

Meet Your Heart Failure Team



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Heart failure (HF) is the leading cause of hospitalization in the US among those age 65 years and older.¹ The incidence and prevalence continues to rise as the population ages and individuals survive cardiovascular events eventually leading to HF. The impact of this cardiovascular syndrome is enormous and the associated economic and psychosocial implications are staggering. Hospital readmissions cost the Center for Medicare and Medicaid Services (CMS) \$17.4 billion annually with HF being the primary diagnosis for rehospitalization.² Moreover, the largest percentage of expenditures related to HF are directly attributable to hospital costs.³ Though there have been significant improvements in patient outcomes with medical therapy, the frequency of HF readmissions remains unchanged and continues to rise.⁴

In 2009, CMS mandated public reporting of all-cause readmission rates after HF hospitalization and the following year the Patient Protection and Affordable Care Act established financial penalties for hospitals with 30-day readmission rates higher than the national benchmark.⁵ During a time with reduced financial resources, US hospitals are now challenged to decrease length of stay and 30-day readmission rates, and also improve performance measures. To positively impact quality metrics and patient outcomes, a structured approach to assessment and management of this complex patient population can ensure the highest likelihood for success. Inpatient and outpatient multidisciplinary teams caring for patients across the HF healthcare continuum must be able to identify patients quickly, mobilize resources efficiently, and deliver guideline-directed medical therapy (GDMT).

Heart failure teams are designed to address the complex issues that surround this patient population. Program and team models differ significantly with regards to the multidisciplinary team members, intervention focus and other management components across a variety of care settings. Heart failure program designs are influenced by the patient population in a particular area or region as well as the resources available to manage them. Although some programs and team dynamics have proven to be effective, others have not.⁸ It is important to understand the characteristics of a successful multidisciplinary team so that these aspects may be incorporated into practice to promote effective care delivery and improve patient outcomes.

How does an inpatient team measure success?

An admission with decompensated heart failure is prognostic for future morbidity and mortality. There is a 50% six-month readmission rate following a HF hospitalization.⁹ Also, the one-year mortality rate following an admission is nearly 30%.⁷ One way to ensure success is to shore up outpatient management to avoid admissions. Another way to appraise success is in examining process and outcomes measures. These two categories of interventions have become an integral piece when evaluating the quality of care. Measures of process performance such as evaluation of LV systolic function, receiving an ACE inhibitor with LV systolic dysfunction unless contraindicated, and discharge instructions (to include the activity level, diet, discharge medications, weight monitoring and what to do when experiencing worsening symptoms) and follow up appointment within 5 -7 days post discharge; focus on the aspects of care that are delivered to the patient. These particular measures are derived from guideline-based recommendations but have had limitations in evaluating the quality of HF care. To better

discern the quality of HF care, the combined use of outcome measures with performance measures is done. Outcome measures may be applied universally across systems and to almost all patients.⁹

There are a number of outcome measures used for the assessment of care in patients with HF. The Agency for Health Research and Quality developed the Congestive HF Mortality Rate and the Congestive HF Admission Rate. The Centers for Medicare and Medicaid Services have developed the HF 30-Day Mortality Rate and the HF 30-Day Risk-Stratified HF Readmission Rate.⁹ The ACCF/AHA/American Medical Association-Physician Consortium for Performance Improvement (AMA-PCPI) published revised performance measures in 2011 that outline process measures for inpatient and outpatient HF care. The AACF/AHA/AMA-PCPI 2011 HF Measurement Set for the inpatient care setting include the following measures¹⁰:

- LVEF Assessment: Patients aged ≥ 18 years with a principal diagnosis of HF with documentation in the hospital record of the results of an LVEF assessment performed either before arrival or during hospitalization, or documentation in the hospital record that LVEF assessment is planned after discharge
- Post-discharge appointment: Regardless of age, patients discharged from an inpatient facility to ambulatory care or home health care with a principal diagnosis of HF for whom a follow-up appointment was scheduled and documented, including location, date, and time for a follow-up office visit or home health visit

The AACF/AHA/AMA-PCPI 2011 HF Measurement Set for the outpatient care setting include the following measures:¹⁰

- LVEF assessment: Patients aged ≥ 18 years with a diagnosis of HF for who the quantitative or qualitative results of a recent or prior (any time in the past) LVEF assessment is documented within a 12-month period
- Symptom and activity assessment: Patients aged ≥ 18 years with a diagnosis of HF for who quantitative results of an evaluation of both current level of activity and clinical symptoms documented
- Symptom management: Patients aged ≥ 18 years with a diagnosis of HF for who the quantitative results of an evaluation of both level of activity and clinical symptoms documented in which patient symptoms have improved or remained consistent with treatment goals since last assessment or patient symptoms have demonstrated clinically important deterioration since last assessment with a documented plan of care
- Self-care education: Patients aged ≥ 18 years with a diagnosis of HF for who were provided with self-care education on ≥ 3 elements of education during ≥ 1 visits within a 12-month period. Elements of self-care are defined and measured with different scales. The literature describes examples of self-care including symptom recognition, dietary restrictions, pharmacological adherence, immunizations, smoking cessation, among others¹¹
- Counseling about ICD implantation: Patients aged ≥ 18 years with a diagnosis of HF with current LVEF $\leq 35\%$ despite ACE inhibitor/ARB and beta-blocker therapy for at least 3 months who were counseled about ICD implantation as a treatment option for the prophylaxis of sudden death

The AACF/AHA/AMA-PCPI 2011 HF Measurement Set has created an overlap in HF measures for the inpatient and outpatient care settings with the following:¹⁰

- Beta-blocker therapy for LVSD: Patients aged ≥ 18 years with a diagnosis of HF with a current or prior LVEF $< 40\%$ who were prescribed beta-blocker therapy with bisoprolol, carvedilol, or sustained-release metoprolol succinate either within a 12-month period when seen in the outpatient setting or at hospital discharge
- ACE inhibitor or ARB therapy for LVSD: Patients aged ≥ 18 years with a diagnosis of HF with a current or prior LVEF $< 40\%$ who were prescribed ACE inhibitor or ARB therapy either within a 12-month period when seen in the outpatient setting or at hospital discharge

What team members need to be part of inpatient management?

The ACCF/AHA guidelines do not speak to who should be part of the inpatient care team. The guidelines describe a nurse-lead educational session with standardized instructions, one hour in duration, and performed at the time of discharge. This structured educational approach was associated with improved outcomes, adherence to the medical plan, reduced cost of care, and improved self-care.^{9, 12}

Studies have shown that using a dedicated multidisciplinary heart failure team to provide discharge education to hospitalized HF patients improves patient outcomes.¹³ Tailoring discharge education that is centered on the patient's learning style, cognitive level and motivation is an essential piece.¹³

The Agency for Healthcare Research and Quality published a report evaluating transitional care interventions to prevent readmissions for people with HF.¹⁴ A systematic

review and meta-analysis including 47 trials evaluating the efficacy, comparative effectiveness, and harms of transitional care interventions aimed at reducing readmissions and mortality for adults hospitalized with HF was performed.¹⁴ Transitional care interventions were defined as a broad range of services designed to provide health care continuity, avoid preventable poor outcomes among at-risk populations, and promote safe and timely transfer of patients from one level of care to another from one setting to another.¹⁴ Though there is no clear set of intervention components, the report noted interventions tend to focus on patient and/or caregiver education, medication reconciliation, coordination with outpatient providers, arrangements for future care, and symptom monitoring or reinforcement of education during the transition.¹⁴ Transitional care interventions overlap with other forms of patient care including discharge planning, case management, primary care and disease management. All transitional care interventions are aimed at avoiding poor clinical outcomes stemming from uncoordinated care. The report noted components of interventions showing efficacy for reducing all-cause readmissions or mortality included HF education, emphasizing self-care; HF pharmacotherapy, emphasizing promotion of adherence and evidence-based HF pharmacotherapy; and a streamlined mechanism for patients to contact healthcare personnel.¹⁴ Characteristics of interventions that reduced all-cause readmissions or mortality were noted to be of higher intensity, delivered face to face, and provided by multidisciplinary teams.¹⁴ The report concluded that home-visiting programs and multidisciplinary clinic interventions reduced all-cause readmission and mortality; structured telephone support reduced HF-specific readmission and mortality but not all-cause readmission. There was no evidence assessing harms of transitional care

interventions, such as increased caregiver burden.¹⁴

What do the guidelines that govern HF practice say we should provide when coordinating care for patients with chronic HF?

The 2013 ACCF/AHA Heart Failure Guidelines underscore the importance of education, support and involvement of patients with HF and their families especially during transitions of care. Failure to understand the plan of care likely contributes to the high rates of 30-day re-hospitalizations and mortality.⁹ These guidelines outline that providing a comprehensive plan of care to HF patients and their families during both hospital and office-based encounters is one critical intervention to ensure effective care. The plan of care needs to be easily understood, culturally sensitive, promote patient self-care and include evidenced-based educational materials. Areas that should be continually addressed include patient adherence to GDMT, timely follow-up with the healthcare professionals who manage the patient's HF and associated comorbidities, dietary adherence, physical activities, and secondary prevention guidelines for cardiovascular disease.⁹ The plan of care should be routinely updated, reviewed and made available to all members of the patient's healthcare team. Attention should also be directed to other complex areas of patient care such as psychosocial, behavioral, and socioeconomic issues which include but are not limited to access to care, risk of depression, and healthcare disparities.⁹

What systems of care should be implemented to promote care coordination for patients with chronic HF?

The success of each transfer or discharge of a HF patient is quantified by the degree to which it meets the requirements of the patient in addition to the individualized

goals in the plan of care. Some of these goals include advancing GDMT and referral for device therapies when indicated. The 2013 ACCF/AHA Heart Failure Guidelines discuss the role systems of care play in the management of HF patients. Systems of care are essential to the support of patients with HF and are able to produce a significant improvement in outcomes.⁹ There are numerous and non-standardized definitions of disease management as well as the elements of care associated with them. Models of disease management care that are successful in one office or hospital system will not necessarily be successful in another. This is evident when evaluating HF readmission rates and their variance between geographic areas and insurance coverage.¹⁵ However, the literature has shown that programs involving specialized follow-up by a multidisciplinary team decrease all-cause hospitalizations and mortality while this has not been seen in HF programs focused only on self-care activities.⁹ Moreover, while numerous studies¹⁶ have demonstrated that patients who have direct access to health education, prevention and early intervention are found to be cost-effective, further research is needed to determine specific interventions that are consistently found to be successful in clinical practice.

What team members need to be part of outpatient management?

The Heart Failure Society of American 2010 Comprehensive Heart Failure Practice Guidelines recommend the following components be included with a HF disease management program:¹⁷

- Comprehensive education and counseling individualized to patient needs
- Promotion of self-care, including self-adjustment of diuretic therapy in appropriate patients (or with family member/caregiver assistance)

- Emphasis on behavioral strategies to increase adherence
- Vigilant follow-up after hospital discharge or after periods of instability
- Optimization of medical therapy
- Increased access to providers
- Early attention to signs and symptoms of fluid overload
- Assistance with social and financial concerns

These components are based on individual patient characteristics and needs. The guidelines delve into the essential elements of patient education and define associated skills and target behaviors. It is also recommended that patients in a HF disease management program be followed until they or their family/caregiver are able to demonstrate independence in following the prescribed treatment plan, adequate or improved adherence to treatment guidelines, improved functional capacity, and symptom stability.¹⁷ It is noted that patients at higher risk with more advanced HF may likely need to be followed permanently and those who experience increasing episodes of exacerbations or who demonstrate instability after discharge from a program should be referred again for ongoing management.¹⁷

In a recent systematic review and meta-analysis⁸ that included more studies than previous systematic reviews looking at interventions and outcomes of multicomponent HF disease management programs, the authors reviewed 35 studies that included 8071 subjects. The majority of HF multicomponent programs were noted to deliver care using face-to-face clinic and home visits and telephone calls. This systematic review⁸ also found that the use of home technologies is becoming widespread and that evidence-based communication protocols are needed to successfully implement telehealth-based

interventions. While all studies concluded that HF disease management programs have a beneficial effect on re-hospitalization and mortality, none of the reviews provided a detailed description of specific interventions.⁸ Only half of the studies included symptom management, an essential self-care management skill, as an intervention component and only a third included the patient's caregiver in the intervention.⁸ None of the studies focused on transitions in care such as communication between physicians and nurses, medication reconciliation, or hand-offs between care settings.⁸ Details on individual program components in current literature is insufficient to outline the appropriate number and combination of interventions needed to improve outcomes and integrate into practice.⁸

Models of multidisciplinary HF management programs are composed of a variety of team members that may include and are not limited to physicians, pharmacists, dietitians, nurse practitioners, nurses, physical/occupational therapists, social workers, case managers, and home health nurses. Nurses have been shown to be an important member of HF multidisciplinary management programs. Review of the literature has shown that a critical component found in successful multidisciplinary management programs were using nurses who were knowledgeable about HF.¹³

What is the effect of HF disease management programs on patients' quality of life?

HF symptoms and a patients' ability to actively manage this disease profoundly impacts their life. Rector, Anand, and Cohn¹⁸ described the relationships between ordinary HF symptoms and the significance this had on patients' perceptions of the effects on their quality of life. Review of the literature has shown that patients participating in HF disease management programs have improved survival benefits from an increase in medical

therapies, improving treatment compliance, and reducing hospitalizations.¹⁹ Quality of life is also a predictor of outcomes in patients followed and managed by multidisciplinary HF programs.^{20, 21, 22.} Feldman, et al²² found in a 12-month longitudinal study following 531 newly referred patients that both men and women with HF who attend multidisciplinary HF clinics improve in terms of quality of life, 6-minute walk, and lower use of hospital and emergency department visits. Those who entered the multidisciplinary clinic who had more severe disease showed more improvement.

The HF patient population is growing in number and complexity. Disease management program designs and transitional care interventions differ according to multiple variables including the setting care is provided, severity of disease, and patient capacity for self-management. Outcomes appear to best when interventions are focused on patient and/or caregiver education, medication reconciliation, coordination with outpatient providers, arrangements made for future care, and symptom monitoring or reinforcement of education during transition. Face to face patient and caregiver education emphasizing comprehensive self-care and that is provided by multidisciplinary teams has been shown to reduce all-cause readmissions and mortality. Home-visiting programs, multidisciplinary team interventions and structured telephone support reduce HF-specific readmissions and mortality. A structured approach in the assessment and management of this patient population ensures the highest likelihood of success in terms of clinical outcomes and quality of life. Multidisciplinary HF Teams are able to address individual patient and caregiver needs equipping them with an understanding of their disease and self-care management strategies that will improve their quality of life and level of care received.

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