

Reducing COPD Hospitalizations and ED Visits Through Remote Monitoring

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INTRODUCTION

- Chronic obstructive pulmonary disease (COPD)-related hospitalizations are costly, and represent the third leading cause of 30-day readmissions in the United States.¹
- Rural and underserved regions – particularly in Mississippi – bear a disproportionate burden of COPD-related morbidity and mortality.^{2,3}
- At the University of Mississippi Medical Center (UMMC), COPD-related hospitalizations and emergency department (ED) visits were identified as major quality gaps.

OBJECTIVE

This quality improvement project was designed to evaluate whether integrating remote patient monitoring (RPM) could reduce hospital and ED utilization while reinforcing preventive care for patients with COPD.

METHODS

DESIGN

- A retrospective chart review was conducted and included patients enrolled in the RPM program from January 2023 to August 2025.
- Patients enrolled in the program received a telemonitoring kit with a Bluetooth-enabled pulse oximeter to record daily oxygen saturations.
- In addition to biometrics, patients responded to daily symptom-based questions.
- Nurses performed onboarding calls and monthly follow-up calls for reassessment.
- Pharmacists performed medication reviews at baseline and every three months.
- Declining oxygen saturations or worsening symptoms prompted nurse outreach for assessment and, when indicated, pharmacist escalation of the exacerbation protocol and alerting the patient's Pulmonologist.

PRIMARY OUTCOME

- Difference in hospitalizations and ED visits for COPD exacerbations per year before RPM enrollment compared with COPD exacerbations per year during enrollment.

RESULTS

Figure 1

Patient Demographics At Enrollment

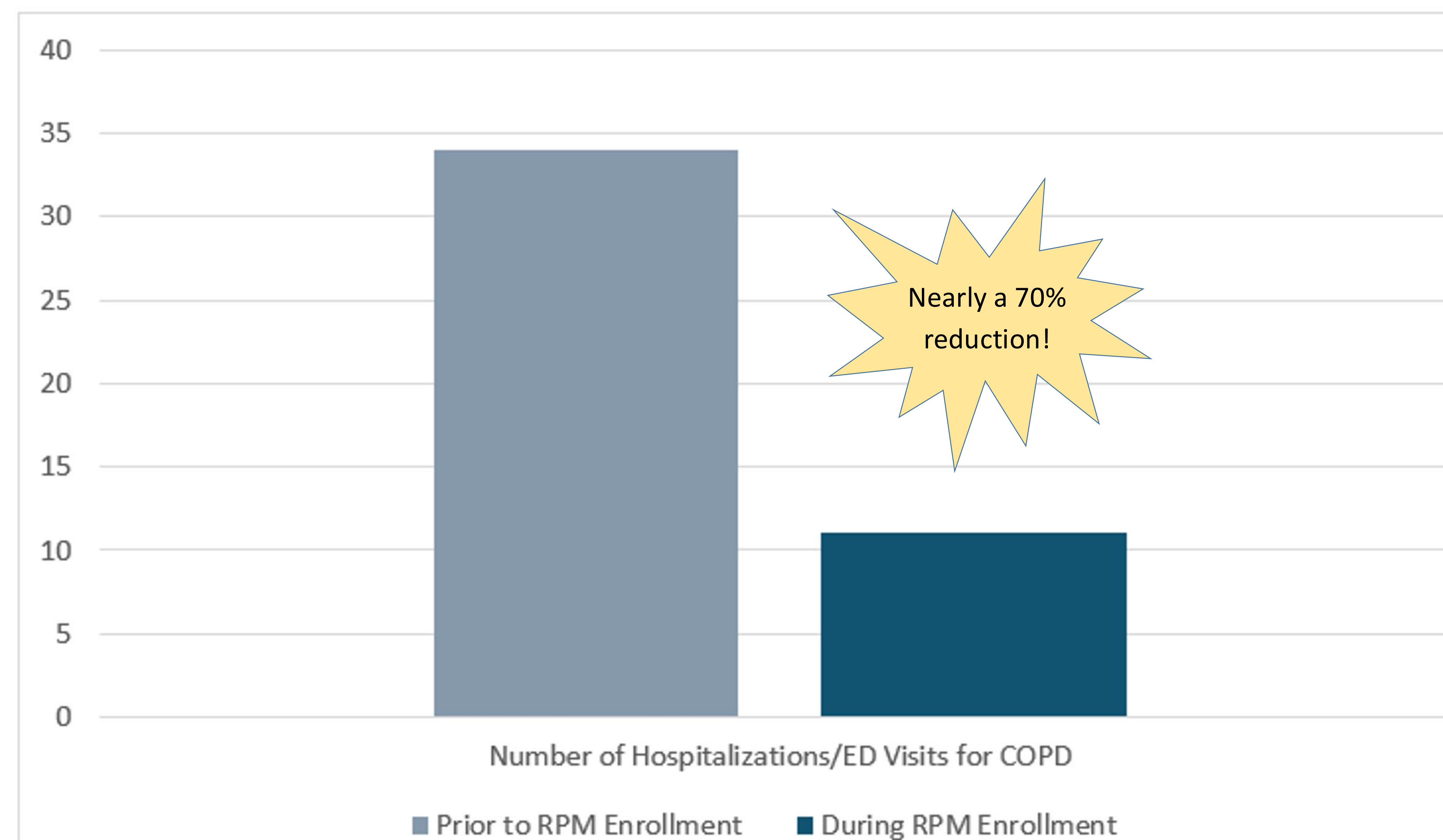
Patients Onboarded	30
Average MMRC Score	3.4
GOLD Group B	3%
GOLD Group E	97%
Daily LAMA Usage	80%
Daily LABA Usage	93%
Daily ICS Usage	90%
Daily Rescue Therapy Usage	83%
Hospitalizations/ED visits for COPD	34

Figure 2

Interventions and Outcomes

Average Enrollment Duration	6.2 months
RN intervention calls	63
Exacerbation protocol initiated	22
RN Monthly Reviews Completed	73%
PharmD 3-month Reviews Completed	77%
Maintenance Therapy Adjusted	5
Hospitalizations/ED visits for COPD while enrolled	11

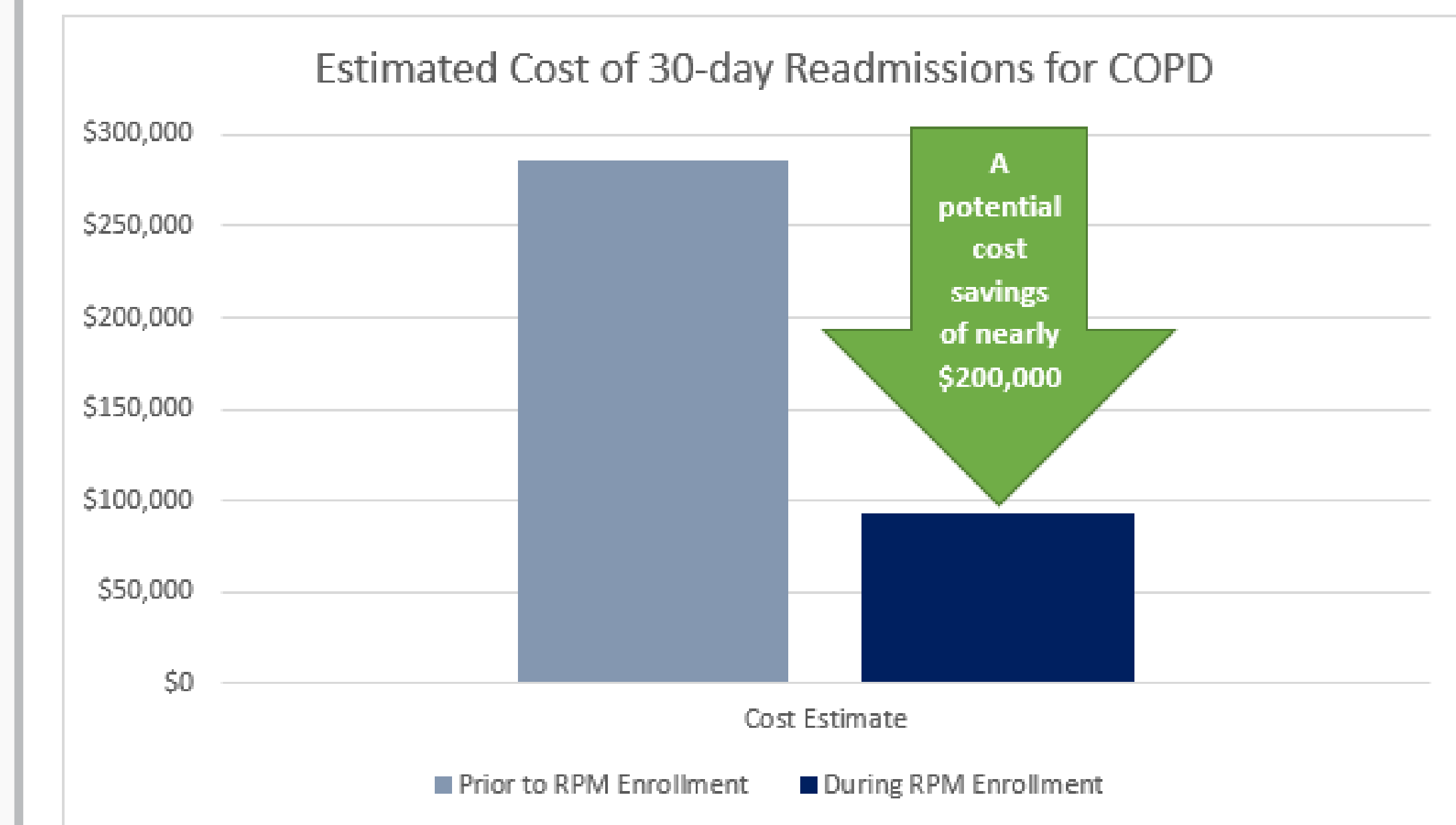
Figure 3



- COPD-related hospitalizations and ED visits decreased from 2.2 per year prior to enrollment to 0.7 per year during enrollment – a 68% reduction ($p < 0.001$).

RESULTS

Figure 4



DISCUSSION

- The population of patients with COPD enrolled represents a group more prone to exacerbations.
- Only 80% of patients were on long-acting muscarinic antagonist (LAMA) therapy at enrollment, likely attributable to the higher cost of medication as opposed to cheaper combination alternatives containing inhaled corticosteroids (ICS) and long-acting beta agonist (LABA).
- Implementation of a high-risk COPD RPM program at UMMC was associated with reduced hospitalizations and ED visits, supported by strong patient engagement and coordinated nurse-pharmacist care.
- Single institution findings may limit generalizability; future work will focus on sustainability, program expansion (e.g. tele-pulmonary rehab), and addressing barriers to consistent maintenance medication usage.

REFERENCES

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