# A Breath of Fresh Care:

## Increasing Referrals for Pulmonary Rehabilitation after Admission for Acute Exacerbation of COPD

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## INTRODUCTION

- Hospitalizations related to ambulatory care sensitive conditions, a group of medical conditions that include chronic obstructive pulmonary disease (COPD), are preventable if high-quality outpatient care is provided.[1]
- At the Portland Veterans Affairs Health Care System (PORVAHCS), admissions for acute exacerbation of COPD (AE-COPD) are significantly higher than expected. Further, readmissions account for a large portion of these AE-COPD admissions.
- Evidence suggests that pulmonary rehabilitation, when started within 28 days of discharge, can significantly reduce readmission rates. At PORVAHCS, this intervention was rarely offered at discharge after an AE-COPD admission.[2,3]
- The **aim of this project** is to decrease readmission rates of veterans admitted for AE-COPD by increasing the number who start pulmonary rehabilitation within four weeks of discharge (**Table 1**).[4]

## BASELINE DATA

| Metric | % AECOPD Admissions |
|---|---|
| Pulmonary rehab within 4 weeks of discharge | 00.0% |
| Documentation of COPD Action Plan | 00.0% |
| Documentation of Inhaler Technique Review | 00.0% |
| Case Management with Monthly Educator Contact (CCHT) | 05.3% |
| Influenza vaccination by discharge | 57.9% |
| Tobacco Cessation Offered at Discharge | 90.0% |
| Long-Acting Bronchodilator on Discharge Medication List | 94.7% |

**Table 1.** Results of chart review of guideline-recommended care elements for 2 months of consecutive AE-COPD admissions to the PORVAHCS (n=19)

## METHODS

- We performed process mapping via user observations and interviews.
- Significant gaps in the referral process were identified.

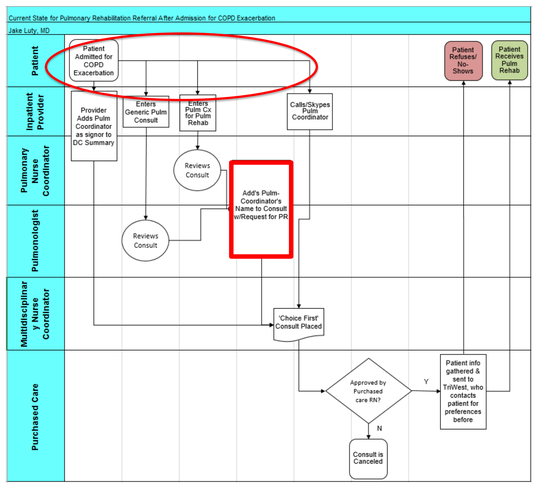
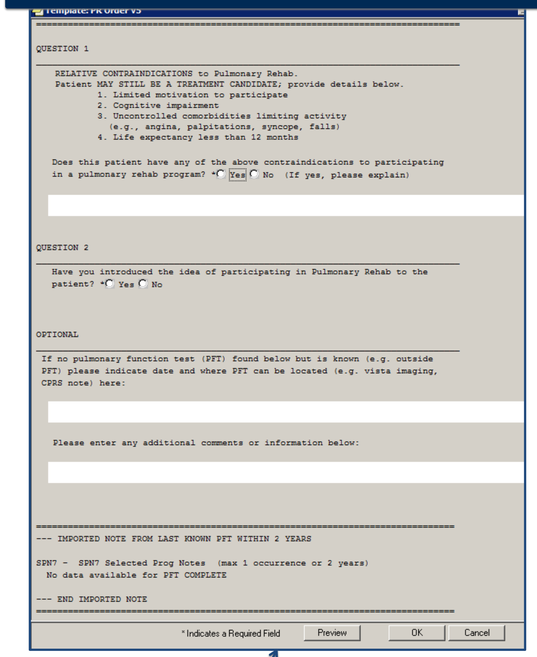


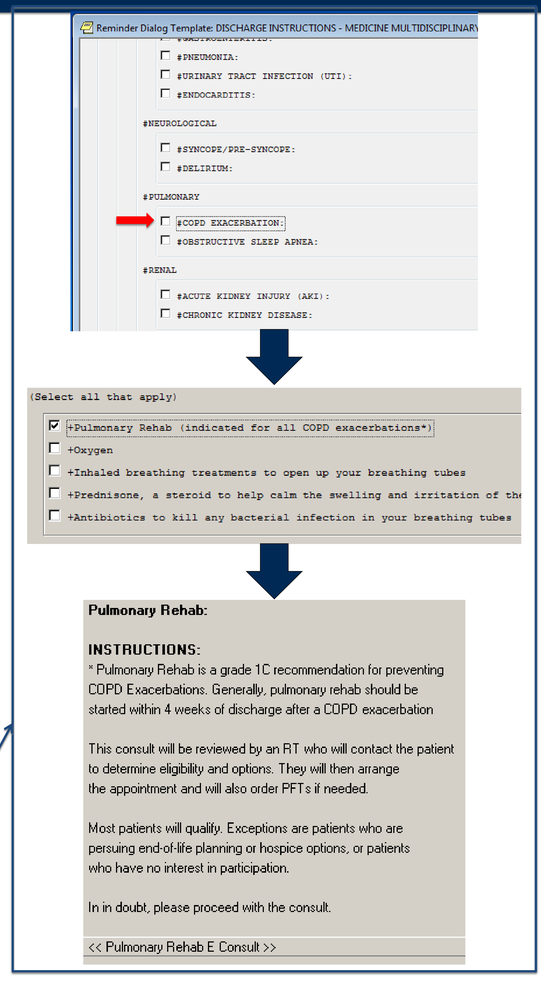

**Figure 1.** Workflow map of referring a patient to pulmonary rehabilitation prior to AE-COPD initiative

## INTERVENTION

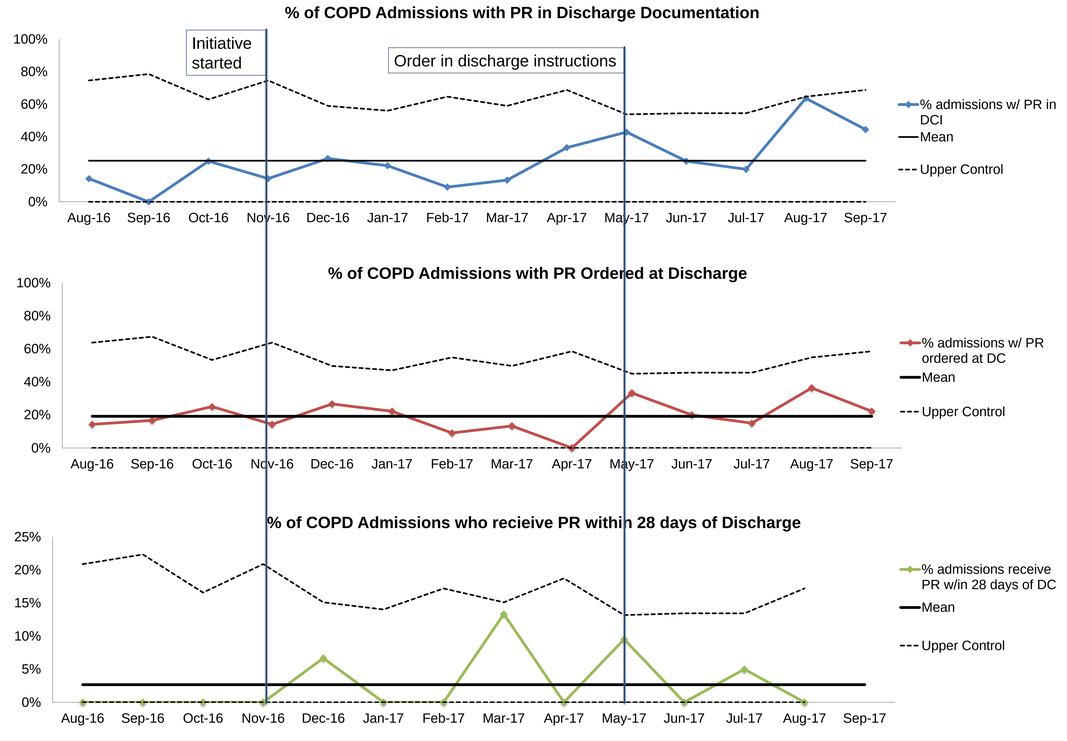



We first created a standardized referral pathway for pulmonary rehabilitation, starting with a consult order and template in the computerized patient record system (CPRS).

We then inserted decision support into the physician discharge workflow to remind the discharging provider to order pulmonary rehabilitation when indicated.




## CONTROL CHARTS




## DISCUSSION

- Our results show a trend towards significant increase in rates of pulmonary rehabilitation documentation and referrals.
- However, implementing a standardized process alone does not guarantee its use nor that it will lead to a significant change in desired outcome.
- Changes in AE-COPD admission and readmission rates were difficult to assess due to seasonal variation, but have remained essentially unchanged.
- Although our primary goal to decrease readmission rates of veterans admitted for AE-COPD is not yet achieved, we demonstrate that the introduction of a standardized process for ordering pulmonary rehabilitation resulted in an increase in the number of Veterans that receive this evidence-based intervention.

## NEXT STEPS

- Future quality improvement cycles will involve workflow optimization (**Figure 2**) to ensure patients referred will start pulmonary rehabilitation within 28 days.
- Standardize staff training to include building awareness about the workflow through provider education (**Figure 3**).
- Eventually broaden intervention to include other care elements, such as tobacco cessation, COPD action planning, and inhaler technique documentation (**Table 1**).

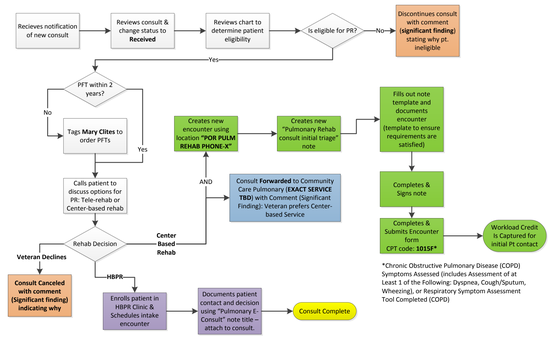



**Figure 2.** Future state back-end workflow map

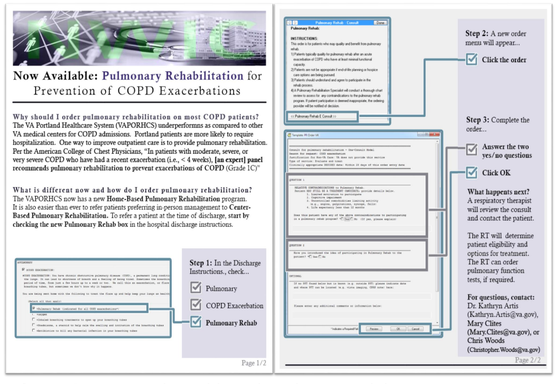



**Figure 3.** Proposed provider education materials

## REFERENCES

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