Modifying the Existing CHF Pathway for Acute CHF seen in the ED using New Guidelines and Feedback to Improve Compliance and Increase Appropriate Discharges from the ED

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Background

- 4% of patients with acute CHF exacerbation die during hospitalization
- 10% of patients die within 30 days of hospitalization for acute CHF exacerbation, and 30% die within one year
- 25% of CHF patients are readmitted to a hospital within one month of discharge, and risk of mortality increases with each hospitalization
- Poor performance discharging CHF exacerbations
  - 93.8% admission rate
  - 5th percentile nationally for percentage of CHF patients presenting to the emergency room who are discharged
- Average performance on readmission rates
  - ~20% of patients readmitted after ~5 day LOS of initial hospitalization
- CHF pathway implemented in 2016, however, it doesn't seem to make a difference in the admissions rate (Figure 1).

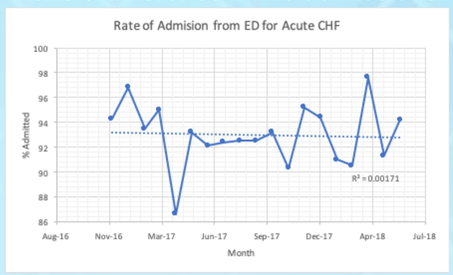

Figure 1

Problem Statement

How can a standardized, evidence-based care pathway be modified to improve compliance in order to increase the percentage of patients who are appropriately discharged from the ED after presenting with an acute exacerbation of CHF?

Methods

First, an analysis was completed to determine if the acute CHF patients in the ED were properly discharged per the pathway. Chart review was done for the patient record for the specific hospital encounter and compared against the CHF pathway to see if the patients were properly discharged per the pathway. Next, an analysis was done to determine if the acute CHF patients in the ED were properly admitted per the pathway. The steps were then repeated for the acute CHF patients that were admitted from the ED, however, this time the list was compared to see if the patients were properly being admitted as per the pathway. The steps are outlined in figure 2.

Additionally, feedback from the pathway users was gathered. A survey was sent out asking the users to rate the pathway as well as provide feedback about the pathway and what the users preferred to see in the ED.

Using the data collected from the inlier and outlier analysis, and the feedback gathered from the residents, an alternative pathway was created.

Results

The preliminary study consisted of an analysis to determine if the pathway is being used properly. It found that 88.0% of acute CHF patients that were discharged appropriately since the initiation of the pathway. Additionally, 66.7% of acute CHF admissions were appropriately admitted since the initiation of the pathway. More detail is shown in Table 1. This is shown in Figure 2 below. The biggest divergence from the pathway was that patients were being admitted because of practice variations within the cardiology department.

Additionally, a survey was sent to the pathway users to determine the thoughts on the pathway. It was found that the pathway was too complicated to use in the ED, as well as practice variations amongst the ED physicians and the cardiologist for when the patients require admission. Part of the survey is shown in figure 3.

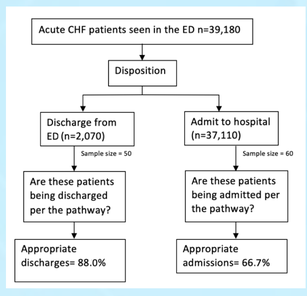

Figure 2

Patients with acute CHF seen in ED that were admitted		Rate
Admitted to hospital per pathway		66.6%
Admitted to hospital against the pathway	Cardiology inappropriately consulted	23.3%
	NTG paste administered instead of IV NTG	3.3%
	I:O not documented	3.3%
	Patient preferred hospital treatment	1.7%

Table 1

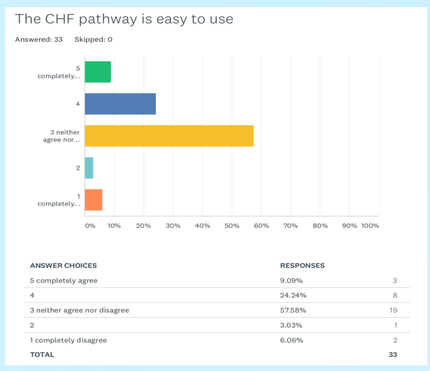

Figure 3

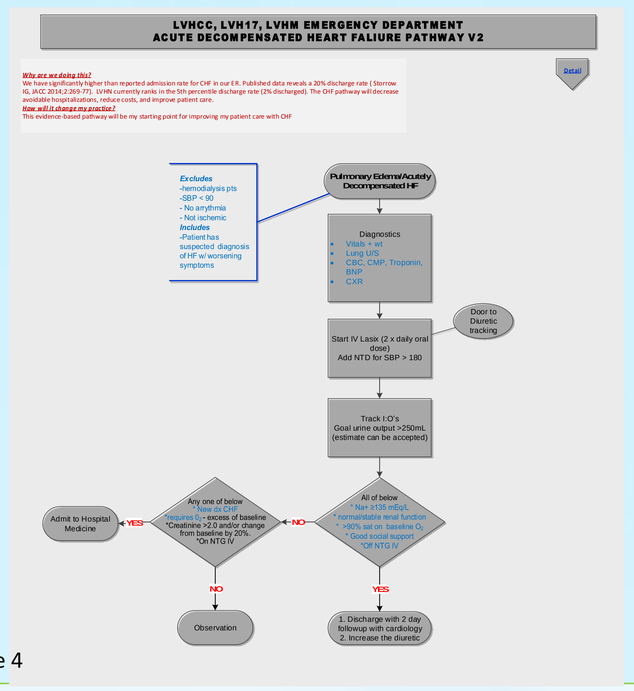

Figure 4

Discussion

- The study found that there was noncompliance with the CHF pathway. Around one third of the admissions to the hospital were not following the pathway.

- Pathway users filled out a survey to determine what their thoughts are of the pathway. Many of the users found the pathway too complicated to follow for the ED. Additionally, feedback was gathered from the users. Many said that there was practice variations between the ED physicians and the cardiologists.

- Many users also would like an Epic assistance that would help in the management of acute CHF.
- New guidelines for acute CHF management have also come out in favor of IV furosemide within 60 minutes of patient presentation, as well as use of ultrasound to diagnose CHF and the needy.

- This was all taken into consideration when developing and revising the pathway (Figure 4)
- It is important to reduce unnecessary CHF admissions for many reasons. This is where the SELECT competency of values based patient centered care and health systems come in.
  - Unnecessary hospitalizations for acute CHF increased mortality, therefore reducing this what increase the quality of care.
  - Inpatient treatment cost over $7000 whereas outpatient treatment is approximately $950, saving the network and patients money.

Conclusions

Investigating the rate of CHF admissions from the ED to the hospital found that there was noncompliance of the pathway. Using feedback from the pathway users, as well as new guidelines for management of an acute CHF, the original pathway was able to be revised in order to make it simpler, and include the new guidelines.

Further study is in progress to see if the revised pathway makes a difference for many patients presenting with acute CHF from the ED.

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