Assuring Appropriate Documentation of Fluid Status in Hospitalized Heart Failure Patients

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INTRODUCTION

In the United States, heart failure (HF) exacerbation is the most common diagnosis among hospitalized patients age 65 and older with an annual cost of Over $21 billion.

- Heart failure can result in fluid accumulation and retention in patients.
- The cornerstone of HF treatment is diuresis
- Closely monitoring fluid intake and output (I's & O's) is critical to tracking the clinical status.

We Previously found that providing education to nursing staff and placing reminder signs in patient rooms increased I&O documentation from 23% to 72 to 79%, respectively. However, over the year following this intervention, I's & O's documentation fell to 20%.

The next phase of our QI initiative examines whether detailed nursing education supplemented by the dept. of cardiology teaching, and systematic documentation protocol improves I&O charting by nursing staff to 80%.

METHODS

- The hospital chief of cardiology, and cardiology PA, provided a thirty-minute educational presentation emphasizing the clinical importance of I's & O's documentation
- Instruction on accurately collecting this data. This presentation was completed with the nurses on each hospital ward.
- A list of patients with HF distributed daily on each ward to nursing staff by nurse managers
- Red hearts placed on door frames of patients with HF as visual reminders
- Following this intervention, data was collected from HF patients during a one-week period, and compared to a baseline of I's & O's measurements
- Intake and output fluid documentation was examined separately. Successful documentation was defined as recording of both I's & O's during each 12-hour shift during a one-week period.

RESULTS

	Before Intervention	After Intervention	Percent Change (Δ)
Intake charting %	28.8%	93.0%	+64.2
Output charting %	12.6 %	64.9%	+52.3

Table 1. Percent change of documentation before and after intervention

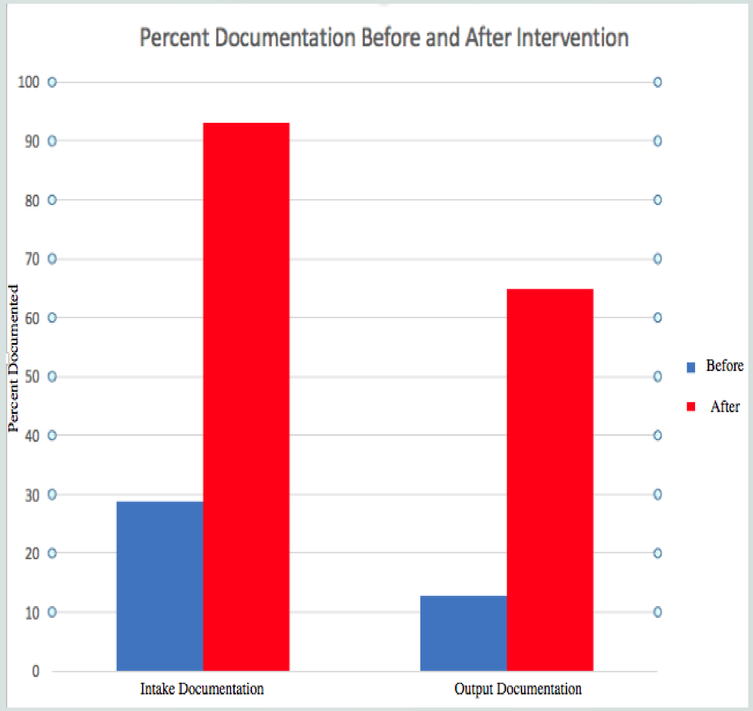

Figure 1. Drastic positive increase in EMR documentation following intervention was seen

CONCLUSIONS

- Accurate I&O documentation is vitally important to proper care for HF patients as it allows prompt identification of fluid overload, treatment with diuretics when appropriate, and possibly lower rates of readmission.
- Our educational intervention and implementing a systematic documentation protocol with visual reminders in patient rooms and in the EMR improved I&O documentation by over 50%. We thus plan to adopt this intervention.
- The nearly 28% higher documentation of inputs vs. outputs suggests adaptations are necessary to improve output documentation.
- We also plan to examine the effect of improved I&O documentation on patient clinical outcomes and readmission rates.

NEXT STEPS

- Continued improvements of documentation through recurring education of nurses and nurse managers during next academic year.
- Measure the effect of improved I&O documentation on patient clinical outcomes and readmission rates.

REFERENCES

Mozzafarian D, Benjamin EJ, Go AS, et al. on behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2016 update: a report from the American Heart Association. Circulation. 2016;133:e38-e360

O'Conner, C. High Heart Failure Readmission Rates. Journal of Heart Failure Volume 5, Issue 5, May 2017

Ponkowski P, et al. 2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. Eur J Heart Fail. 2016 Aug; 18(8):891-975.