Identifying the Factors Associated with Unplanned 30 Day Readmission in a Large Volume Trauma Center

Diana Clapp RN, BSN, TCRN, CCRN; Rebecca Tyrrell RN, BSN,CCCTM; Teri Gilbart

University of Maryland Medical Center
Baltimore, Maryland

Introduction

Trauma centers monitor multiple outcomes to identify the quality of care provided. Trauma center data bases, such as The American College of Surgeons Trauma Quality Improvement program (ACS TQIP) do not monitor 30 day readmission as a quality indicator. Additionally, as many as 75% of readmissions are to a different facility.

Some trauma centers may have inaccurate information as to frequency of unplanned readmissions. Moreover, causes of readmission at 30 days are diverse, including subsequent injury, complication of initial injury, wound infection, iatrogenic congestive heart failure and loss of fixation. Identifying the causes of readmissions will allow for focused prevention measures. In addition to the goals of minimizing healthcare costs related to readmissions, an upward of 20% of annual healthcare expenses, minimizing hospital readmissions will improve overall patient outcomes.

The readmission Reduction Committee was charged with identifying ways to impact readmissions in this organization that sees approximately 8,000 patients annually.
Before initiatives could be designed, analysis of the causes of unplanned readmissions was needed.

Goals

- Describe the factors leading to unplanned 30 day readmission within trauma patients.
- Analyze the effects of 30 day unplanned readmissions to the trauma patient, facility, and system.
- Demonstrate the feasibility and functionality of a multidisciplinary approach to reviewing readmissions and influencing system change in an attempt to reduce unplanned readmissions and improve quality of care.
- Identify areas upon which to focus within the continuum of care to reduce potential readmissions.

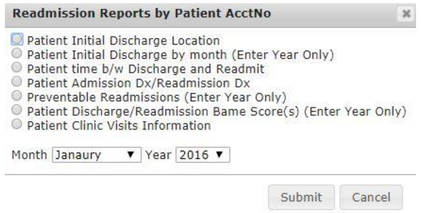
Project Design/Implementation

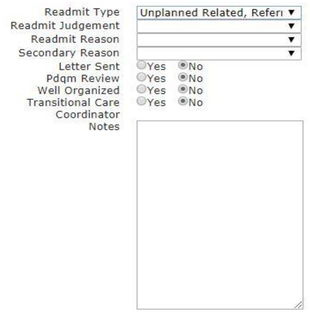
An Institutionally designed web based registry program was in existence but was modified by the informatics team to allow for:

- Identification of all readmissions of trauma patients within 30 days of discharge from the trauma center to either the trauma center or another system facility.
- Distinction of planned readmissions from unplanned readmissions.
- Integration of assessment and classification of readmissions to include preventability and contributing factors.

Review Process

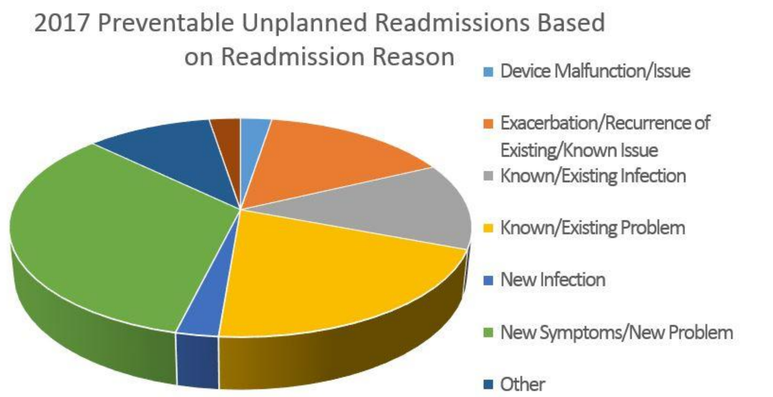
A list of readmissions is generated every Monday. The reviewer can complete a detailed evaluation of the patient record and care, then provide a classification of the readmission reason and preventability.

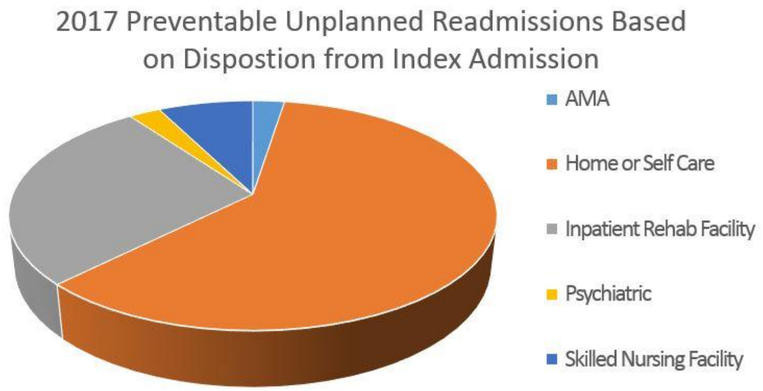




Reports can be generated to assess the causes of readmissions and the ways to improve the process.

Factors Associated with Readmissions





Outcomes/Conclusion

Review of the readmissions for calendar year 2016 indicates the majority of patients that are deemed to have preventable readmissions were initially discharged to home or self-care followed by a care facility. Knowing that home discharges more frequently experience unplanned readmissions will allow the committee to focus on improving the overall discharge process including improved planning, education, and enhancing the referral process to transitional care.

Review also demonstrated that infection, either new or re-emergence of a historic infection, were major causes of readmission allowing the team to focus efforts to ensure patients are discharged with appropriate anti-infective prescriptions and follow up appointments.
The readmission reasons in this facility do not appear to differ greatly in comparison to other institutions

Future Steps

- Formation of a readmission review data dictionary to ensure consistent and valid analysis
- Focus on improvement with the DC process of patients to home/self-care
- Enhancing the referral to transitional care

References

Use of Modified American College of Surgeons Trauma Quality Improvement Program to Enhance 30 -Day Post Trauma Readmission Detection. **Shapiro, David, et al.** American College of Surgeons, 2016, Journal of American College of Surgeons, pp. 865-9.

Rates, Patterns, and Determinants of Unplanned Readmission After Traumatic Injury. **Moore, Lynne, et al.** 2014, Annals of Surgery.

Risk Factors for Unplanned Readmissions in Older Adult Trauma Patients in Washington State: A competing Risk Analysis. **Fawcett, Vanessa, et al.** 2015, American College of Surgeons, pp. 330-338.

Acknowledgements

Many thanks to the Shock Trauma Leadership Team and Readmission Reduction Committee for supporting these changes to strengthen the Quality Program and the outcomes for our patients. Without commitment from the registry staff and informatics team, this redesign and the benefits it provided would not be possible.