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Improving Pulmonary Rehabilitation Referral and Uptake for Chronic Obstructive Pulmonary Disorder

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Introduction

Chronic obstructive pulmonary disease (COPD) is one of the most common chronic conditions worldwide (Stefan et al., 2017). Exacerbations of COPD account for over 700,000 hospitalizations annually in the United States (Spitzer et al., 2019). Following an exacerbation, guidelines for treating COPD recommend initiating pulmonary rehabilitation (PR). Nevertheless, many individuals with COPD are not referred to PR. Participation in PR following exacerbation improves exercise capacity and quality of life and reduces readmissions and mortality (Barker et al., 2021). Despite having an associated pulmonary rehabilitation center on site, one rural health clinic in Southern Illinois had no patients with chronic obstructive pulmonary disease (COPD) enrolled in the pulmonary rehabilitation program. Historically, according to the PR center, few patients have been referred to the program by clinic providers. This project aimed to increase the referral of COPD patients to PR by increasing provider knowledge of PR components and whom, how, and when a referral is recommended. It also aimed to increase the uptake of PR by those referred by improving the process of educating patients with COPD about the benefits of PR.

Literature Review

Early et al. 2018, found that PR referral is impacted by provider knowledge of who and how to refer, the burden of making a referral, the provider's positive or negative influence, and accessibility to a PR program. Foster et al., 2015, indicated that general practitioners need to learn what PR involves; the lack of clear guidelines about who is responsible for making a referral and the lack of clarity about referral processes are all barriers to referral. Cox et al. (2017) found that positive reinforcement from healthcare professionals during the referral process, support and enthusiasm about PR being a worthwhile endeavor by the referring healthcare provider, social/family support to attend, and the positive impact of PR's group setting are all enablers to uptake of PR by patients. Foster et al. 2016, found that measures to increase clinicians' knowledge about PR and to alert them to patients who are

eligible for PR influenced their behavior regarding referral to PR. The healthcare provider's knowledge and attitude regarding PR shape the patient's understanding of PR and demystify their expectations.

Methods

The project's primary goals were to improve the process of referral to pulmonary rehabilitation (PR) by providers and to improve the process of educating patients with COPD about the benefits of PR. The project occurred at a rural health clinic in Southern Illinois from June 27th until August 22nd, 2022. During project implementation, seven providers were educated on the benefits of pulmonary rehabilitation and the requirements for a successful referral to PR. Twenty-nine patient examination rooms at the clinic were equipped with educational posters and tools for providers to use when discussing pulmonary rehabilitation with their patients. The Institutional Review Board at Southern Illinois University Edwardsville determined the project to be a quality improvement project exempt from board review.

Evaluation

A clinic report was generated, documenting the number of patients seen with a qualifying diagnosis for referral to PR during the eight-week project implementation period. The local PR facility was contacted to identify if any referrals were received and if they enrolled any participants in PR during the eight-week project period. No patient-identifying information was obtained. Pre-assessment and identical post-assessment questions titled "Clinician Referrals to Pulmonary Rehabilitation for Patients with COPD" (Figure 1) were used to determine the quality improvement project's effectiveness. Providers were asked to rate their confidence level in initiating a PR referral and their confidence in talking to their patients about the features and benefits of PR. Providers ranked their knowledge of the referral process, tested their knowledge of PR guidelines as a treatment for COPD, rated their opinion of patient education handout effectiveness, and rated the likelihood of continuing handout use. Finally,

providers were asked about the frequency of conversations about PR that they initiated with patients with COPD during office visits in the past couple of months.

At the end of the project, the clinic's business manager reported thirty-two patients whose visits were coded for a COPD-related office visit during the eight weeks. There were no new patients enrolled or referred to PR during the project. A small number of patients whose office visits were coded for a COPD-related visit were seen in the clinic during the project, limiting the project's impact. Educating providers about PR and encouraging them to refer their patients to PR resulted in no change in the number of patients referred to or enrolled in PR. Overall, providers' confidence in explaining the features and benefits of PR to COPD patients increased. Providers also felt more knowledgeable about when and how to refer COPD patients to PR. The clinic providers reported that they referred four patients to pulmonary rehabilitation in the post-project survey. However, the cardiopulmonary rehabilitation clinic reported that they did not receive any new referrals and had no new participants. The status of provider self-reported referrals was unable to be verified. There were several limitations to this project. One limitation was the small number of office visits related to COPD. In addition, the electronic health records (EHR) system could not track the number of patients with a preexisting COPD diagnosis who had an office visit for an unrelated problem or wellness visit checkup and was not equipped to create an alert to remind providers to discuss pulmonary rehabilitation during COPD-related visits. The project was also limited by restrictions on patients identifying information, the inability to seek feedback from patients, and the brief time for the project implementation.

Figure 1 Pre- and Post-Project Evaluation
Clinician Referral to Pulmonary Rehabilitation for Patients with COPD

Rate your Confidence	Not Confident	Slightly Confident	Moderately Confident	Very Confident	Extremely Confident
Explaining Pulmonary Rehabilitation features to COPD patients.					
Explaining Pulmonary Rehabilitation benefits to COPD patients.					

Rate your knowledge	Not Knowledgeable	Slightly Knowledgeable	Moderately Knowledgeable	Very Knowledgeable	Extremely Knowledgeable
Knowing when to refer a COPD patient to pulmonary rehabilitation					
Knowing how to refer a COPD patient to pulmonary rehabilitation.					

How often do you:	Never	Rarely	Sometimes	Frequently	Always
Talk to COPD patients about Pulmonary Rehabilitation as a COPD treatment					
Make a referral to Pulmonary Rehabilitation					

How likely would you be to refer this patient to pulmonary rehabilitation?	Not Likely	Somewhat Likely	Moderately Likely	Very Likely	Extremely Likely
Stable COPD patient					
COPD patient on oxygen					
How likely would you be to refer this patient to pulmonary rehabilitation?	Not likely	Somewhat Likely	Moderately Likely	Very Likely	Extremely Likely
COPD patient with a recent history of exacerbation					
COPD patient with residual COVID-19 symptoms for greater than four weeks.					

- 1) COPD accounts for what number of annual hospitalizations in the United States?
 - a. 500,000

- b. 700,000
 - c. 1.5 million
 - d. 15.4 million
- 2) Pulmonary rehabilitation is a non-pharmacologic treatment recommended for stable stage II, III, and IV COPD according to GOLD Guidelines.
- a. True
 - b. False
- 3) Pulmonary rehabilitation should be initiated within 3 weeks of exacerbation according to guidelines from the American Thoracic Society and the American College of Chest Physicians.
- a. True
 - b. False
- 4) Medicare covers pulmonary rehabilitation for COPD patients with moderate to severe COPD (GOLD classification II, III, and IV).
- a. True
 - b. False
- 5) Pulmonary rehabilitation consists of:
- a. Physical therapy assigned exercises, 30 minutes of aerobic exercise, evaluation by a psychologist, smoking cessation session, and a group treatment plan.
 - b. A standard set of exercises, preset goals for aerobic exercises, and an evaluation by a physical therapist.
 - c. Physician-prescribed exercise, education and treatment tailored to individual needs, psychosocial assessment, outcomes assessment, and individualized treatment plans.
 - d. Exercise of the patient's choice, goal setting, peer mentoring, and breathing exercises.
- 6) Most patients with COPD are referred to pulmonary rehabilitation.

- a. True
- b. False

7. Pulmonary rehabilitation has the following positive effects:

- a. Improved dyspnea and self-management
- b. Improved functional capacity and quality of life
- c. Improved psychological well-being
- d. A and B
- e. A, B, and C

	<i>None</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4 or more</i>
In the past 2 months, I have referred # of COPD patients to PR					

Impact on Practice

The immediate impact at the clinical site was that seven primary care providers were educated about PR as a non-pharmacologic treatment for COPD. They were taught how to use a modified dyspnea scale and CAT assessment tool to evaluate whether the patient was symptomatic. They were educated about the pulmonary function test as the determining factor for COPD levels one through four. The providers learned that Medicare requires a pulmonary function test proving stage two through four COPD and documentation that the patient is symptomatic despite pharmacologic treatment for PR coverage. The clinic now has posters in each exam room that educate patients about the positive benefits of pulmonary rehab. The clinic providers now have a discussion tool in each exam room to aid in explaining the multidisciplinary components that comprise pulmonary rehabilitation with the patient.

The predicted long-term impact is that providers will continue to use the dyspnea score and CAT assessment tool to evaluate the COPD patient's symptoms. Another predicted long-term impact is that providers will order pulmonary function tests for COPD patients who do not have one recorded or who have had a change in their health statuses, such as a documented occurrence of pneumonia, COPD

exacerbation, or COVID-19 infection. Finally, a predicted long-term outcome is that providers will consider referring COPD patients to pulmonary rehabilitation as a form of treatment for COPD.

Conclusions

The project resulted in providers having a tool to discuss the components of PR with patients. The project also resulted in the clinic displaying posters in examination rooms to inform patients of the benefits of PR and increased provider confidence in explaining the features and benefits of PR to patients with COPD. The project also increased provider knowledge of how and when to refer a COPD patient to PR. Overall, clarification is needed as to whether the project increased the number of PR referrals or the uptake of PR by patients with COPD. Providers reported four referrals, but the local PR center received no referrals. The cause of this is unknown.

Suggested alterations for ongoing improvement include the implementation of an EHR provider alert in the records of patients with a COPD diagnosis, complete with prompts to assess symptom control, evaluate the presence of a PFT on file, and initiate a discussion about PR with the patient. Additional suggestions would be to incorporate education about pulmonary rehabilitation into a discharge bundle for patients hospitalized for COPD exacerbation at the hospital where the physicians have admitting privileges. The discharge bundle would introduce the patient to PR before their hospital follow-up appointment. Four weeks after discharge for exacerbation, the patient could be referred to PR, allowing time for any needed PFT testing and insurance approval due to the recent qualifying event. Another suggestion is to incorporate the modified dyspnea screening and CAT assessment of symptoms of COPD into annual wellness visits to allow for tracking of symptom progression over time. By documenting a screening of COPD symptoms annually, the provider can better evaluate if symptoms increase over time. Documenting changes in symptoms allows for re-evaluation of the need for repeat PFT testing and referral to pulmonary rehabilitation for patients with stable COPD.

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