Assessment of a Heart Failure 30-Day Readmission Risk Tool

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Objectives

Discuss the evidence regarding the 30-day readmission tool.

Describe the implementation of the tool using the Iowa model.

Discuss the findings of the project with implications for practice.
The goals of this project were to identify heart failure patients at risk for 30-day readmission, to provide a smooth transition from hospital to home, to improve the patient’s quality of life, and to reduce healthcare costs by decreasing the readmission rates for this patient population.
Background

- Heart Failure (HF) affects more than five million Americans
- HF is the #1 reason for hospital admissions in people over age 65
- Annual cost of HF hospitalizations $34.8 billion
- Approximately 25% are readmitted within 30 days
- Readmissions cost an estimated $17 billion a year
Background

- Target of legislative action
- Readmissions rates of hospitals are posted on Hospital Compare website (CMS)
- Fall 2012 Medicare payments will be reduced to hospitals with high readmission rates
Background

- It is not just about cost, there is a human factor
- Loss of independence for HF patients
- Quality of life decreases with each HF hospital readmission
All-Cause Mortality After Each Subsequent Hospitalization for HF

Kaplan-Meier cumulative mortality

HF
- 1\textsuperscript{st} admission (n = 14,374)
- 2\textsuperscript{nd} admission (n = 3,358)
- 3\textsuperscript{rd} admission (n = 1,123)
- 4\textsuperscript{th} admission (n = 417)

1\textsuperscript{st hospitalization}: 30-day mortality = 12%; 1-year mortality = 34%

Guiding Framework

- Iowa Model of Evidence-Based Practice to Promote Quality Care
- Priority to organization
- Team development
- Relevant research
- Pilot the change
- Evaluation and outcomes
- Dissemination of results
Synthesis of Literature

- 30-Day HF readmission risk models
- Transition from hospital discharge to home
- Lack of social support
- Cognitive dysfunction
- HF mortality risk models
- HF survival models
Intervention

- ESCAPE Risk Model (Evaluation Study of Congestive Heart Failure and Pulmonary Artery Catheterization Effectiveness)
  - Age > 70 years
  - BUN > 40 mg/dl
  - BUN > 90 mg/dl
  - Six minute walk test less than 300 feet
  - Sodium < 130mEq/l
  - CPR/mechanical ventilation
  - Furosemide dose > 240 mg at discharge
  - BNP level > 500 pg/dl
  - BNP level > 1300 pg/dl
Intervention

- Added features to ESCAPE Risk Tool
- Inadequate support systems
  - Living alone
  - Being homebound
  - No family available
- Cognitive dysfunction
Implementation

- Identify patients on admission
- BNP levels
- List of possible HF admission diagnoses
- Identified patients by number on tool
- Discharge list compared to admission data
Data Collection

- BNP Levels
- Admitting and discharge diagnoses
- ESCAPE Risk tool with modifications implemented and scored
Results

- Total of 51 patients evaluated
- 3 removed due to lack of BNP level
- 22 patients with low risk
- 13 patients with moderate risk
- 13 patients with high risk
Results

Readmission results
- 8 patients identified in October as high risk for readmission
- 2 of those patients were readmitted in November
Age Demographics

- 52% (n=25) Age ≤ 70 years
- 48% (n=23) Age > 70 years

- Age ≤ 70 years
- Age > 70 years
Gender Demographics

- Male: 56% (n=27)
- Female: 44% (n=21)
Days by Risk Group

Median Length of Stay in Days

- Low Risk: 4 days
- Moderate Risk: 5 days
- High Risk: 7 days
Plaza Medical Center Readmission Rates

Comparison of Readmission Rates

- November 2010: 11.10%
- November 2011: 6.45%
Conclusions

- ESCAPE tool with modifications did identify 2 patients as high risk who were readmitted.
- 6 other patients were identified as high risk but were not readmitted.
- High risk group had the longest length of stay.
- Tool can potentially be used for risk assessment.
- Further study is needed to establish validity and reliability.
Lessons Learned

- BNP levels are not always drawn on HF patients
- Including the BNP level as part of the ESCAPE tool is a strength but also a limitation
- Serial BNP levels are not recommended, admission and discharge BNP levels only
Lessons Learned

- Cognitive dysfunction is a common problem with HF patients
- Few clinicians document this finding on the inpatient medical record, only dementia is documented
- This became a limitation of the tool to accurately assess cognition
Lessons Learned

- One aspect of the tool evaluated the six minute walk test less than 300 feet.
- Author was dependent on nurses’ documentation of activity level.
- This was a limitation to correctly assess the patient’s ability to perform the walk test.
Future Directions

- First step to enhance tool development is to establish validity and reliability of the modified ESCAPE risk tool.
- Current risk models available all need further study.
Lack of social support described as living alone, homebound or lack of family support benefit from a smooth transition to home.

Early follow-up by the practitioner within 4-5 days of discharge is essential.

Use of the *virtual ward* described by Lewis (2010).

Follow-up phone calls within 2-3 days of discharge.
Cognitive dysfunction is a complex problem and is prevalent in the HF population.

Cognitive dysfunction is underappreciated by healthcare clinicians.

Lack of documentation in the pilot study seems to confirm this.

Nurses must be aware to adjust education based on cognition and include the home caregiver.
Future Directions

- Risk assessment for readmission is the first step
- Transitioning from hospital to home is critical
- Practitioners must see HF patients within 5-7 days post discharge
- Institute for Healthcare Improvement (2007) set forth a solid plan: enhanced admission assessment, enhanced teaching and learning, patient/family-centered handoff communication, and post acute care follow-up
Dissemination

- Share information with colleagues
- Poster/oral presentations
- Written articles
- Further study – planning the next step