The Case for a Focused Approach to the Management of Heart Failure Patients

Introduction
Heart failure is the leading cause of death in the United States; it is among the most prevalent inpatient DRG’s in the Medicare National Database and is responsible for 17% of the national health expenditure (Circulation, 2011; 123(8) 933-44). Estimated to afflict 5.1 million people in the U.S., heart failure has a $32 billion annual price tag, and approximately one-half of people diagnosed with heart failure die within 5 years (Circulation, 2013; 127: e6 – e245). It is expected that as the population of the United States ages, the heart failure population and related costs for care will continue to grow, substantially.

Heart failure patients tend to be particularly complex, making effective and efficient treatment very challenging. Heart failure is a clinical syndrome characterized by a poor quality of life and high morbidity and mortality. Heart failure patients frequently have multiple comorbidities—hypertension, diabetes and renal failure most frequent—and cerebral dysfunction, anaemia liver dysfunction, COPD and sleep apnea common. (Heart Failure Rev. 2014 Mar 19(2): 163-72). Heart failure patients are often treated by multiple physicians, in multiple care settings with multiple and sometimes conflicting treatment and medication regimes. And while there is conflicting evidence that socioeconomic factors impact the quality of care, it has been well documented that socioeconomic factors play an influential role in heart failure readmissions.
The Evidence Shows...

Multiple examples of chronic care management in diabetes, atrial fibrillation and COPD illustrate the benefit of systematic condition-specific treatment strategies. It should be no surprise then that numerous studies examining the systematic treatment of heart failure found it to be a successful strategy. Following are some of the study’s conclusions:

• Several studies illustrated the benefits of clinical pathways and risk stratification tools in the emergency department where goals are to stabilize patient and triage to an appropriate care setting (Edwin, 2012; Collins, 2012; Lee, 2010).

• Studies that explored the operation of a heart failure observation unit demonstrated improvement in patient mortality and satisfaction as well as a decrease in readmissions (Collins, 2009; Diercks, 2006).

• Multiple sources studied the impact of effective and standardized discharge planning and transition care on nearly every standardly reported heart failure metric including patient mortality, readmissions, length of stay, patient satisfaction and core measures (Evidence basis by ACCF/AHA Guidelines – 2013, HFSA Guidelines – 2010, Fietel 2014, Shepperd, 2013).

It is clear that focused attention on evidence-based guidelines and delivery models is paramount to the successful management of the heart failure patient population. In fact, the American College of Cardiology and the American Heart Association have collaborated to create consistent guidelines for care based on the patient’s disease progression that serve as a roadmap (below) for care deployment. (See last page for full-size roadmap.)

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There are many examples of programs taking a systematic approach to the treatment of patients with heart failure. The programs offer a wide variety of approaches and treatment options. Some of these programs are focused on all aspects of heart failure care including heart transplantation and some offer services that do not include the tertiary and quaternary procedures. Clearly, it is not the clinical scope but the approach to the clinical program, the program’s clinical leadership, the adherence to guideline-based care, the degree and effectiveness of clinical integration and care teams, and the effectiveness of the electronic medical record utilization that drive programs of excellence.

SITUATION
The cited program is a large regional program whose hub location is a 900-bed, tertiary care hospital embarking on quaternary care services. The program has a long history of caring for patients in a large geographic region and has physical and human assets deployed across a 200-square mile territory in a hub-and-spoke fashion. With the upcoming development of a ventricular assist device and transplantation capabilities, the cardiovascular program is full-service and functions in a sub-specialized manner. The program participates and performs well in the suite of NCDR registries, as well as the STS registry. The program has 4 heart failure sub-specialty boarded cardiologists focused on advanced heart failure. In anticipation of the initiation of a ventricular assist device (VAD) and heart transplantation program, a heart failure redesign strategy was developed to improve advanced heart failure care, create program capacity and better utilize facility, care team and physician resources.

IMPROVEMENT PROGRAM INITIATIVES
While the strategy included multiple operations and information technology components, the three primary program development initiatives were to:

1. Establish an ambulatory heart failure clinic
2. Collaborate with the emergency department to deploy a heart failure tool kit including order sets, pathways, risk stratification and other tools
3. Develop a focused observation unit for heart failure patients

PROGRAM STRUCTURE AND STAFFING MODEL
The heart failure program is managed in a dyad fashion. A Medical Director of Advanced Heart Failure together with a Manager of Advanced Heart Failure Services have full responsibility for both facility- and ambulatory-based services. In order to develop and implement the program design and improvement initiatives, a Heart Failure Program Steering Committee was established. The steering committee included the heart failure cardiologists, hospitalist, emergency physician and primary care representatives, care management, quality and home health representatives; and heart failure clinic and subacute rehab representatives. This large, multi-stakeholder steering committee played a critical role in reconciling the various clinical standards, order sets and other clinical tools as well as making operations decisions. In addition, from a change management and stakeholder engagement perspective, the steering committee was essential.

In terms of clinical operations, the advanced heart failure program is supported by staff in both the ambulatory and the facility environments. The advanced heart failure specialty boarded physicians rotate weekly to provide daily rounds to all inpatients with a team of heart failure nurses and non-physician providers managing consultations and discharges.

1 Development of an Ambulatory Heart Failure Focused Clinic

The first solution was the development of an ambulatory clinic whose sole purpose was to treat advanced heart failure patients. While the initial goal of the clinic was to provide multi-disciplinary chronic care to patients, it quickly expanded its treatment objectives to provide rapid access to patients recently cared for in the facility environment including emergency department, observation and inpatient discharged patients. There were several goals for the clinic:

1. Link multiple service provision sites
2. Reduce risk for undesired clinical events that commonly occur during care transitions
3. Provide mechanism to closely monitor patient care plans and guideline adherence and reduce care variation
4. Enhance communication between care givers including primary care and other specialty physicians
The development of the clinic was based on several important design principles. First and foremost, the clinic was staffed by a multidisciplinary team whose objective was to create roles and responsibilities allowing each team member to perform to the top of licensure. For example: if a non-physician provider could perform a task instead of a physician, the non-physician provider performed the task; and if an RN could perform a task instead of an APP, the RN performed the task. Additionally, resources to manage all aspects of a patient’s care are provided within the heart failure clinic, reducing the number of appointments for patients. The multidisciplinary team includes: cardiologists, non-physician providers, heart failure trained RN’s and MA’s, pharmacy, social work and care management, behavioral health and palliative care. The second and critical component to the structure of the clinic was the development of physician reconciled guidelines, order sets, protocols and other clinical tools around which the clinical activity functions. The third critical operations strategy involved the development of communication tools utilizing and leveraging electronic medical record technology.

Deploy Heart Failure Toolkit Throughout the Emergency Department

The program has 167,000 adult emergency department visits annually. While the program had long implemented a Chest Pain Center Pathway and was a certified chest pain center, the treatment of heart failure in the emergency department was not standardized and thus dependent of daily staffing by the emergency department physician, the hospitalist and the cardiologist. In order to rapidly stabilize patients and triage them to the appropriate care setting (including the ambulatory heart failure clinic) while creating capacity and patient throughput, a comprehensive heart failure care tool kit was developed.

The project was a collaboration between the emergency department, hospitalists and primary care. The following tools were developed and deployed:

1. All physician-reconciled heart failure order sets
2. All physician-reconciled heart failure pathways
3. Deployment of a risk stratification tool
4. Involvement of case management resources
5. Access to ambulatory patient records

The project’s successes led to the development of the third major initiative.

Development of a Heart Failure Based Observation Unit

Prior to the development of the observation unit, heart failure patients who were in an observation status were bedded in various locations throughout the facility. Though concentrated in certain areas of the hospital, the patients were not located in proximity to the emergency department. One of the many results that the observation unit aimed to correct was the length of stay that most frequently exceeded the observation status 24-hour stay. Additionally, the provision of various required resources were slowed by the physical location. The goals of the development of the observation unit specifically for heart failure patients was to provide direct observation of therapy, assure the appropriate patient disposition and to completely fulfill the patient’s discharge needs.

The observation unit was designed in collaboration with the emergency department physicians, the cardiologists and the hospital administration. Initially the cardiologists drove the care cadence to the unit as they clinically had the expertise to do so and were directly connected to the ambulatory heart failure clinic that would receive the patients post discharge within 2-5 days. However, the daily operation rapidly became the responsibility of the emergency department physician who was in a better position to monitor and advance care based on the agreed upon protocols and pathways. Eventually, the observation unit management was such that it could accept direct admissions to the observation unit from the heart failure clinic, allowing patients to receive the more acute care provided there while eliminating the need for a regular emergency room visit. The impact to the emergency room operations and patient satisfaction were substantial.

Tools Deployed in the Development of the Observation Unit:

- HF order sets
- HF clinical pathway
- Specialty consults
- Case management
- HF education
Summary and Outcomes

The heart failure program developed a delivery model redesign and improvement plan in advance of the launch of a ventricular assist device and heart transplant service offerings. The goals of the improvement plan were to provide high quality, low variability care in the least acute appropriate care setting. The principles of the redesign project were based on care standardization and the reduction of variability, clinical integration at all levels, the deployment of a well-designed care team and leveraging electronic medical record functionality.

The improvement plan was developed around three major initiatives: 1) establish an advance heart failure ambulatory clinic; 2) collaborate with the emergency department to launch a heart failure tool kit to efficiently and effectively manage heart failure patients; and 3) develop a heart failure focused observation unit. The combination of the three improvements yielded several important results.

Program Improvement Results

- The development of a high-functioning ambulatory heart failure clinic has allowed the program to reliably care for higher acuity patients in the ambulatory setting.
- The development of a focused heart failure observation unit has allowed the program to reliably care for higher acuity patients in the outpatient setting.
- The emergency department and observation unit collaborations resulted in 68% of the patients entering the facility via the emergency department to be treated and discharged to home without an inpatient admission.
- As a corollary to the appropriate disposition of patients to observation and/or ambulatory care, 54% of the 30-day readmissions were avoided.
- As the facility improved its capabilities to manage lower patient acuity on an outpatient and ambulatory basis, the acuity of the heart failure inpatient admissions increased, which had a positive revenue impact.
- The length of stay for all heart failure patients in either an inpatient or outpatient status decreased, which had a positive margin impact.
Summary
The following summarizes the literature review compiled in the development of this article.

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