

Introducing Subcutaneous Diuretic Therapy in the Ambulatory Setting

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BACKGROUND

- Heart Failure (HF) affects nearly 6.2 million adults in the United States. Of these patients, 25-30% are readmitted within 1 month with acute exacerbation of HF (Afari et al., 2019).
- Patients with a diagnosis of heart failure (HF) with New York Heart Association (NYHA) Class II and III symptoms experiencing fluid volume overload are treated with maintenance diuretics. In the setting of a worsening HF event, some patients require escalation of loop diuretic dose or intravenous administration of diuretics in either the ambulatory care setting or emergency department.
- A novel diuretic strategy, subcutaneous (SQ) furosemide, is an alternative to IV furosemide for ambulatory diuresis in select patients.

PURPOSE

- The goal of this CNS-led project is to implement and evaluate use of a SQ diuretic strategy in the ambulatory setting of a large academic medical center via development of a site-specific implementation and education plan.

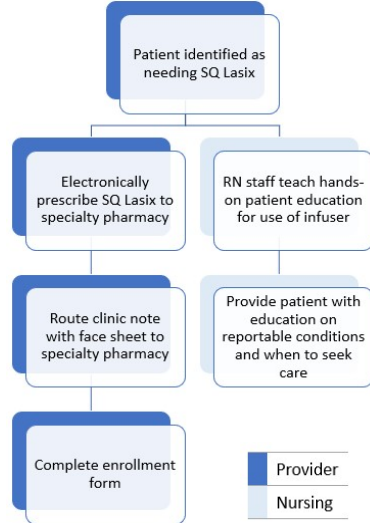
MATERIALS & METHODS

Procedures

- Clinical Nurse Specialist:
 - Led team of multi-disciplinary stakeholders including pharmaceutical vendor, HF clinic nurses, ambulatory pharmacist, advanced practice providers, and physician champion to design and implement process algorithm and education plan.
- Patients:
 - Accessed education materials provided by the manufacturer using a quick response (QR) code.
- Nursing Staff:
 - Educated through module on indications of SQ furosemide, criteria, instructions for use, reportable conditions, storage and other considerations, and product access and support.
- Providers:
 - Implemented the process algorithm and criteria for use in the ambulatory HF clinic.

METHODS

Process Algorithm



Patient Criteria: Subcutaneous Lasix

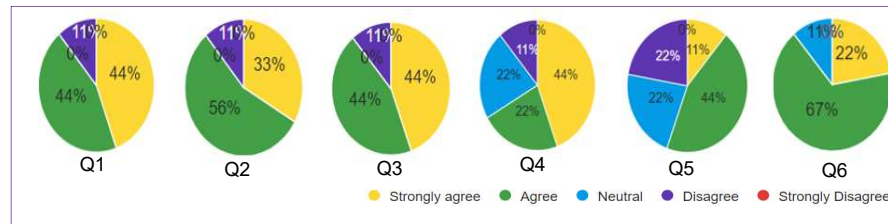
- Inclusion Criteria:
 - Heart failure with New York Heart Association (NYHA) Class II and III symptoms
 - Clinical evidence of fluid overload;
 - Jugular vein distention
 - Pitting edema ($\geq 1+$)
 - Abdominal distention
 - Pulmonary congestion
- Exclusion Criteria:
 - Anuria
 - Hypersensitivity to furosemide or medical adhesives
 - Hepatic cirrhosis or ascites
 - Acute pulmonary edema
 - Acute kidney injury (an increase of ≥ 0.5 mg/dL in creatinine from baseline or CrCl < 30 ml/min)
 - Emergency use: Symptoms requiring immediate hospitalization
 - Abdominal skin conditions at infusion site (sunburn, rash, eczema) on day of treatment

Nursing Staff Process Survey

A likert scale survey was administered to staff after implementation of education and process pathway

- Q1: "I understand the reason why some patients are prescribed subcutaneous furosemide"
- Q2: "I understand the objectives and education provided to me on subcutaneous furosemide"
- Q3: "I am able to use what I learned about subcutaneous furosemide to teach patients about it"
- Q4: "The criteria and process pathway are clear and helpful to me"
- Q5: "I use these tools in my daily work with subcutaneous furosemide"
- Q6: "I would recommend this process to another clinic or health system"

RESULTS



OUTCOMES

Current

- Nurse
 - Staff comfortability
 - Response to process change

Future

- Patients
 - Comfortability and competence with using the SQ furosemide infuser
 - Hospital avoidance and readmissions
 - Quality of life (QOL)
- Health System
 - Indirect cost benefit from reduced 30-day HF readmissions
 - Increased patient access

DISCUSSION

- The CNS provides leadership to the interprofessional team in implementing and evaluating system level interventions to meet the needs of patients and the system in a dynamic health care environment.
- This project bridges the gap with incorporation of new innovations into clinical practice. Still in the beginning stages of incorporation, the current volume for patient selection is small.
- Opportunities still exist to impact outcome measures in the three spheres of influence, the patient, nurse, and health system through this evidence-based, cost-effective intervention and to disseminate to organizational stakeholders and the public at large.

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References

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