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The Impact of Remote Optimization of Guideline-Directed Medical Therapy in Patients with NYHA Stage II and III Heart Failure

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PROVIDENCE Health & Services

Background

- In the United States, heart failure (HF) is one of the most common hospital discharge and re-admission diagnoses.[1,2]
- Identified contributors to this issue include the lack of: (1) use of all recommended HF medications as tolerated by the patient and (2) titration to target medication doses as outlined by expert guidelines. [3,4]
- The Heart Failure Society of America recommends that HF clinics can improve patient outcomes by incorporating a pharmacist to optimize medications.[5]
- Incorporation of pharmacist into a HF clinic is correlated with patients achieving target medication doses and lower hospital re-admission rates.[6-8]
- The impact of incorporating a clinical pharmacist in a HF clinic has not yet been assessed at PSJH Oregon.

Purpose

Evaluate the impact of incorporating a clinical pharmacist into a cardiology clinic for remote HF medication optimization

Study Design

Study Design: Quality improvement (QI) project

Inclusion Criteria:
- ≥ 18 years old
- admitted for HF exacerbation to a tertiary care hospital and will be receiving outpatient care at a cardiology clinic

Exclusion Criteria:
- life expectancy of < 1 year
- left ventricular assist device implantation
- history of heart transplantation
- chronic kidney disease (Stage 4 or higher)
- NYHA Class IV HF with reduced ejection fraction (HFrEF)

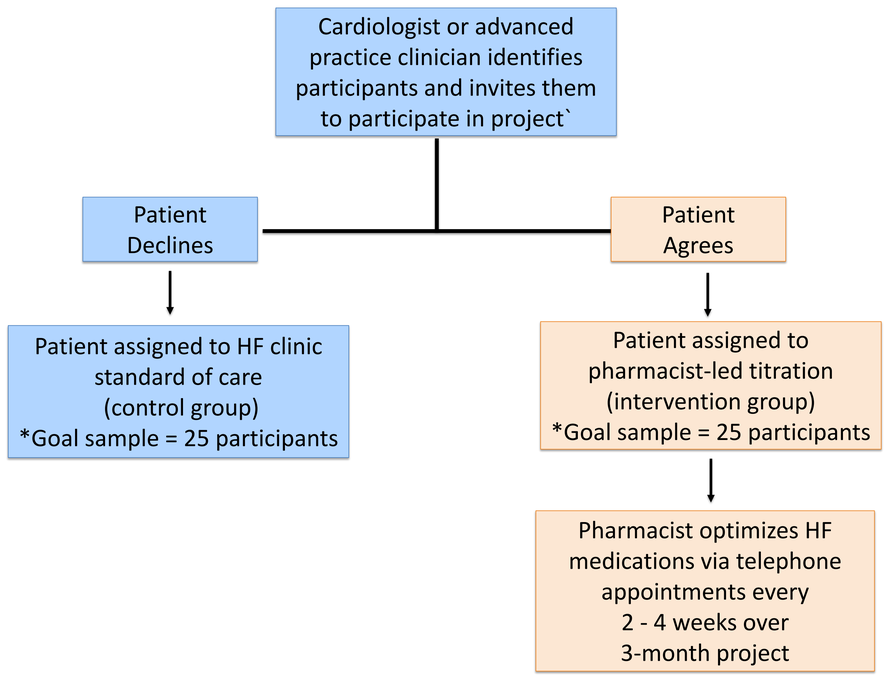
Objectives:
- ***Primary***: Compare the number of HFrEF medication* optimizations made in the intervention vs control groups.
- ***Secondary***: Identify provider perspectives on incorporation of a clinical pharmacist for HF medication optimization

* The 4 HFrEF medication classes included in the analysis of this QI project were evidence-based:
1) Renin-angiotensin-aldosterone system inhibitors
2) Beta-blockers
3) Mineralocorticoid receptor antagonists
4) Sodium-glucose co-transport 2 inhibitors.

Project Timeline:

	Dec 2021	Jan 2022	Feb 2022	Mar 2022	Apr 2022	May 2022	Jun 2022
Submission Phase							
Enrollment Phase							
Med Optimization							
Analysis & Survey Phase							

Workflow



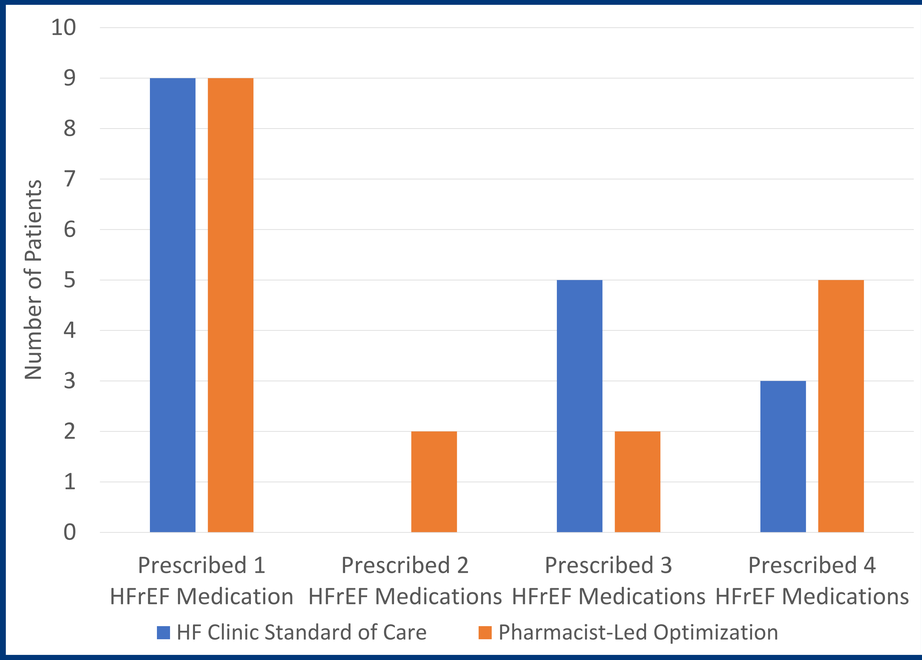
Preliminary Results

Table 1. Baseline Patient Characteristics

Variable*	Control (n = 9)	Intervention (n = 9)
Age	61.2	63.7
Female – No. (%)	2 (22.2%)	2 (22.2%)
White – No. (%)	6 (66.7%)	9 (100%)
LVEF**	25%	31%
Systolic Blood Pressure	117	114
Diastolic Blood Pressure	70	69
Heart Rate	76	78

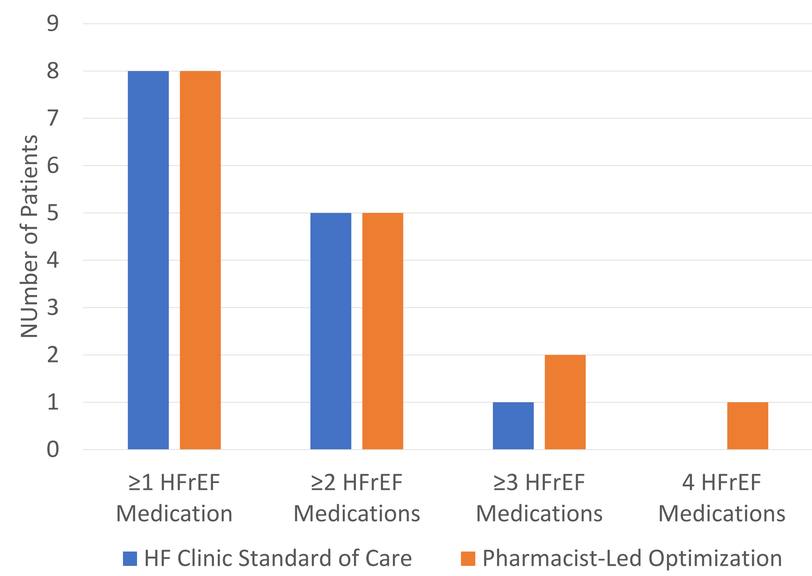
* All continuous variables are reported as means
** LVEF: Left ventricular ejection fraction

Figure 1. Comparison of Patients and Total Number of HFrEF Medications Prescribed



Preliminary Results (Continued)

Figure 2. Comparison of Patients Achieving ≥ 50% of Target Dose of HFrEF Medications



Other Quality Improvement Outcomes

- Developed clinical pharmacist note template to document tele-health appointment interventions.
- 19 medication optimization interventions made in the pharmacist-led optimization group.
- IRB approved clinical pharmacist coverage from 1 to 2 cardiology clinics.
- Switched a patient from Entresto to losartan to address hypotension side effects.
- Switched a patient from carvedilol to metoprolol succinate to (1) reduce hypotension side-effects and (2) improve medication adherence.

Limitations & Next Steps

- Difficulty with timely scheduling patients onto clinical pharmacist tele-health schedule.
- Some patients have been excluded from inclusion in the intervention group due to inability to afford home blood pressure machine.
- Current collaborative practice agreement does not include SGLT-2 inhibitors.
- Will implement in a survey in May to evaluate physician and advanced practice clinician perspective on clinical pharmacist optimization of HFrEF medications

References & Audio Summary

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