

## BACKGROUND

- Hospital readmissions represent a significant burden on the healthcare system, especially with high-risk patients readmitting to the hospital for long-term health conditions.
- The Hospital Readmissions Reduction Program is a Medicare Program that reduces reimbursement to hospitals with high 30-day readmission rates for certain disease states.
- A transition of care (TOC) pharmacy service was created at St. Luke's Hospital in August 2019 to provide pharmaceutical care, such as counseling, medication reconciliation, identification of drug-related problems, and optimizing medical therapy for patients with acute myocardial infarction (AMI) or chronic obstructive pulmonary disease (COPD).

## OBJECTIVE

- The purpose of this study was to evaluate the impact of a transition of care (TOC) pharmacy service on the pharmaceutical care and 30-day hospital readmission rates of AMI and COPD patients.

## METHODS

### Study Design

- Single center, retrospective chart review of inpatients discharged from the hospital between January 1, 2018 - June 30, 2019 for the pre-intervention cohort and July 1, 2019 - December 31, 2020 for the post-intervention cohort.

### Inclusion Criteria

- 65 years of age and older admitted as inpatient.
- Pre-intervention cohort patients had a primary discharge diagnosis of AMI or COPD; post-intervention cohort patients included any patients followed by the TOC pharmacy service for any reason.

### Exclusion Criteria

- Leaving the hospital against medical advice (AMA), observation status, transfer to a long-term care facility (LTAC), discharge with hospice care, expiration prior to hospital discharge

### Study Outcomes

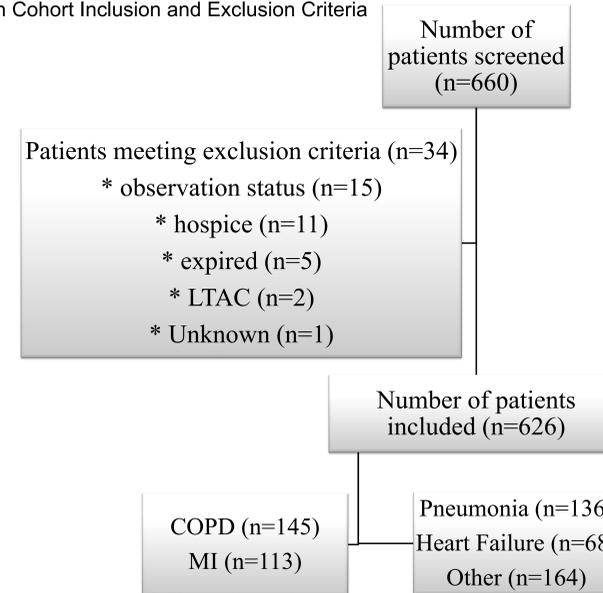
- Primary Outcome: 30-day hospital readmission rates for unplanned inpatient stays
- Secondary Outcome: Rate and type of TOC pharmacy interventions made in the post-intervention cohort

### Statistical Analysis

- Primary Outcome: Analyzed using Chi-Square test for nominal data. Alpha was set at 0.05 to assess for statistical significance. Only patients with a primary discharge diagnosis of COPD or AMI were included in the analysis for the primary outcome.
- Secondary Outcomes: Analyzed using descriptive statistics.

## RESULTS

Figure 1: Post-Intervention Cohort Inclusion and Exclusion Criteria



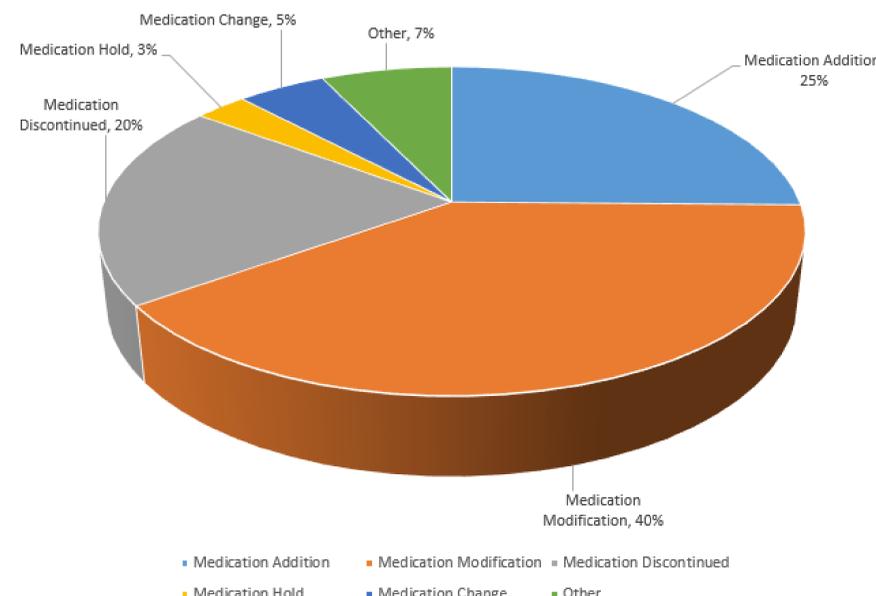
### Primary Outcome

- For patients with a final diagnosis of COPD or AMI, 113 of 641 patients (17.63%) in the pre-intervention cohort compared to 46 of 258 patients (17.83%) in the post-intervention cohort readmitted to the hospital within 30 days of discharge [OR=0.98, 95% CI (0.67-1.43), p=0.94].

### Secondary Outcomes

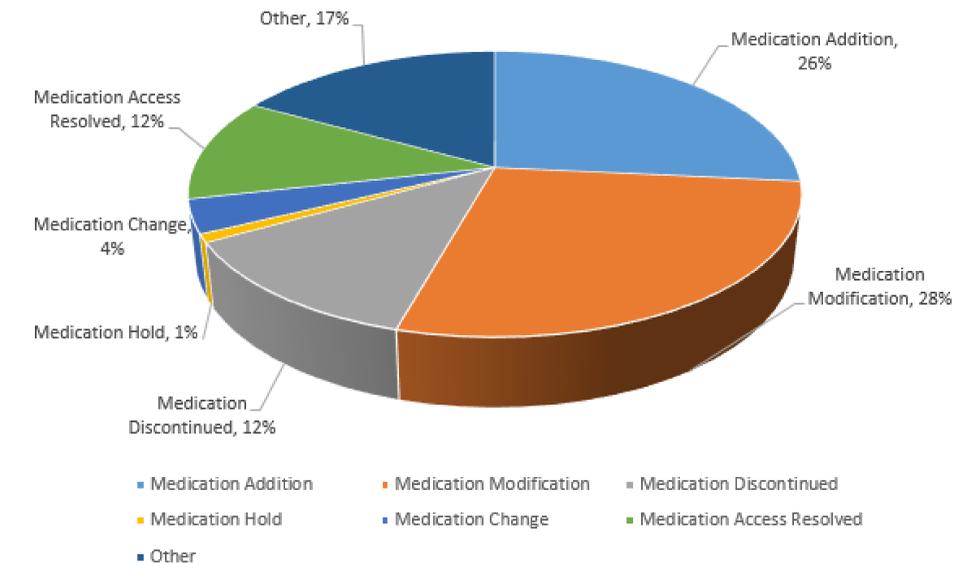
- Medication histories were completed by the TOC service for 334 of 626 patients (53.3%).
- Inhaler counseling was performed by the TOC service for 94 of 145 patients with COPD (64.8%).
- Discharge medication lists were reviewed by the TOC service for 517 of 626 patients (82.6%), with 342 of those 517 lists (66.1%) requiring at least one medication intervention.

Figure 2: Number of Inpatient Medication Interventions in Post-Intervention Cohort (n=352)



## RESULTS

Figure 3: Number of Discharge Medication Interventions in Post-Intervention Cohort (n=659)



## LIMITATIONS

- The spread of COVID-19 during the time period for the post-intervention cohort could have resulted in impacts, including readmissions due to COVID (4 patients), as well as delays in care and redistribution of health care resources.
- The exclusivity of patients included in the primary outcome analysis could also have skewed the data, with the TOC pharmacy service more likely to see patients at higher readmission risk.
- One pharmacist staffs the TOC pharmacy service, Monday through Friday. This therefore limits the extent of interventions able to be performed for patients with shorter lengths of stay, as well as evening or weekend discharges.
- Result differences may have been limited by other interventions in the pre-intervention group, including outside pharmacist review of patients with AMI, as well as a resident research project targeting patients with COPD for 6 months of the data in the pre-group.

## CONCLUSION

- This retrospective study was unable to identify a significant difference in 30-day readmission rates in COPD and AMI patients before and after TOC pharmacy service implementation.
- It did demonstrate the substantial number and types of medication interventions able to be made by such a service.
- Future, prospective studies should be conducted in this patient population to better determine how TOC pharmacy services can impact readmissions, but also enhance other aspects of patient care and promote long-term management of disease states.