# IMPACT OF INTERDISCIPLINARY COLLABORATION TO OPTIMIZE COPD REGIMENS DURING EXACERBATION ADMISSIONS ON GDMT AT HOSPITAL DISCHARGE

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## DISCLOSURES

- IRB status: Exempt
- Co-investigators:
  - William Schroeder, PharmD, BCPS
  - Jada Cunningham, PharmD, BCPS
  - Shea Fanning, PharmD, BCPS
  - Aimee Thornton, PharmD
  - Kaitlyn Deaton, PharmD, BCPS
  - Cortnie Peters, PharmD, BCPS
- Conflicts of interest: None
- Project sponsorship: None





## ST. PETER'S HEALTH (SPH)

- Helena, MT
- Nonprofit, 123-bed, community hospital
  - Serves ~100,000 residents across five counties
- Variety of specialty services offered
- Applicable pharmacy services:
  - Internal medicine
  - Intensive care unit
  - Surgical/oncology







## BACKGROUND

- Patients with chronic obstructive pulmonary disease (COPD) may experience acute exacerbations requiring hospital admissions
- Suboptimal therapy and adherence of COPD management can lead to further deterioration of lung function and comorbidities
- COPD is a leading cause of morbidity and mortality in the United States with exacerbation readmissions occurring in about 1 in 5 patients within 30 days[1-4]
- Pharmacist intervention in COPD therapy and inhaler technique positively impacts clinical outcomes[1-8]





## BACKGROUND

- Previously, many patients admitted to SPH for acute COPD exacerbations were discharged with the same COPD regimen as their admission therapies
  - Likely due to a limited inpatient inhaler formulary and questions regarding inhaler prescription coverage
- Clinical pharmacists can provide expertise on appropriate guideline-directed medical therapy (GDMT) to prevent COPD exacerbations, admissions, and unnecessary healthcare burden
- Interdisciplinary collaboration with pharmacy, respiratory therapy (RT), and the hospitalist group was utilized for this project





## OBJECTIVES

### Primary Objective

- Evaluate the percentage of patients discharged on GDMT for acute exacerbations of COPD

## OBJECTIVES

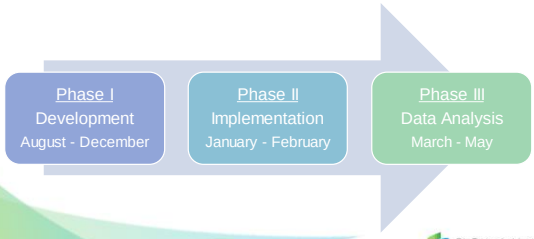
**Secondary Objectives**

- Rate and reason for 30-day readmissions
- Number and type of pharmacist-driven interventions
- Utilization of the St. Peter's Health 340B program
- Number of prescriptions dispensed for COPD medications at the St. Peter's Health outpatient pharmacies
- Percent of patients on maximum affordable GDMT on discharge
- Total steroid dose received for each individual patient
- Time to inpatient therapy optimization





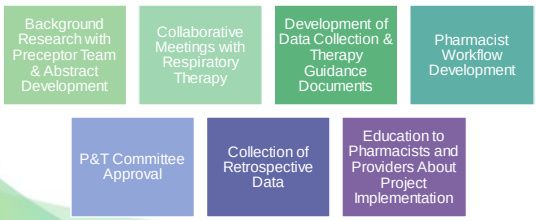
## METHODS








## PHASE I: DEVELOPMENT








## PHASE 1: DEVELOPMENT

**Retrospective Data Collected**

- Home medications
- Smoking history
- Presence of chronic bronchitis
- Medication adherence
- Previous pulmonary function tests (PFTs)
- PFTs ordered as needed
- Eosinophil count
- Therapy optimization during admission
- Discharge medications
- GDMT on discharge
- Total dose and duration of steroids
- Rate and reason for readmission





## PHASE II: IMPLEMENTATION

**January 1st – February 28th, 2026**

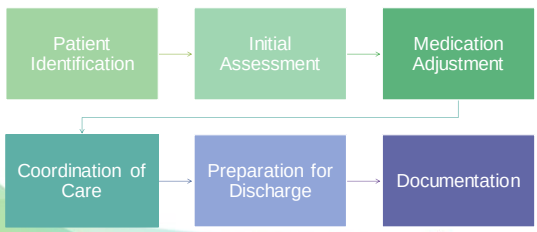
Utilized COPD guidance document to guide pharmacist-driven interventions

Documented all patients meeting inclusion criteria in standard data collection spreadsheet





## PHASE II: IMPLEMENTATION



## PHASE II: IMPLEMENTATION

**Patient Identification:**

Pharmacist: Screen for patients admitted with an active COPD exacerbation without exclusion criteria

**Initial Assessment:**

Pharmacist: Review patient's EHR for pulmonary function tests (PFTs), current medications, and adherence

RT: Assess inhaler technique and adherence, complete PFTs as needed





## PHASE II: IMPLEMENTATION

**Medication Adjustment:**

Pharmacist: Assess initial exacerbation therapy and recommend adjustments to inpatient and outpatient therapies

RT: Assess clinical appropriateness of medication delivery (nebulizer, MDI, soft mist inhaler, etc.)

**Coordination of Care:**

Pharmacist: Document recommendations to notify attending provider

RT: Contact pharmacy and document in the EHR for adjustments to medication delivery method needed





## PHASE II: IMPLEMENTATION

**Preparation for Discharge:**

Pharmacist: Queue outpatient prescriptions for provider signature

RT: Collaborate with pharmacy to ensure appropriate medication delivery method is chosen upon discharge

**Documentation:**

Pharmacist: Write daily notes which outline recommendations and assessments in the EHR

RT: Write daily notes documenting adherence and ideal medication delivery method





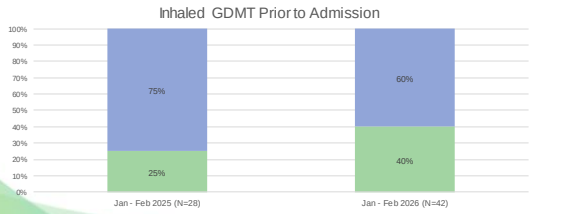
## PHASE III: DATA ANALYSIS

- Patients admitted with a diagnosis of COPD were captured in real time using a clinical decision support software rule match
- Retrospective data from 2025 was compared to prospective data from 2026
- Prospective data collected matched retrospective data points with the addition of:
  - Number and type of pharmacist interventions
  - Utilization of the 340B patient assistance program (PAP)
  - Number of COPD prescriptions dispensed by a SPH pharmacy following discharge





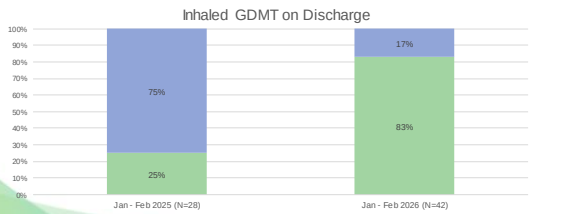
## RESULTS





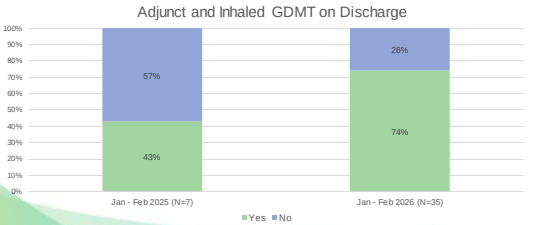



## PRIMARY OBJECTIVE RESULTS



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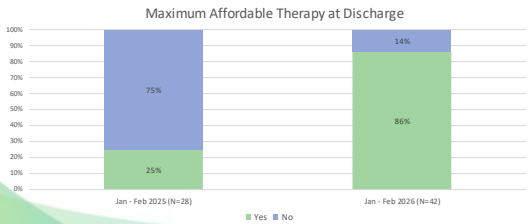
## PRIMARY OBJECTIVE RESULTS






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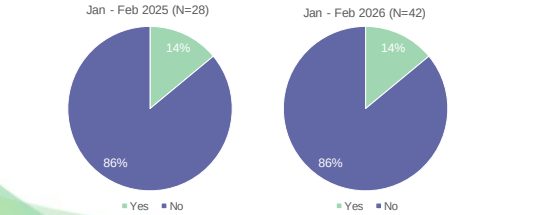
## SECONDARY OBJECTIVE RESULTS: MAXIMUM AFFORDABLE THERAPY






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## SECONDARY OBJECTIVE RESULTS: READMISSION WITHIN 30 DAYS

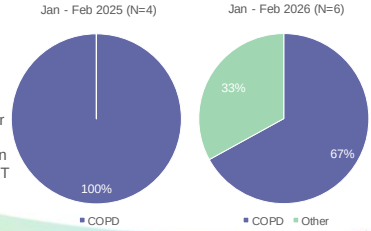





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## SECONDARY OBJECTIVE RESULTS: REASON FOR READMISSION

1/4 (25%) retrospective data patients readmitted for COPD were discharged on inhaled GDMT




100% (4/4) prospective data patients readmitted for COPD were discharged on inhaled GDMT



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## SECONDARY OBJECTIVE RESULTS: PHARMACIST INTERVENTIONS

Annual soft cost savings:

**~$35,000**

Primarily provider time saved

| Intervention Type | # of Interventions |
|---|---|
| Initial Therapy Assessment | 36 |
| Regimen Escalation Recommendation | 18 |
| Cost Analysis | 18 |
| PFTs Ordered | 12 |
| Meds to Beds | 10 |
| Medication Education | 10 |
| 340B Enrollment | 5 |
| **Total** | **109** |



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## SECONDARY OBJECTIVE RESULTS: 340B PROGRAM UTILIZATION

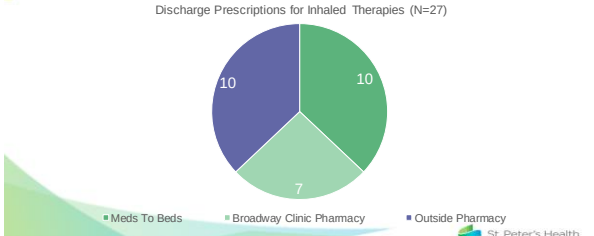
**New 340B PAP Referrals**

- 5/42 (12%) patients

**Already Utilizing 340B PAP**

- 2/42 (5%) patients

## SECONDARY OBJECTIVE RESULTS:
### PRESCRIPTIONS DISPENSED







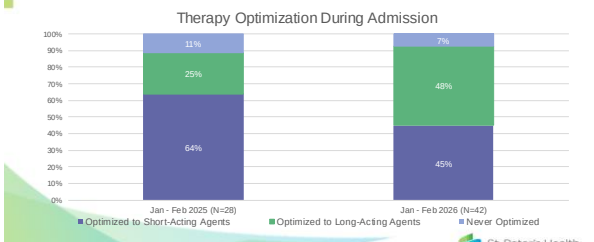

## SECONDARY OBJECTIVE RESULTS:
### DURATION OF STEROID THERAPY

| | Jan – Feb 2025 | Jan – Feb 2026 |
|---|---|---|
| Average Total Duration | 11 days | 7 days |
| Median Total Duration | 6 days | 6 days |
| Average Total Dose (prednisone equivalents) | 622 mg | 424 mg |
| Median Total Dose (prednisone equivalents) | 356 mg | 356 mg |





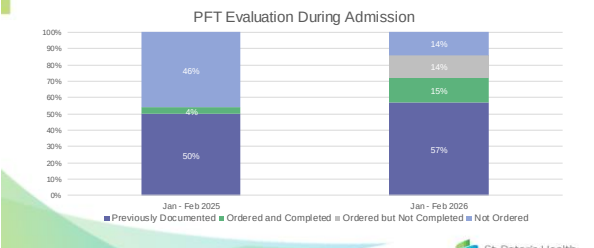
## SECONDARY OBJECTIVE RESULTS:
### THERAPY OPTIMIZATION DURING ADMISSION








## ADDITIONAL FINDINGS:
### DOCUMENTED PULMONARY FUNCTION TESTS








## DISCUSSION

### Limitations

- Patients in retrospective group may have been missed due to varying diagnosis codes
- Formal staff education occurred after implementation start date
- Bedside spirometry temporarily unavailable
- Delay between PFT completion and results due to limited pulmonology resources
- Loss of access to PFT documentation software
- Patient-reported adherence to home regimen





## CONCLUSION

- Implementing a standardized guidance document for escalating COPD therapies during admission:
  - Improved GDMT upon discharge
  - Decreased the number of readmissions for COPD
  - Increased the number of patients with documented PFTs
  - Led to increased soft-cost savings

## FUTURE DIRECTIONS

- Continue to collaborate with RT to optimize inhaled therapy delivery methods
- Emphasize outpatient referrals to pulmonology with priority for monoclonal antibodies
- Encourage optimization to long-acting inhaled therapies inpatient when possible
- Analyze long-term readmission rates
  - Goal to prevent admissions from acute exacerbations





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## QUESTIONS?

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