

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

	INTERVE	
UESTION 1	PK Order VS	Reminder Dialog Template: DISCHARGE INSTRU
RELATIV Patient	VE CONTRAINDICATIONS to Pulmonary Rehab. t MAY STILL BE A TREATMENT CANDIDATE; provide details below.	#URINARY TRACT INFECTI #ENDOCARDITIS:
	 Limited motivation to participate Cognitive impairment Uncontrolled comorbidities limiting activity (o.g. anging polpitations support falls) 	#NEUROLOGICAL
Dees th	4. Life expectancy less than 12 months	= #SYNCOPE/PRE-SYNCOPE:
in a pu	lmonary rehab program? * Yes O No (If yes, please explain)	# PULMONARY
		#COPD EXACERBATION:
ESTION 2		#OBSTRUCTIVE SLEEP APN
Have you patient	u introduced the idea of participating in Pulmonary Rehab to the ? * Yes O No	#RENAL
TTOWN		= #CHRONIC KIDNEY DISEAS
If no pul:	monary function test (PFT) found below but is known (e.g. outside	
(PRS note)) here:	(Select all that apply)
		+Pulmonary Rehab (indicated for all
Please (enter any additional comments or information below:	+Oxygen +Inhaled breathing treatments to open
		+Prednisone, a steroid to help calm
- IMPORT	ED NOTE FROM LAST KNOWN PFT WITHIN 2 YEARS	+Antibiotics to kill any bacterial i
N7 - SP	N7 Selected Prog Notes (max 1 occurrence or 2 years)	
- END IM	PORTED NOTE	Pulmonary Behah
	* Indicates a Required Field Preview OK Cancel	
	1	* Pulmonary Rehab is a grade 1C recor
<u></u> 1	first created a standardized referral	COPD Exacerbations. Generally, pulmo started within 4 weeks of discharge after
bathv	way for pulmonary rehabilitation,	This consult will be reviewed by an BT
startir	ng with a consult order and template in	to determine eligibility and options. The
he (computerized patient record system	the appointment and will also order PFT
CPR	<u>(3).</u>	Most patients will qualify. Exceptions ar
		persuing end-of-life planning or hospice
We th	hen inserted decision support into the	persuing end-of-life planning or hospice who have no interest in participation.
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DISCUSSION ITION • Our results show a trend towards significant increase in # PNEUMONTA rates of pulmonary rehabilitation documentation and #URINARY TRACT INFECTION (UTI); referrals. #ENDOCARDITIS: • However, implementing a standardized process alone does NEUROLOGICA not guarantee its use nor that it will lead to a significant #SYNCOPE/PRE-SYNCOPE #DELIRIUM: change in desired outcome. • Changes in AE-COPD admission and readmission rates **# PULMONARY** were difficult to assess due to seasonal variation, but have #COPD EXACERBATION: #OBSTRUCTIVE SLEEP APNEA: remained essentially unchanged. • Although our primary goal to decrease readmission rates of #ACUTE KIDNEY INJURY (AKI) veterans admitted for AE-COPD is not yet achieved, we #CHRONIC KIDNEY DISEASE: demonstrate that the introduction of a standardized process for ordering pulmonary rehabilitation resulted in an increase in the number of Veterans that receive this ect all that apply evidence-based intervention. +Pulmonary Rehab (indicated for all COPD exacerbations*) NEXT STEPS +Inhaled breathing treatments to open up your breathing tubes +Prednisone, a steroid to help calm the swelling and irritation of the +Antibiotics to kill any bacterial infection in your breathing tubes • Future quality improvement cycles will involve workflow optimization (**Figure 2**) to ensure patients referred will start pulmonary rehabilitation within 28 days. Pulmonary Rehab: • Standardize staff training to include building awareness about the workflow through provider education (Figure 3). INSTRUCTIONS: Eventually broaden intervention to include other care * Pulmonary Rehab is a grade 1C recommendation for preventing COPD Exacerbations. Generally, pulmonary rehab should be elements, such as tobacco cessation, COPD action started within 4 weeks of discharge after a COPD exacerbation planning, and inhaler technique documentation (**Table 1**). This consult will be reviewed by an RT who will contact the patient to determine eligibility and options. They will then arrange Reviews consult & Reviews chart to with comment change status to → determine patient → Is eligible for PR? → No→ (significant finding) the appointment and will also order PFTs if needed. of new consult stating why pt. ineligible Most patients will qualify. Exceptions are patients who are PFT within 2 years? persuing end-of-life planning or hospice options, or patients Fills out note template and documents who have no interest in participation. encounter plate to ens Tags Mary Clites to auirements a ion **"POR PULN** order PFTs satisfied) In in doubt, please proceed with the consult. Consult Forwarded to Community Calls patient to Care Pulmonary (EXACT SERVICE << Pulmonary Rehab E Consult >> discuss options for Signs note **TBD**) with Comment (Significant PR: Tele-rehab or Finding): Veteran prefers Center-Center-based rehab based Service Is Captured for form Rehab Decision – Based —— Veteran Declines CHARTS Chronic Obstructive Pulmonary Disease (COPD Symptoms Assessed (includes Assessment of a Consult Canceled Least 1 of the Following: Dyspnea, Cough/Sputum Wheezing), or Respiratory Symptom Assessment with comment Documents pati (Significant finding) Tool Completed (COPD) ontact and decision HBPR Clinic & indicating why using "Pulmonary Echedules intake Consult" note title encounter charge Documentation **Figure 2.** Future state back-end workflow map tions _____ _____. Step 2: A new order → % admissions w/ PR in menu will appear... order is for patients who may quality and benefit from p . _ _ _ _ _ _ _ _ _ _ _ _ _ / DCI ». atients typically qualify for pulmonary rehab after an acute racerbation of COPD who have at least minimal functions - Click the order Now Available: Pulmonary Rehabilitation for e options are being pursued. tients should understand and agree to participate in the Prevention of COPD Exacerbations ab process. Putmonary Rehabilitation Specialist will conduct a thorough c w to assess for any contraindications to the pulmonary --- Upper Control ogram. If patient participation is deemed inappropriate, the ord ovider will be notified of decision. Pulmonary Rehab E Consult >> Why should I order pulmonary rehabilitation on most COPD patients? Step 3: Complete the The VA Portland Healthcare System (VAPORHCS) underperformns as compared to other









Figure 3. Proposed provider education materials

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