play a key role in readmission rates?
  - What groups of patients should be focused on for follow-up efforts in order to reduce readmission rates?

Diagnoses by Age Group

- For all age groups (with the exception of the 40 – 49 range), circulatory diagnoses were the most common.

- The "Other" category included all miscellaneous diagnoses not otherwise classified as circulatory, diabetes, digestive, injury, musculoskeletal, or respiratory

- It is worth noting that for all groups aside from 40-49, "Other" was the second most common diagnosis group.

Age Group	Primary Diagnosis	Percentage
40 to 49	Other	29.62%
50 to 59	Circulatory	28.21%
60 to 69	Circulatory	33.19%
70 to 79	Circulatory	34.99%
80 to 89	Circulatory	32.83%
90 to 99	Circulatory	30.40%

Diabetes Impact on Readmission Rates

	Readmitted	Not Readmitted	Total
Diabetic Patient	16.36%	18.80%	35.15%
Non-Diabetic Patient	30.66%	34.19%	64.85%
Total	47.02%	52.98%	100.00%

- Analysis indicated that diabetes did not play a significant role in readmission rates.[1]

- Of the 47% of patients who readmitted to the hospital, only 16% were patients with diabetes diagnoses.

- This is also supported by comparing overall readmission rate (47.0%), diabetic readmission rate (46.5%), and non-diabetic readmission rate (47.3%).

[1]Based on a chi-square test of observed and expected patient counts. P-value = 0.26 (not significant, threshold of P = 0.05).

Factors affecting readmission rates

Lab Tests

- Patients who received fewer than the median number of lab tests (44) were 3.0% less likely to be readmitted within 30 days.

Procedures

- Patients who received fewer than the median number of procedures (1), were 4.2% **more** likely to be readmitted within 30 days.

Medications Administered

- Patients who received fewer than the median number of medications administered (15) were 5.5% less likely to be readmitted within 30 days.

Recommendations

- The data available did not give indication as to the complexity of the case or treatment.

- Additional research and analysis would be recommended to investigate the trends found in testing, procedure, and medication impacts on readmission.
  - Are patients with increased treatment readmitting due to severity of condition?
  - Are things such as polypharmacy (interactions between multiple medications) affecting these patients who are readmitting?

- Collaboration with a team of physicians as subject matter experts would be helpful in beginning to answer these questions.

Source

Data source: "How can hospitals reduce readmissions?" competition through DataCamp (https://app.datacamp.com/learn/competitions/hospital-patient-readmissions)