

# The Impact of a Health System Specialty Pharmacy's Role in Reducing Readmissions and Improving Access to Medication among Heart Failure Patients



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## BACKGROUND

- An estimated 6.2 million American adults are living with heart failure (HF), and the prevalence of HF is expected to continue to rise given the aging U.S. population.<sup>1</sup>
- The financial impact of HF also places a significant burden on patients and healthcare resources, accounting for \$43.6 billion in overall spending in 2020.<sup>2</sup>
- Within an interdisciplinary health model, pharmacists have previously demonstrated improvements in care for HF patients.<sup>3,4,5</sup>
- Additionally, the incorporation of Sodium Glucose Co-Transporter-2 inhibitors (SGLT2is) and sacubitril/valsartan into the American College of Cardiology's (ACC) recently updated treatment pathway has further expanded the opportunity for specialty pharmacists to impact HF patients by improving access to and management of these novel therapies.<sup>6</sup>

## OBJECTIVES

- The purpose of this investigation was to evaluate the impact a clinical specialty pharmacist embedded within a health system cardiology clinic had on outcomes among Heart Failure with reduced ejection fraction (HFrEF) patients.

## METHODS

- Design**
  - Retrospective pre/post chart review analysis assessing 303 patients with established heart failure and a reduced ejection fraction (HFrEF), enrolled in specialty pharmacy services.
- Setting**
  - An urban medical center's outpatient cardiology practice.
- Outcomes**
  - Clinical Outcomes:** All cause 30-day readmissions, total HF hospitalizations, average length of stay during an admission, and overall in-patient days
  - Access to Care Outcomes:** Hospital financial assistance enrollment and resultant patient savings, prior authorization turnaround time
- Analysis**
  - Clinical Outcomes:** All clinical outcomes were assessed via retrospective chart review 2 years from the date of patient enrollment and following enrollment. Cost savings related to decreased admissions were estimated based on national averages applied to the admission outcomes.<sup>2</sup>
  - Access to Care Outcomes:** Were evaluated based on outpatient pharmacy electronic health record and dispensing reports

## SUB-GROUP ANALYSIS

- Included patients under specialty pharmacy care for 9 months or greater. Patients under care for less than 9 months were excluded from this analysis
- Following application of exclusion criteria, 212 patients were included in the clinical outcome analysis.

## RESULTS

### Clinical and Access to Care Outcomes

#### Reductions in Patients' Barriers to Care

Hospital Financial Assistance Eligibility	Cost Savings/ Prescription	Total Cost Savings
	\$207	\$118,205

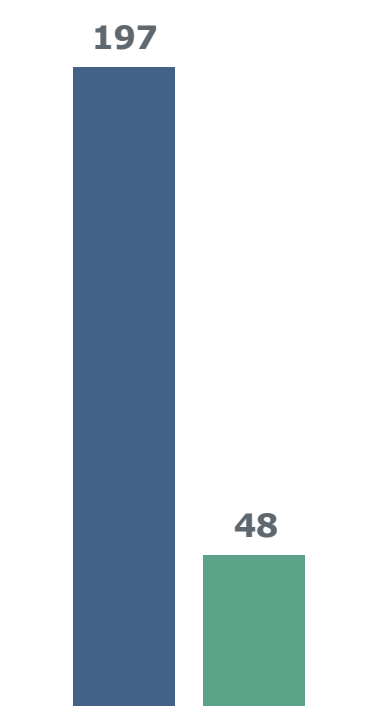
Prior Authorization Turnaround Time	<24 Hours	>24 Hours
	89%	11%

#### Patient Demographics

Age Distribution	Male	Female	Total
0 - 40 yrs	8	11	19
41 - 60 yrs	61	29	90
61 - 70 yrs	61	26	87
71 - 80 yrs	53	23	76
81 - 100 yrs	24	7	31
Total Patients	207	96	303

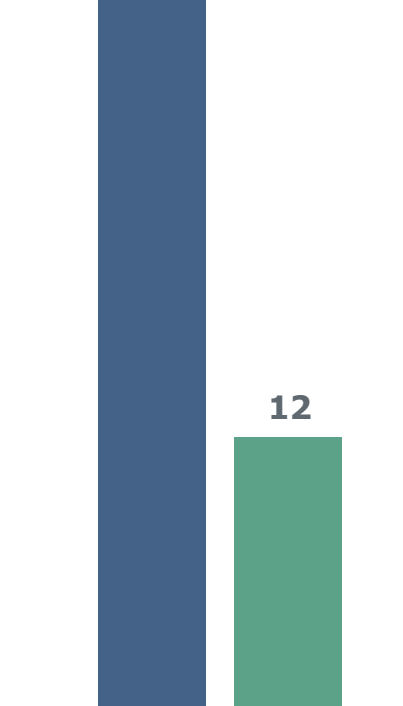
#### Total HF Hospitalizations

■ Prior to enrollment  
■ Post enrollment

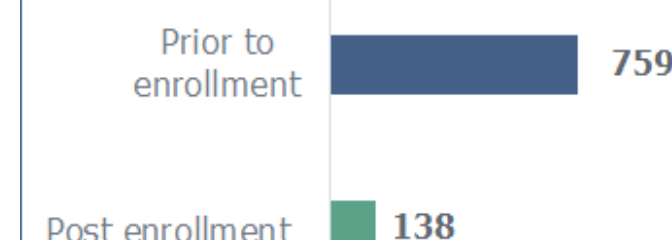


#### All-Cause 30-Day Readmissions

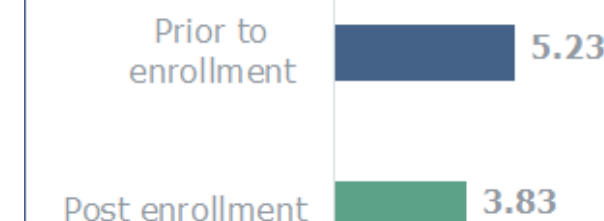
■ Prior to enrollment  
■ Post enrollment



#### Total Hospital Days

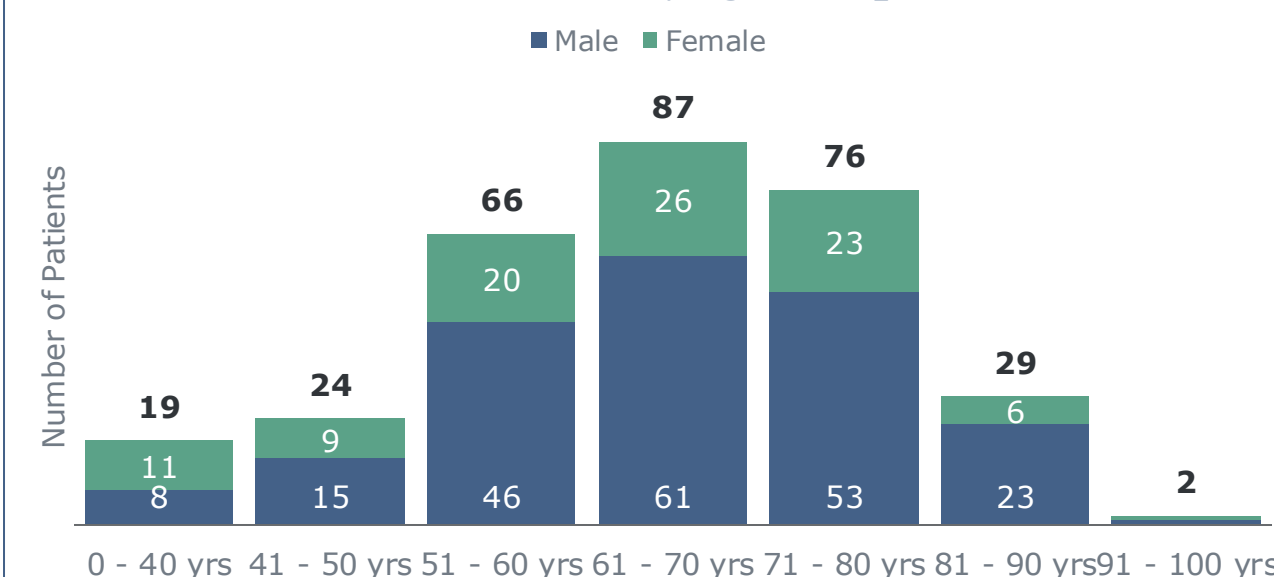


#### Length of Stay (LOS)

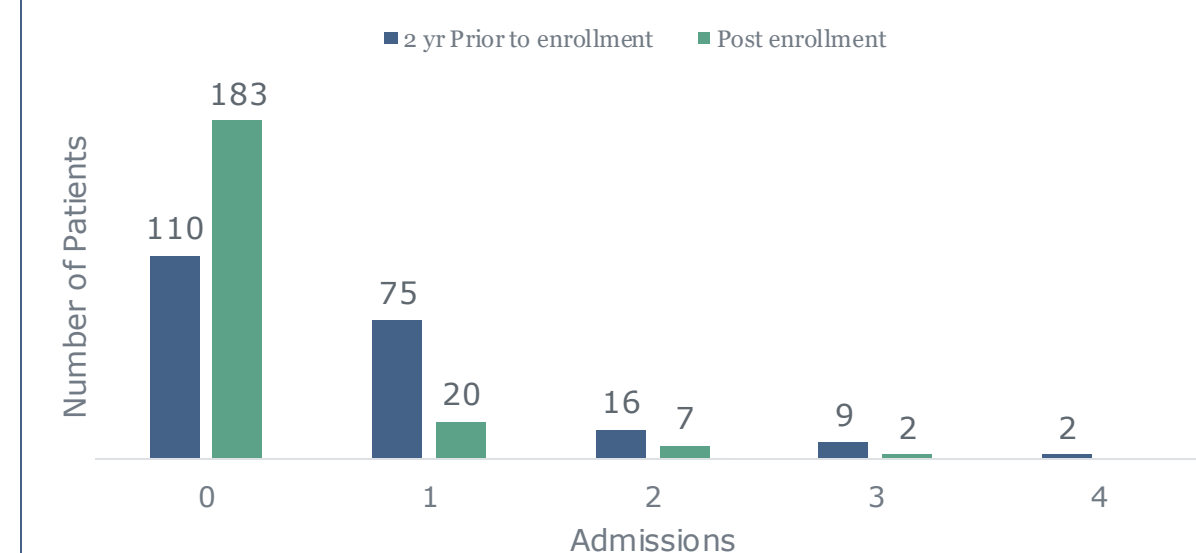


### Sub-Group Analysis (Enrolled in Specialty Pharmacy Services ≥9 months)

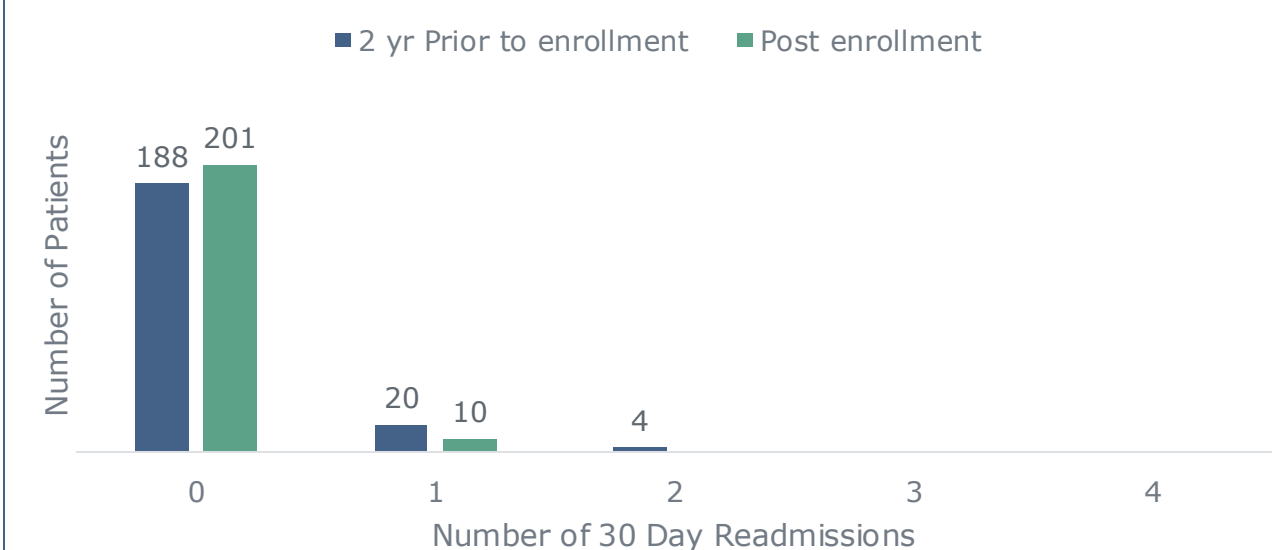
#### Distribution of Patients by Age Group and Gender



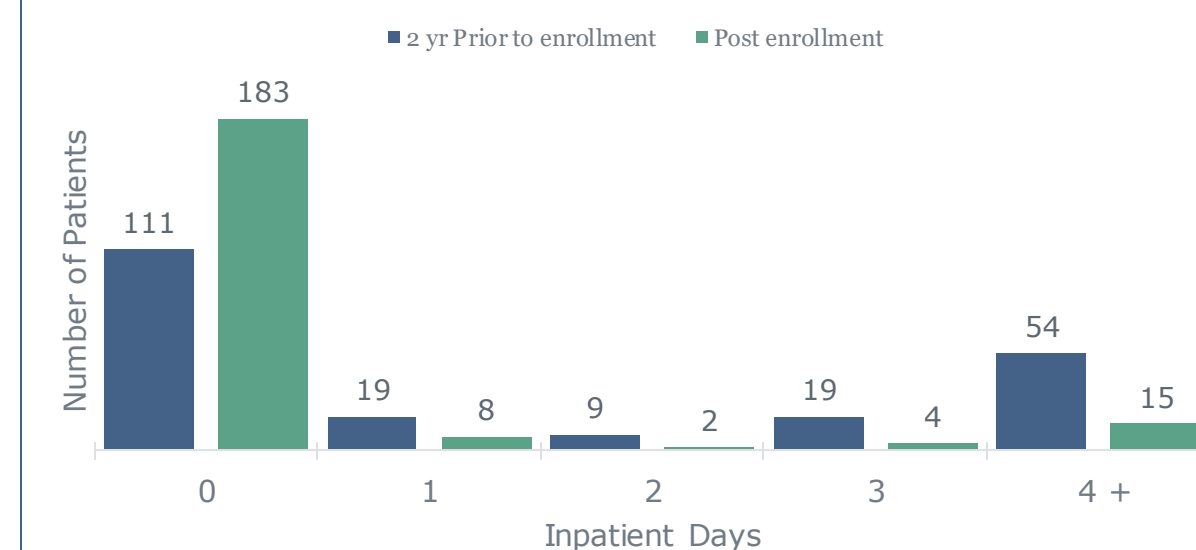
#### HF Admissions



#### 30 Day Readmissions



#### Hospital Inpatient Days



## CONCLUSIONS

### 63% Reduction in All-Cause 30-Day Readmissions

- A total of 303 patients were enrolled in specialty pharmacy services. Prior to enrollment, there were 33 30-day readmissions. Following enrollment, that number decreased to 12 30-day readmissions, resulting in a 63% reduction in all cause 30-day readmissions within this patient population.
- Among those enrolled for ≥9 months all cause 30-day readmissions decreased from 28 prior to enrollment to 10 post-enrollment, demonstrating a 64% reduction among this sub-group.

### 49% Reduction in HF Hospitalizations

- In comparing patients before and after enrollment, the total number of HF hospitalizations decreased from 197 to 48 admissions resulting in a 49% reduction in hospitalizations post enrollment in specialty pharmacy services.
- In the patient cohort enrolled for ≥9 months, HF hospitalizations decreased by 48% post enrollment in specialty pharmacy services.
- Inpatient days also decreased from 759 to 138 days, with an average length of stay reduction from 5.23 days prior to enrollment to 3.8 days post enrollment.

### Improvements in Access to Care & Health System Cost Savings

- By reducing 30-day readmissions and resultant readmission penalties, the overall cost savings observed by the health system was estimated to be \$159,243.
- In addition, patients that were determined eligible for financial assistance in accordance with Summa Health's FAP cumulatively received \$118,205 in financial assistance, with an average cost savings of \$207 per medication dispensed.
- Furthermore, 89% of prior authorizations submitted through the specialty pharmacy had a turnaround time of less than 24 hours.

### Moving Forward

- At present, these results describe the clinical and financial benefits of embedding specialty pharmacists into health system cardiology practices.
- This study helps address a current gap in health system specialty pharmacy literature concerning the value of embedding specialty pharmacists in a practice.
- A sustained reduction in HF hospitalizations and all cause 30-day readmissions was observed among patients enrolled for ≥9 months.
- Moving forward, continued analysis will be conducted on this patient population to further elucidate the benefit of embedding specialty pharmacists in health system cardiology practices.

Additional resource: Hospital Financial Assistance Eligibility was determined in accordance with the Summa Health System Financial Assistance Policy (FAP), available at <https://www.summahealth.org/patient-visitor/insurance-and-billing/financial-assistance>

## REFERENCES

- Virani SS, Alonso A, Benjamin EJ, et al. Heart disease and stroke statistics—2020 update: a report from the American Heart Association. *Circulation*. 2020;141(9):e139-596.
- Urbich, M., Globe, G., Pantiri, K. et al. A Systematic Review of Medical Costs Associated with Heart Failure in the USA (2014–2020). *PharmacoEconomics* 38, 1219–1236 (2020).
- Cheng JW. Current perspectives on the role of the pharmacist in heart failure management. *Integr Pharm Res Pract*. 2018;7:1-11. Published 2018 Mar 9.
- McKinley D, Moye-Dickerson P, Davis S, et al. Impact of a Pharmacist-Led Intervention on 30-Day Readmission and Assessment of Factors Predictive of Readmission in African American Men With Heart Failure. *Am J Mens Health*. 2019;13(1):1557988318814295.
- Hahn L, Belisle M, Nguyen S, et al. Effect of Pharmacist Clinic Visits on 30-Day Heart Failure Readmission Rates at a County Hospital. *Hosp Pharm*. 2019;54(6):358-364.
- Maddox TM, Januzzi JL Jr, Allen LA, et al. 2021 Update to the 2017 ACC Expert Consensus Decision Pathway for Optimization of Heart Failure Treatment: Answers to 10 Pivotal Issues About Heart Failure With Reduced Ejection Fraction: A Report of the American College of Cardiology Solution Set Oversight Committee. *J Am Coll Cardiol*. 2021 Feb 16;77(6):772-810.