Strategies for Reducing the Hospital Readmission Rates of Heart Failure Patients
Susan McClintock, MSN, APRN, Rhonda Mose, MSN, ANP-BC, and Lauren F. Smith, ACNP-BC

ABSTRACT
About 1 in 4 Medicare patients with a discharge diagnosis of heart failure (HF) are readmitted within 30 days of discharge. With the Affordable Care Act that was passed into law in 2010, a section in the Social Security Act established a program called the Hospital Readmissions Reduction Program. This program requires the Centers for Medicare and Medicaid Services to reduce payments to hospitals for HF patients who are readmitted within 30 days of discharge. The purpose of this article is to review current HF readmission prevention strategies for effectiveness.

Keywords: failure, heart, prevention, readmission
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It is estimated that nearly 5 million Americans are living with heart failure (HF), and a staggering 550,000 new cases are diagnosed each year.1 The diagnosis of HF has been associated with impaired functional status and premature death, with mortality rates as high as 50% within 5 years of diagnosis.2

The incidence of HF increases with age, approaching approximately 10 per 1,000 people after age 65.2 HF is the leading diagnosis and cause of hospitalization among patients 65 and older, comprising 80% of all HF-related hospitalizations.3 HF is the most expensive diagnosis-related group, translating into 5 million hospital stays per year at an estimated cost of $8 billion.2 The 90-day readmission rate for an HF patient is in the range of 15%-30%, and recent data suggest that approximately one half of those readmissions are preventable.2 The purpose of this article is to review current HF readmission prevention strategies for effectiveness.

READMISSION STATISTICS
HF is the only cardiac disease continuing to increase in prevalence, which makes it a major public health problem.2 Additionally, HF is a complex, progressive disease that often results in an adverse outcome. The most costly outcome is hospital readmission.4 One fifth of Medicare beneficiaries are rehospitalized within 30 days of discharge, and more than one third are readmitted within 90 days.5 The overall average 90-day readmission rate is in the range of 15%-30%.2 Approximately 90% of the readmissions attributed to HF are not planned and potentially preventable, translating into $17 billion or nearly 20% of Medicare’s hospital payments.5

One method being implemented by Medicare in an effort to reduce the cost of readmission is to lower the reimbursement rates. Medicare recently proposed a payment reform that affects hospitals with high readmission rates. Twenty percent of the original admission payment will be withheld if a patient is readmitted within 7 days, and 10% will be withheld if readmission occurs within 15 days of discharge.1 Despite the potential loss of repayment, no evidence has been gathered that shows any substantial decline in the HF readmission rates over the past 2 years.

A national cross-sectional study was conducted by Bradley et al6 that examined 594 hospitals and the use of reported key practices intended to reduce readmissions for HF patients. The study concluded that most of the hospitals examined had no comprehensive set of practices in place to reduce readmissions.6
Unfortunately, even hospitals with recommended practices and early follow-up procedures in place have readmission rates of up to 20%.\(^5\)

**INPATIENT MEASURES**
Comprehensive medication reconciliation to ensure an optimal pharmacologic regimen before discharge from the hospital is believed to be effective in reducing readmission rates. Communicating the most recent medication list at admission as well as going over the current list at discharge is important to both adherence and compliance.\(^1\) According to Bradley et al,\(^6\) the responsibility for medication reconciliation was not formally assigned at 14% of hospitals studied, yet nearly three quarters reported having an electronic medical record to facilitate the reconciliation of patients’ medications. Despite the 77% of hospitals in the Bradley et al study reporting patients received all medication details at discharge, there was a lack of standard processes for both reconciliation and patient education regarding medications.

Another measure discussed in the literature focused on the need for adequate discharge planning to ensure home needs will be met. According to the study by Annema et al,\(^4\) one of the main conclusions for readmission was the fact that patients, their caregivers, and health care providers do not share the same perspective on the cause for readmission. Judgment on readmission was based on individual perception. The study also found that insufficient professional help, nonadherence, and knowledge deficit are important factors in preventing readmission but confirmed that education alone is not enough to prevent readmission. Unfortunately, there is a disconnect in communication between the patient, family, and their health care team; a realization that chronically ill patients will be readmitted regardless of the intervention is echoed throughout medical literature (Table 1).

**OUTPATIENT MEASURES**
There has been a shift in care from the hospital to the clinic and home that includes outpatient measures and multidisciplinary follow-up. According to Di Salvo and Stevenson,\(^3\) many types of interventions have reduced HF readmissions by 14%–87%. These interventions include case management, HF clinics, mailings, telemonitoring, and home health. Data on prespecified program outcomes, such as the Partners Heart Care Program, provide benchmark information for continuous quality improvement. The data collected focus on quality of care, mortality, hospital admission, functional status, and procedure costs. The most critical lesson learned in development to date is the necessity of precise tailoring of the program to each patient and providing needs with local oversight and management. Di Salvo and Stevenson reported that through self-monitoring and education, patients should move toward ever-increasing self-empowerment in their management of HF. Unfortunately, recent studies suggest that patients have inadequate information, and this area of readmission prevention has rarely been studied.\(^7\) This simple yet vital aspect of care can help improve adherence to an aftercare regimen. Subramanian et al\(^7\) looked at HF disease management programs that emphasized dietary counseling and/or sodium intake reduction and improved functional capacity. Even though patients reported receiving education about salt restriction (87%) and exercise (78%), they reported adhering to a low-salt diet for a mean of 4.9 days and exercising for a mean of 2.2 of 7 days.\(^7\) This statistical information supports that education is only a part of the puzzle for complex HF patients.

Timely follow-up by primary care physicians, specialists, or any member of the health care team is important. The days immediately after discharge are very critical and can have a direct impact on rehospitalization rates.\(^8\) The Hospital to Home is a national quality improvement initiative by the American College of Cardiology and the Institute for Healthcare Improvement. The “See You In 7” was the first Hospital to Home challenge launched in March 2011 to focus on improving early follow-up by ensuring

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**Table 1. Effective Inpatient Measures**

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<td>One hour of heart failure education before discharge</td>
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<td>Comprehensive medication reconciliation</td>
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<td>Adequate discharge planning to ensure home care needs are met</td>
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<td>Communication between patient, family, and health care team</td>
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patients with a HF diagnosis were scheduled for a follow-up appointment within 7 days of discharge.8 The Hernandez et al5 study found 30-day readmission rates in hospitals were lower with early follow-up; prospective studies must be used to understand the relationship.

Five million of the 44 million American caregivers are providing care for loved ones diagnosed with HF; the role of family support in outpatient measures is worth examining because family intervention has yielded improved outcomes and lower readmission rates.9 However, it is hard to determine the exact impact because of the limited amount of family tested interventions. Saunders10 found that family caregivers of HF patients are vital to disease management and quality of life. Because the frequency of readmission and days hospitalized are the most common outcomes monitored by HF programs, nursing interventions targeting caregiver burden and depression may impact these patient outcomes as well. The study also found that both caregiver stress and depression have been associated with HF patient hospitalization. For those caring for HF patients, respite care-giving decreased the family burden and showed a promising alternative approach to care.10 Dunbar et al11 found, based on a review of the literature, family influence had a direct effect on HF patients’ self-care and outcomes. In conclusion, a supportive family structure leads to overall health in HF families.

Cardiac rehabilitation is an increasingly popular strategy for patients with HF, but there are limited studies documenting its role in reducing hospital readmission rates. It can be expected that more data will be forthcoming (Table 2).

**THE ROLE OF THE NURSE PRACTITIONER**

In reviewing the HF literature, significant differences appear in studies pertaining to the interventions used as well as the population, duration, and setting of the studies. These significant differences create a limitation on how to apply strategies that work on a complex patient population. Lowery et al12 studied 969 veterans at six Veterans Administration medical centers and found significantly fewer HF and all-cause admissions in the nurse practitioner (NP)-led model compared with the primary care model. The mortality data reported 8% in the NP-led group compared with 17.7% mortality in the control group at 1 year. The NPs were assessing and monitoring patients’ symptoms, optimizing their medications, implementing pathways, discussing patients’ conditions with the primary care providers, and coordinating care as needed with other specialties.

Another Veteran’s Administration study found that telephone titration of HF medications was feasible and safe, and achieved a 97% success rate of patients followed by a registered nurse—managed, NP-supervised clinic.13 This time-sparing program provides a positive effect on the HF readmission rates proving to be cost-effective. Another promising finding was that in 42% of patients with a baseline ejection fraction less than 35%, the overall ejection fraction increased by 10% after 6 months, providing another savings to the hospital by reducing the number of patients requiring expensive procedures or devices.13

Although small, based on only 20 participants “in an effort to bridge the gap between research and practice,” the Brandon et al2 study proved that an NP-led telephone intervention reduced the number of readmissions significantly. In 1 retrospective cohort record review of HF patients admitted in a Texas hospital, the NP-led program 30-day readmission rates remained at or below 15% compared with 19%-22% before the program.14 In a pilot study conducted at Brigham and Women’s Hospital, 15.6% of the NP-led hospital to home patients were readmitted within 30 days of discharge compared with 23.5%, the average hospital-wide HF readmission.15 Even though the current research has shown promise in the NPs’ role at reducing readmission, more of these programs and studies are needed.

<table>
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<th>Table 2. Effective Outpatient Measures</th>
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<td>Early follow-up</td>
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<td>Cardiac rehabilitation</td>
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CONCLUSION

HF readmission prevention should involve HF self-management education, ongoing follow-up, and support systems. Strategies include identifying and addressing barriers to care, setting precise goals, incorporating the use of available sources with patients and their caregivers, and integrating evidence-based guidelines into practice. HF readmission prevention starts from the first day of diagnosis through hospital stay, discharge, and follow-up. The type of follow-up can vary and could include telehealth, home health, HF clinic visits, or cardiac rehabilitation. HF patients should be diagnosed without delay and begin appropriate management using multidisciplinary teams including NPs, physicians, nutritionists, HF clinical specialists, physical therapists, pharmacists, palliative care, and behavioral counseling groups (for self-discipline and adherence to medication and lifestyle change). Adequate health education needs to be given about the disease process, medication, diet, physical activity, signs, and symptoms of HF exacerbation and how to prevent exacerbation in order to successfully reduce HF readmission rates.

References


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