Evaluation of Transitional Care through Home Care Services and Teaching/Learning Processes for Heart Failure Patients to Decrease 30-Day Hospital Readmissions

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Learning Objectives

- Describe the importance of self-care behaviors and the need for planning transitional care

- Describe the strengths and weaknesses of evidence-based Institute of Healthcare Institute (IHI) four process pillars for decreasing heart failure patients’ readmissions
Issue Statement

High prevalence of Heart Failure (HF) in the USA:

- 2% to 3% of population at age 65
- Greater than 80% in persons over age 80

More Medicare dollars (the government insurance payer for people > 65 years older) are spent for the diagnosis and treatment of heart failure (HF) than any other diagnosis.

- Over $37.2 billion spent in 2009 (AHA, 2009)
- 80% of patients hospitalized with heart failure are over 65 years old. (Hunt et al., 2009)
Hospitalization is in and of itself an independent risk factor for shortening survival in patients with chronic HF.

Hospital readmissions for HF: USA National Rates
- 24.7% at 30 days post discharge
- 50% at 6 months post discharge
Evidence-based multidisciplinary approaches are being recognized as having a significant role in:

- Decreasing the rate of hospital readmissions
- Reducing associated morbidity in elderly patients

The USA Patient Protection and Affordable Care Act of 2010 established financial incentives for hospitals to reduce readmissions for cardiovascular diseases.

- In October 2012, Medicare decreased reimbursement for selected diagnoses with 30-day readmissions, with heart failure one of the selected diagnoses.
Project Purpose/Study Questions

Is there a difference in the rate of readmission to the hospital within 30 days of discharge between:

- Patients who received components of transitional care with home care services than those who did not receive transitional care?

- Patients who received complete discharge instructions, as documented in the medical record, and those who did not receive complete discharge instructions?

- Patients who had either an ACE Inhibitor (ACEI) or an ARB prescribed on discharge for left ventricular dysfunction (if LVEF<40%) and those who were not prescribed either of these medications?

- Evaluate the “Institute of Healthcare Improvement (IHI): Transforming Care at the Bedside How-to-Guide: Creating an Ideal Transition Home for Patients with Heart Failure” four key processes.
**Flow Chart: Heart Failure Patients**

1. **Patient hospitalized for heart failure**
   - Under care of cardiologist and/or other practitioners

2. **Patient receiving care and treatments**
   - Under care of primary physician, cardiologist, hospitalist, or other practitioners

3. **Patient ready for discharge**
   - Discharge instructions given?
     - **Yes**
       - **Follow up Medical/APN appointment?**
         - **No**
           - **ACE Inhibitor or ARB Ordered if LVEF<40%?**
             - **No**
               - **Total medications upon discharge**
             - **Yes**
               - **Patient discharged**
     - **No**
       - **Patient discharged**

4. **Need for rehospitalization?**
   - **Yes**
     - **Followed in heart failure program With ANPs?**
   - **No**
     - **Patient under care provider in community**

5. **To home**
   - **To home with home care**
   - **To nursing home or to inpatient rehab (excluded from study population)**
Methodology

Study Design and Setting

- **Setting:** A large teaching hospital in New Jersey, USA, with an integrated home care agency.

- **Patients:** Medicare patients HF patients (N=76) discharged over the first quarter of the year with a primary diagnosis of HF.
  - Discharged to home for self-care (n=40)
  - Discharged to home care services (n=36)
  - All-cause hospital readmissions within 30 days of the index hospital discharge date identified.

- Retrospective chart reviews were performed

- **SPSS™ version 17 for Windows** was utilized for the statistical analysis.
Study Variables

- **Main dependent variable:**
  - 30-day hospital readmission

- **Independent variables identified:**
  - Demographic variables, e.g. age, gender, race, marital status, living arrangements
  - Discharge disposition variable, i.e. home for self-care or home for home care services
  - Complete discharge instructions documented
  - Treatment with an Angiotensin Enzyme Inhibitor (ACEI) or Angiotensin II Receptor Blocker (ARB) if there was left ventricular dysfunction <40%
  - Clinical variables, e.g. comorbidities, lab results, severity of illness, length of hospital stay (LOS)
Findings: Readmissions for Self-Care and Home Care Patients

- There was no significant difference in hospital readmissions within 30-days between patients discharged to self-care (n= 7 of 40, 17.5%) and home care services (n=11 of 36, 30.5%), \( p = 0.181 \).

  - The combined readmission rate was 23.7%, slightly lower than the national rate of 24.7%.

  - Home care patients were sicker, based on functional severity with dyspnea; however, they did not have statistically higher readmissions.
Findings: Demographics

- The home care patients were older, predominantly female and single/divorced/widowed:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Self-care</th>
<th>Home care</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean, S.D.)</td>
<td>80.7 (8.7)</td>
<td>85.9 (5.9)</td>
<td>0.003</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female (%)</td>
<td>47.5%</td>
<td>78%</td>
<td>0.007</td>
</tr>
<tr>
<td>Male (%)</td>
<td>52.5%</td>
<td>22%</td>
<td>0.007</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single/divorced/widowed</td>
<td>45%</td>
<td>75%</td>
<td>0.008</td>
</tr>
</tbody>
</table>

- Both groups were white/Caucasian, lived with others, and spoke English.
Findings: Severity of Illness, LOS, Inpatient Costs (cont’d)

- On the index admission, the home care patients had a higher functional severity of illness, a longer length of stay (LOS), and therefore higher inpatient charges:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Self-care</th>
<th>Home care</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYHA Functional Class III/IV (n,%)</td>
<td>27 (69%)</td>
<td>34 (95%)</td>
<td>0.002</td>
</tr>
<tr>
<td>Hospital LOS (Mean, S.D.)</td>
<td>3.13 (1.98)</td>
<td>4.97 (2.58)</td>
<td>0.001</td>
</tr>
<tr>
<td>Inpatient charges (Mean, S.D.)</td>
<td>$20,771 ($12,594)</td>
<td>$29,335 ($14,480)</td>
<td>0.008</td>
</tr>
</tbody>
</table>

- There were *no significant differences* between the groups in primary heart failure type, comorbidities, lab values, patient teaching, number of medications on discharge, use of ACEI or ARBs, Beta blockers, diuretics, and planned follow up appointments.
Findings: Severity of Illness, LOS, Inpatient Costs

- All patients readmitted within 30-days had a higher severity of their HF illness than those not readmitted:
  - For Stage of Heart Failure, there was a significant difference in Stage D (most severe HF) in the readmitted patients.
  - For the NYHA Classes of HF, there was a significant difference in the combined Class III/IV (most severe limitations) in the readmitted patients versus those not readmitted.
  - Only 50% of patients in the end stage of disease had palliative care discussions documented in their records.
Findings: Readmissions for LVEF < 40%

- Patients with LVEF \( \leq 40\% \), there was no significant difference in hospital readmissions within 30-days between patients discharged on ACEI or ARB in not readmitted.

- 94\% of non-readmitted patients and 100\% of readmitted patients used beta-blockers, above reported national results of 92.2\% (Fonarow et al., 2010).

- 83\% of non-readmitted patients and 75\% of readmitted patients used ACEI or ARBs with room for improvements, slightly below the national results of 85.1\% (Fonarow et al., 2010).
Findings: Readmissions for Patients with Complete Discharge Instructions

- There was no significant difference in hospital readmissions for patients who received complete discharge instructions for those not readmitted.

- As additional findings will indicate, there are opportunities to improve the teaching/learning processes.

- Although teaching was documented, it was not always specific to who was taught, what materials were utilized, and what was learned.
Findings: Home Care Services

- There was no significant difference between the varied use of multidisciplinary services received by patients in home care who were readmitted and those who were not readmitted:
  - Most patients received a combination of visits for skilled nursing services and physical therapy.
  - The mean number of days on home care was 10.8 days ($SD=7.3$) prior to readmission with skilled nursing visits was 2.7 ($SD=1.6$) prior to readmission.
  - Additional services rendered were occupational therapy, medical social worker, and nutritional services.
Findings: Home Care Services (cont’d)

- Telehealth monitoring was not utilized at that time in home care as a standard part of the HF disease management program.

- Teaching materials utilized in home care were very descriptive and specific regarding topics on managing heart failure.

- Managers identified that more “coaching behaviors” by home care staff were needed for this chronic disease management.
Findings: Readmissions & Symptoms

Prior to the hospital admission, most patients had incidence of early symptoms (e.g. weight gain, increased edema, increased dyspnea, increased fatigue):

- 37% reported symptoms from day of admission to 3 days prior to admission
- 48% reported symptoms from 4-7 days prior to admission
- 11% reported symptoms 1-2 weeks prior to admission
- 4% reported symptoms 2-4 weeks prior to admission
Findings: Readmission Reasons

- Of the eighteen patient readmitted, the reasons were variable but most of emergency nature:
  - Almost all readmissions were on an emergency basis (89%):
    - Fluid overload: 33%
    - Unresolved or new pneumonia: 17%
    - Pacemaker insertion: 11%
    - Anemic, blood transfusion: 11%
    - Other reasons, i.e. sepsis, dehydration, elevated potassium, evaluation after fall at home
- One admission was an elective work up for heart valve surgery.
Findings: Readmissions (cont’d)

- There was a higher readmission rate from HF patients with a longer LOS on their index admission.
  - The readmitted patients had a mean LOS of 5.5 days, (SD=2.6) as compared to non-readmitted patient mean LOS of 3.5 days (SD=2.2), at $p=0.002$.
  - These are sicker, more complex patients.
Findings: Gap Analysis

“Gap Analysis” of process measures based on the IHI “four critical pillars:”

- **Pillar 1:** Admission assessment for post-discharge needs by case managers were provided within the first day or two of admission.
  - However, the multidisciplinary care plan does not indicate the patient’s primary advocate/caregiver and does not indicate the teaching needs and plan for action.

- **Pillar 2:** Teaching learning processes were not strong.
  - Improvements needed in timing of teaching and learning as well as more family involvement needed.
  - Patient teaching about medications and self-care usually noted only at time of discharge instructions.
  - “Teach Back” not regularly utilized to evaluate learning.
Findings: Gap Analysis (cont’d)

- **Pillar 3: Patient and family-centered handoff communication needs improvement.**
  - Typed medication lists upon discharge provided to clearly indicate discharge medications as new, continued or to be discontinued.
  - Discharge diet not always clear on sodium restrictions needed.
  - Not clearly documented regarding what patient material is provided to patient and family.

- **Pillar 4: Post acute follow-up plan was strong.**
  - Patients had appointments with dates and time within 7 days post discharge or had directions to schedule a follow up appointment, most within 7 days of discharge.
  - Home care cases were opened promptly.
Implication of Project

- Opportunities exist for improving the teaching and learning processes.

- Further nurse evaluation of patient self-care behaviors and modeling of these behaviors is needed.
  - Teaching skills is more important than just imparting knowledge by health care workers.

- Further assess and utilize the patient’s actual pre-hospital symptoms (increased edema, weight gain, increased dyspnea) and hospital experience to reinforce patient/family self-care activities and where improvements are needed.

- Family involvement is essential, especially in the elderly with their deficit in self-recognition of their symptoms and delays in decision making.
Implication of Project (cont’d)

- Improvements are needed in the clarity of dietary instructions and materials for teaching and evaluating learning in the hospital.
  - Need clear diet orders
  - Need clear sodium restrictions

- Telehealth monitoring may serve as a stronger component of the hospital system’s disease management program for HF patients and other chronic conditions.
  - The literature describes that self-management builds confidence and is important for successful self-management in chronic conditions.
Implications of Project (cont’d)

- Palliative care
  - Opportunities for more discussion and documentation.

- Integrated delivery systems should be best positioned to work together for the changing reimbursement methodologies, e.g. bundled payments, building accountable care organizations.
  - Further enhance transitional care activities and evaluate their outcomes to decrease readmissions.
Audience Questions

- Questions?
  - Thank you!!

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References (cont’d)


