

# Creation of a Heart Failure Crawl List: A Collaboration Between Informatics and Nursing to Identify Needs and Improve Outcomes

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Heart failure (HF), perhaps more than any other condition, exemplifies the potential for healthcare Informatics to bridge the gap between practice and evidence-based care. According to the American Heart Association:

- HF is responsible for 11 million physician visits each year, and more hospitalizations than all forms of cancer combined.
- CHF is the first-listed diagnosis in 875,000 hospitalizations, and the most common diagnosis in hospital patients age 65 years and older.
- In that age group, one-fifth of all hospitalizations have a primary or secondary diagnosis of HF.
- More than half of those who develop CHF die within 5 years of diagnosis.
- HF contributes to approximately 287,000 deaths a year.

A common challenge in improving performance measures regarding HF is identifying patients early during their hospitalization so multidisciplinary education and clinical interventions can be implemented (Evans et al., 2016). Our ability to positively impact current disparities in care were limited because of our inability to comprehensively identify heart failure patients at UPMC Hamot. Specifically, identification of acute diastolic HF can be challenging due to the symptoms are often nonspecific and subjective. Insufficiently detailed data impeded our capability to identify appropriate patients accurately, timely and efficiently or to determine whether we are providing optimal care on an individualized basis. To successfully overcome these challenges, we needed to collate healthcare data in real time and use robust methodology to evaluate major changes in clinical practice or policy decisions (Banerjee et al., 2017).

## References

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## Creating a New Way to Identify Heart Failure Patients

Traditionally at UPMC the Cardiovascular Disease Managers (CVDM) identified acute heart failure patients by reviewing a list created within PowerChart using the Discern Reporting Portal. This HF Evaluation list used unknown criteria in attempt to determine patients admitted with a HF diagnosis. This report then had to be reviewed by the CVDM team to determine which patients were admitted with a diagnosis of heart failure, this included systolic and diastolic, acute and chronic.

It was determined that on an average day this report generated 96 patients that needed evaluated to determine if the patients truly were heart failure patients. Evaluating 96 patients took 120 minutes or two hours to up to four hours of nursing time.

After collaborating with the UPMC Wolff Center, UPMC Hamot HVI quality manager and in-patient HF team, a systolic and diastolic HF identification crawl list has been created. This list searches the medical record of all in-patients and recognizes key phrases and diagnostic information that are used to identify HF. This includes all patients with a documented ejection fraction (EF) less than or equal to 40%, key phrases including acute heart failure, acute on chronic heart failure, heart failure exacerbation, heart failure with reduced ejection fraction (HFrEF), heart failure with preserved ejection fraction (HFpEF), fluid overload and pulmonary vascular congestion.

With the creation of this crawl list, the CVDM team is able to create an accurate list of inpatients with a heart failure diagnosis in less than two minutes. On an average day, the new crawl list found 13 new patients and the time it took to evaluate these patients was 26-39 minutes versus up to four hours.



**UPMC Hamot**

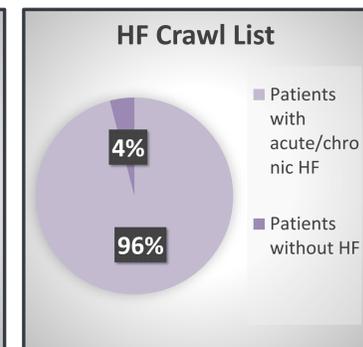
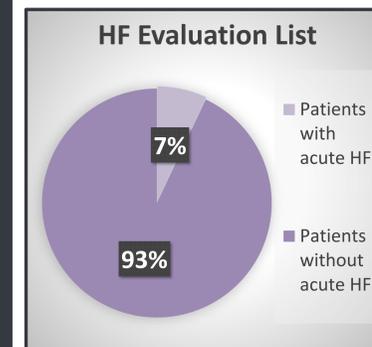
## Looking at the Numbers

The previous HF Evaluation list:

- Captured 96 patients total.
- 20 patients were in ICU and not evaluated by CVDM.
- 2 patients were in the ER and not evaluated by CVDM.
- 2 patients were pediatric patients and not evaluated by CVDM.
- 5 patients were evaluated as having acute HF.
- Only 7% of the patients evaluated were noted to be in acute HF.

The new HF Crawl list:

- 13 new patients identified.
- 5 patients were determined to be acute HF.
- 8 patients were determined to not be in acute heart failure.
- Of those 8 patients, 7 patients had chronic heart failure or followed in the Heart failure Clinic and needed HF navigation to some degree.
- 1 patient did not have documented HF.
- 96% accurate on capturing patients with heart failure.



## Conclusion

Heart Failure is very challenging in that this diagnosis is a leading cause of morbidity and mortality with the highest number of admissions for patient age 65 years and older. With professional collaboration, the HF team has created a process that uses technology to save time and better utilize nursing resources that will improve nursing processes. Using technology to identify patients with HF, acute and chronic, will allow for the HF professional care team to better utilize their expertise for education, navigation and providing transitional care for HF patients leading to better outcomes.