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Clinical Practice Guideline: Self-care Management for Patients with Chronic Obstructive Pulmonary Disease (COPD)

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Executive Summary: Clinical Practice Guideline
Clinical Practice Guideline: Self-care Management for Patients with Chronic Obstructive
Pulmonary Disease (COPD)

by

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Summary

The DNP project is a clinical practice guideline (CPG) quality improvement project to guide nurses in caring for patients admitted with chronic obstructive disease (COPD). The quality issue identified was an increased readmission rate for patients with COPD in the facility, of which knowledge and awareness remain extremely low. An annual target of 19.36% was set by the facility to track the readmission rate of patients with COPD, and according to statistics from the facility, from July 2021 to June 2022, the rate was 25.7%; from July 2022 to June 2023, the readmission rate increased to 26%, thus necessitating urgent intervention to curb the rate. The purpose of developing this guideline is to help guide nurses in providing information to improve self-care management for patients with COPD. I developed the guidelines based on current evidence-based information and followed the disease-specific education guide established by the project organization. Three experts evaluated the CPG to determine its quality and usability using the AGREE II questions document and recommended the guidelines for use in the facility. It is believed that appropriate management can result in symptom control, potentially slow the progression of the disease, reduce the frequency and severity of exacerbations, improve lung function, improve the patient's quality of life, and reduce COPD-attributable costs (Hosseinzadeh & Shnaiget, 2019). Through this, the facility will meet its target readmission goal, and no funds will be lost to the Medicare and Medicaid readmission program. Furthermore, education on the self-management of COPD has been shown to improve patients' quality of life and reduce hospital admissions. I recommend integrating the guidelines into the EPIC system so that nurses can easily access them.

Background

The health practice quality issue identified was an increased readmission rate for chronic obstructive pulmonary disease (COPD) patients in the facility. The hospital quality improvement and patient safety unit has been tracking the readmission rate for patients with different disease conditions, and marked improvement has been noted for conditions like congestive heart failure, myocardial infarction, and pneumonia. Meanwhile, the COPD readmission target is yet to be met. The readmission steering committee has been working to figure out ways to address this issue, and it was agreed that a clinical practice guideline is essential in ensuring quality patient care and outcomes. An annual target of 19.36% was set, and according to statistics from the facility, from July 2021 to June 2022, the rate was 25.7%; from July 2022 to June 2023, the readmission rate was 26%, which is still far from the target. In addition, the hospital has been losing funds from COPD patient readmissions because of the Hospital Readmission Reduction Program developed and implemented by the Center for Medicare and Medicaid Services to curb the rate of 30-day hospital readmissions for certain common high-impact conditions (Press et al., 2020).

Chronic Obstructive Pulmonary Disease (COPD) is a primary global health concern and a leading cause of morbidity and mortality. It is estimated to affect millions of people worldwide, and the World Health Organization (WHO) predicts that COPD will become the third leading cause of death globally by 2030 (Jang et al., 2019). Therefore, this issue must be addressed. The project question is as follows: Will developing a clinical practice guideline (CPG) for self-care management of patients with COPD provide valid information nurses can use to teach patients with COPD about self-

care management? The project aims to develop a CPG to guide nurses in providing information to improve patients with COPD self-care management.

I searched the following databases, PubMed and the Cochrane Library, using search terms such as *COPD*, *self-care management*, *frequent exacerbations*, *patient education*, *personalized action plans*, *telemonitoring*, and *health-related quality of life*. The Boolean operators like AND, OR, and NOT were used to connect the keywords and publication dates for scholarly articles filtered to within five years of publication. The initial search revealed many documents on respiratory diseases, some unrelated to the project question. I further delineated by selecting randomized controlled trials, systematic reviews, and studies on nurse-led COPD interventions. A total of 16 studies were used to guide the development of the CPG. The studies included 5 Level I, 2 Level II, 4 Level III, 2 Level IV, and 3 Level V. According to Johns Hopkins Research Evidence Appraisal, the quality rating was high (4) and good (1).

The evidence-based CPG will be a valid tool for nurses to teach patients with COPD how to improve their self-care management. Hosseinzadeh and Shnaiget (2019) found that self-management resulted in increased knowledge, medication adherence, physical activities, and smoke cessation in COPD patients. According to Yang et al. (2019), health education and nursing interventions focused on disease knowledge should help patients establish good self-management behaviors. Physical activities and smoke cessation in COPD patients and readmission were reduced with medication and multimodal and broader-scale system-level interventions (Sharpe et al., 2021). In addition, Sibbald et al. (2022) found that the best care for COPD improves health literacy by equipping patients with the knowledge and skills to manage their COPD. Furthermore,

education on the self-management of COPD has been shown to improve patients' quality of life.

Education programs improve global health-related quality of life (Folch-Ayora et al., 2019) and disease-specific knowledge (Jang et al., 2019). In addition, Collinsworth et al. (2018) identified that COPD chronic care programs positively impacted perceived patients' health. Education remarkably improved the patient's knowledge, practice, and self-efficacy. (Mohammed et al., 2020) and greatly benefit the patients and families (Aranburu-Imatz et al., 2022). Increased self-management programs increase patient compliance with treatment (Hancerlioglu et al., 2019) and will enhance patient activation and health literacy (Yadav et al., 2020). In addition, Russell et al., 2018 found that disease management self-efficacy has been proposed as an alternative or additional determinant of health outcomes. Also, patients with high confidence in coping with their chronic diseases have a heightened sense of control over their lives (Benzo et al., 2022). Embedding self-management plans into educative packages and empowering individuals with knowledge and self-belief will improve patient health outcomes (Boyer, 2023). Press et al. (2020) found that standardized nursing protocol, medication, patient education, and follow-up reduced re-admission. Respiratory education to frontline health workers optimized evidence-based care, patient support, and improved outcomes (Brooks & Levy-Milne, 2022). The evidence revealed that education is essential in COPD patient care; thus, developing clinical practice guidelines will provide valid tools for nurses to teach patients with COPD to improve their self-care management.

Clinical Practice Guideline Development

I developed evidence-based clinical practice guidelines (CPG) following a disease-specific guide template established by the project organization to guide nurses in providing information to improve self-care management for patients with chronic obstructive pulmonary disease (COPD; Appendix A). Three nurse leaders were chosen as experts to review the CPG for quality and usability using AGREE II (Appraisal of Guidelines for Research & Evaluation). The instrument assesses the quality and reliability of (CPGs; Zou et al.,2023). It provides a framework for evaluating the methodological rigor and transparency with which a guideline is developed. The tool comprises 23 items organized into six quality domains (Appendix B).

The experts were registered nurses with bachelor's and master's degrees in nursing and included two clinical educators and a patient care manager in units where this patient group is managed. They were briefly educated on how to access and use the AGREE II document in evaluating the CPG to ascertain its validity and usability, which they completed online and sent back to the project manager. Several published studies have used the AGREE II instrument for assessing quality. Shallwani et al. (2019) used the AGREE II instrument to determine the quality of physical activity recommendations for cancer patients. A critical appraisal of urolithiasis clinical practice guidelines using the AGREE II instrument was done by Zou et al. (2023). This study assessed the reporting quality of evidence-based CPGs for urolithiasis, and new insights for improving guideline quality in urolithiasis are provided.

Results

The expert panel reviewed each domain within two to three weeks and recommended the guidelines to be used by nurses for patient education. Domain scores were calculated by summing up all the scores of the individual items in a domain and by scaling the total as a percentage of the maximum possible score for that domain. (see Table 1). Using this formula, the results of the three experts were calculated (see Table 2).

Table 1

Sample Scoring Process

Domain 1	Expert #1	Expert #2	Expert #3	Total Score
Item 1	7	7	7	21
Item 2	7	7	6	20
Item 3	7	7	6	20
Total	21	21	19	61

Note. Maximum possible score = 7 (strongly agree) x 3 (items) x 3 (appraisers) = 63.

Minimum possible score = 1 (strong disagree) x 3 (items) x 3 (appraisers) = 9

The scaled domain score will be:

Obtained score – Minimum possible score

Maximum possible score – Minimum possible score

$$\frac{61 - 9}{63 - 9} \times 100 = \frac{52}{54} \times 100 = 0.96296 \times 100 = 96.3 \sim 96\%$$

Table 2*Domain Scores*

Domain	Expert #1	Expert #2	Expert #3	Total Mean Score
Scope and Purpose	7	7	6.3	96%
Stakeholder Involvement	7	7	6.3	96%
Rigor of Development	7	7	7	100%
Clarity of Presentation	7	7	6.3	96%
Applicability	7	7	6.25	96%
Editorial Independence	7	7	7	100%
Overall Assessment #1				
- Rate the overall quality of this guideline.	7	7	7	100%
Overall Assessment #2				
- I would recommend this guideline for use.	Yes	Yes	Yes	100% Yes

After the expert reviewers approved the guideline, the document was shown to some stakeholders/end users from the facility. They included nursing leaders and two members of the readmission committee. They agreed with the reviewers on the readability and usability of the developed guideline. The nurse leadership and nurses reported that this is a valid document that would improve their knowledge and help provide quality patient education. They were optimistic that its use by nurses for patients with COPD would positively impact their self-care management, thus reducing their exacerbation and readmission rate.

The Potential Impact of Adopting the CPG on the Organization

The proposed CPG was discussed with stakeholders in the facility from the onset and throughout the project process. They agreed to develop guidelines to help nurses provide valid education to patients with COPD for their self-care management. The facility has been losing funds from COPD patient readmissions for not being in alignment

with the Hospital Readmission Reduction Program developed and implemented by the Center for Medicare and Medicaid Services to curb the rate of 30-day hospital readmissions for certain common high-impact conditions. The nursing leaders gave the project maximum support and approval, as did the quality improvement, patient safety members, and the facility's readmission committee. The guideline is believed to be a valid document for the self-care management of patients with COPD. It has the potential to help improve their knowledge of the importance of adopting a positive lifestyle to reduce exacerbation, emergency room visits, and readmission. Implementing this guideline can help the facility achieve its targeted COPD patient readmission rate, aligning its readmission rate with the Hospital Readmission Reduction Program goal.

Limitations of the Study

Identifying and addressing limitations is crucial for enhancing the credibility and utility of quality improvement projects. While developing the CPG document, some of the limitations encountered that may affect the scope and quality of the project if not well managed include.

Time

Developing guidelines requires input from various stakeholders, including healthcare professionals and policymakers. Adequate time allows for thorough literature reviews, systematic analyses, and consensus-building processes, whereas rushed timelines can lead to incomplete data analysis and less robust guidelines. The readmission committee of the facility would like to implement the use of the guidelines as soon as possible. However, there was a delay due to time spent trying to reach out to search literature and permission from relevant associations like the American Lungs

Association. Getting approval from nursing leaders, sourcing material, compiling, and getting it designed through marketing took a long time, but the important thing is that it was finally achieved.

Personnel

The qualifications and experience of the individuals involved directly affect the quality of the guidelines. Multidisciplinary teams with experts in relevant fields ensure comprehensive and evidence-based recommendations. Getting credible personnel to mentor and review the guideline to validate its readability and usability may delay the project process. Despite some delays, such as the resignation of the first mentor, the nurse leaders were beneficial in providing another mentor, and I could access reviewers with less stress. Effective teamwork and communication among diverse personnel are crucial in developing CPG, and lack of coordination can lead to inconsistencies and gaps in the guidelines.

Fund

Adequate funding is essential for conducting high-quality research, systematic reviews, and meta-analyses that form the foundation of clinical guidelines. It supports procuring the necessary technology and tools for data collection, analysis, and dissemination of guidelines. Funding is necessary for the effective dissemination of guidelines and for training healthcare providers to implement them in practice. Considering the nature of the project, funding was not easy, but because it was of utmost importance to the facility, it was made a priority and produced with maximum support. The project manager spent a little money on transportation for various meetings to complete this excellent work.

Importance of the Project Beyond Local Site

The project of developing clinical practice guidelines to help nurses provide valid information on the self-care management of patients with COPD is of great importance to the local site and the extended community. COPD is a global issue affecting many and a leading cause of increased mortality and morbidity. It is estimated to affect millions of people worldwide, and the World Health Organization (WHO) predicts that COPD will become the third leading cause of death globally by 2030 (Jang et al., 2019). National medical costs attributable to COPD are projected to increase from \$32.1 billion in 2010 to \$49.0 billion in 2020 (Collinsworth et al., 2018). Though not a treatable disease, COPD management through exacerbation prevention is imperative to prolong life and health, and this can be achieved through valid education and guidance by healthcare professionals using clinical guidelines. Self-management resulted in increased knowledge, medication adherence, physical activities, and smoke cessation in COPD patients (Hosseinzadeh & Shnaiget, 2019). When this patient understands and practices self-care management, the potential for positive health outcomes for the individual and the nation's economy will improve because of reduced medical spending in cases like COPD.

Conclusions

Impact on the Organization

Before the development of the CPG for COPD patient education, there needed to be a valid document for nurses to educate and guide these patients towards self-care management, which is paramount to their health since the disease is not treatable. The facility has been losing funds to Medicare and Medicaid due to this patient's readmission

rate, which does not align with the HRRP readmission policy. The administration is optimistic that implementing this guideline in patients' education will impact their readmission target rate. This motivated them to give their maximum support and make the production of this guideline a priority for the marketing unit. It was a welcomed project by the nursing leaders, the quality improvement and patient safety unit, and the readmission committee. This will make COPD patient education easier for nurses to implement.

Recommendation

Having developed the clinical guidelines for use by nurses, I recommend that the education and care plan be integrated into the EPIC system to help nurses document patients' education as provided. Apart from making it easy for nurses to report, it will help the nursing leadership, quality improvement, and patient safety unit track the implementation and use of the guideline. I recommend that the facility collect data in 1, 3, and 6 months to ascertain the impact of CPG use on patient readmission rates. In addition, I recommend educating nurses on the content and use of this guideline annually and during nursing orientation to ensure knowledge improvement, especially for newly employed nurses, and continuous improvement for current nurses.

Potential Implications for Nursing Practice

Nurses are an essential and significant workforce in the healthcare system and contribute significantly to delivering quality healthcare services and improving health outcomes for individuals, families, and communities through preventative or curative measures (Tamata & Mohammadnezhad, 2023). COPD is a disease of global concern and presently has no cure. Still, studies have proven that education is imperative in impacting

them with the necessary knowledge to implement self-care management, and nurses are pivotal in fulfilling this critical task in patient care. The CPG has the potential for positive social change for patients with COPD, nurses, and the organization. Patients with COPD need more guidance and education to track their health progress using My COPD Action Plan. This document is part of the clinical guidelines, and nurses who spend the most time with patients are in the best position to guide them through this process. Thus, increasing the patient's ability to self-care and manage their condition. Nurses will be empowered with evidence-based information to teach patients with COPD and facilitate positive patient outcomes. In addition, increasing patients' ability for self-care has the potential to decrease the cost of managing the care of these patients in the hospital. These clinical practice guidelines were explicitly developed to help nurses provide valid information on self-care management for patients with COPD.

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Appendix A: Clinical Practice Guideline

Self-care Management of Chronic Obstructive Pulmonary Disease

This Doctor of Nurse Practice (DNP) project aims to develop evidence-based clinical practice guidelines (CPG) from recent sources that will guide nurses in providing information to improve self-care management for patients with chronic obstructive pulmonary disease (COPD). Embedding self-management plans into educational packages and empowering individuals with knowledge and self-belief will improve patient health outcomes (Boyer, 2023). Education on self-care management of COPD has been shown to improve patient's quality of life and reduce hospital admission (Press et al., 2020).

Problem Statement

Will developing a clinical practice guideline for self-care management of patients with COPD serve as a guide for nurses to teach patients about self-care management of COPD?

Target Population

This CPG is developed to guide nurses and healthcare providers in adult inpatient care settings in providing valid educational information to patients with COPD on their self-care management. COPD is a primary global health concern and a leading cause of morbidity and mortality. It is estimated to affect millions of people worldwide, and the World Health Organization (WHO) predicts that COPD will become the third leading cause of death globally by 2030 (Jang et al., 2019). Although there is no current cure for COPD, it is believed that appropriate management can result in symptom control, potentially slow the progression of the disease, reduce the frequency and severity of

exacerbations, improve lung function, improve patients' quality of life, and reduce COPD-attributable costs (Collinsworth et al., 2018).

Guideline Monitoring

Clinical practice guideline monitoring is the systematic process of assessing, evaluating, and updating them to ensure they remain current, evidence-based, and aligned with the best healthcare practices. As Beauchemin et al. (2019) state, CPGs are developed through a rigorous systematic methodology and grading of recommendations assessment, development, and evaluation (GRADE). Both approaches recognize that guidelines need to be trustworthy and understandable from the perspective of key stakeholders, and the goal is to guide clinicians in providing the most up-to-date, evidence-based, and highest-quality care for their patients (Beauchemin et al., 2019). Clinical guidelines require updating to ensure the validity of the recommendations. Although a guideline has no fixed lifespan, an update every three to five years is generally recommended (Cardwell et al., 2021). These guidelines should be reviewed every two to three years or with new recommendations for COPD management.

Introduction

The health practice quality issue identified was an increased readmission rate for COPD patients in the facility. The hospital quality improvement and patient safety unit have been tracking the readmission rate for patients with different disease conditions, and marked improvement has been noted for conditions like congestive heart failure, myocardial infarction, and pneumonia, while the COPD readmission target is yet to be met. The facility's readmission steering committee has been working to determine the best approach to address this issue; the committee members agreed that education is

essential in ensuring quality patient care and outcomes. An annual target of 19.36% was set, and according to statistics from the facility, from July 2021 to June 2022, the rate was 25.7%; from July 2022 to June 2023, the readmission rate increased to 26%, thus necessitating urgent intervention to curb the rate. In addition, the hospital has been losing funds from COPD patient readmissions for not being in alignment with the Hospital Readmission Reduction Program (HRRP) developed and implemented by the Center for Medicare and Medicaid Services to curb the rate of 30-day hospital readmissions for certain common high-impact conditions (Press et al., 2020).

Chronic Obstructive Pulmonary Disease is a primary global health concern and a leading cause of morbidity and mortality. It is estimated to affect millions of people worldwide, and the World Health Organization (WHO) predicts that COPD will become the third leading cause of death globally by 2030 (Jang et al., 2019). National medical costs attributable to COPD are projected to increase from \$32.1 billion in 2010 to \$49.0 billion in 2020 (Collinsworth et al., 2018). Although there is no current cure for COPD, it is believed that appropriate management can result in symptom control, potentially slow the progression of the disease, reduce the frequency and severity of exacerbations, improve lung function, improve the patient's quality of life, and reduce COPD-attributable costs. Hosseinzadeh and Shnaiget (2019) found that self-management resulted in increased knowledge, medication adherence, physical activities, and smoke cessation in COPD patients. Furthermore, education on the self-management of COPD has been shown to improve patients' quality of life and reduce hospital admissions. According to Yang et al. (2019), health education and nursing interventions focused on disease knowledge should help patients establish good self-management behaviors.

Conclusion

Quality improvement involves systematically identifying, analyzing, and implementing changes in processes, systems, or services to enhance quality and achieve better outcomes (Nash et al., 2019). It aimed to identify the best evidence-based approach to bridging any gap in healthcare for the best patient experience. Despite the increasing prevalence of COPD worldwide, knowledge and awareness remain extremely low. Patients with COPD experience high rates of hospital readmissions, placing substantial clinical and economic strain on the healthcare system (Sharpe et al., 2021). Providing patients with disease-specific education is integral to their self-care management of COPD, improving patients' quality of life and emotional status. Thus, early education after a COPD diagnosis can be beneficial (Jang et al., 2019).

This clinical practice guideline will focus on the overview of COPD, its causes and risk factors, signs and symptoms, stages, diagnosis, treatment options, management of flare-ups (exacerbation), the process of quitting smoking, good exercises for patients with COPD, advance directives, impacts of the Community Paramedic Program on helping with the transition of care for these patients on discharge. These will be presented in sections starting from pages 4-17. An appendix for supplemental information on my COPD Action and Management Plan will also accompany this document.

What is COPD?

Chronic Obstructive Pulmonary Disease (COPD) is a long-term lung disease that makes it hard to breathe. It includes chronic bronchitis and emphysema. It is often caused by smoking but can also result from long-term exposure to other lung irritants. In simple terms, it is a condition where breathing becomes difficult due to damage to the lungs.

Prevalence: COPD is a major global health issue and is a leading cause of severe illness and death worldwide. It is quite common and affects millions of people.

Causes and risk factors: The most common cause of COPD is smoking, which damages the lungs over time. It is more common in older adults, as lung function naturally declines with age. Breathing in harmful chemicals or particles from the air can also lead to COPD. Working in environments with dust, fumes, or chemicals can increase your risk of developing this disease.

Infections from indoor pollutants like cooking fumes, secondhand smoke, and chronic respiratory infections can damage the lungs, leading to COPD. Some people may be more likely to develop COPD due to genetic factors (Alpha-1 antitrypsin gene deficiency) and personal risk factors like diabetes, obesity, heart disease, and Gastroesophageal Reflux Disease (GERD).

Signs and symptoms of COPD:

Early problems are:

- Constant coughing (smoker's cough)
- Shortness of breath with activity
- Wheezing
- Excess mucus production coughed up as sputum.

As the disease progresses, problems include:

- Worsening shortness of breath
- A choking feeling when lying flat
- Tiredness
- Weight loss

- Frequent respiratory infections
- Blueness of the lips or nail beds

Stages of COPD

The Global Initiative for Chronic Obstructive Lung Disease (GOLD) simplifies the severity of the disease into four stages based on ease of breathing (airflow limitation), symptoms, and risk of flare-ups (exacerbations). This staging helps the doctors understand the severity of your disease and guide treatment decisions.

Stage 1 (mild): Mild airflow limitation. Often, there are no symptoms or only mild symptoms like coughing and mucus production. Usually, it is not diagnosed at this stage.

Stage 2 (moderate): Moderate airflow limitation. Symptoms become more noticeable, including shortness of breath during physical activity.

Stage 3 (severe): Severe airflow limitation. Symptoms worsen significantly, leading to more frequent exacerbations and increased difficulty with breathing, even during mild activities.

Stage 4 (very severe): Very severe airflow limitation. Symptoms are highly debilitating, significantly impacting daily life. Exacerbations are frequent, and quality of life is significantly impaired.

How do doctors diagnose COPD?

Your doctor will take a thorough medical history to learn about your symptoms and existing medical conditions before performing a physical examination to gather more information about your symptoms.

Tests performed to diagnose COPD may include:

Pulmonary function test (spirometry): This test assesses your lung function. You can do this simple test in your PCP's office or with a pulmonologist, which usually takes an hour to complete. During the test, the technician will ask you to blow all the air out of your lungs into a spirometer machine. You might have to do the test multiple times, and even though it may cause fatigue, there are no side effects.

Bronchoscopy allows your doctor to look inside the lungs using a thin, flexible tube (bronchoscope). This is put into the nose or mouth, down the throat and windpipe (trachea), and into the airways for diagnostic and treatment purposes.

Imaging studies, such as chest X-rays and CT scans, may also be used to evaluate the extent of lung damage. Laboratory tests can also be done to check for genetic factors (Alpha-1 antitrypsin gene deficiency) and arterial blood gas (ABG).

How is COPD managed?

While there is no cure for COPD, various treatment options aim to alleviate symptoms, improve lung function, and enhance the overall quality of life. Treatment may include the following:

Medications

Different types of medication may be given to you while treating your COPD. It is essential to note that certain foods and drugs may interact with your COPD medicines, so be sure to discuss this with your doctor.

Bronchodilators: These medications relax and widen the airways in the lungs, making breathing easier. Some have long-acting effects, while others are short-acting and

are used primarily for acute exacerbations of COPD. **Common side effects** include headaches, dry mouth, constipation, palpitations, tachycardia, nervousness, and nausea.

Corticosteroids: Corticosteroids, often referred to simply as steroids, are a class of medications that mimic the effects of natural corticosteroid hormones produced by the adrenal glands. They have potent anti-inflammatory and immunosuppressive properties, making them valuable in treating COPD. Inhaled corticosteroids are taken daily, and they work to reduce inflammation in the lungs over time. Systemic corticosteroids usually come as pills or shots and are used for a short period during COPD exacerbations.

Common side effects include increased appetite, weight gain, mood changes, insomnia, osteoporosis, an increased risk of infections, cataracts, adrenal suppression, skin thinning, and oral thrush (**NB: Remember to rinse your mouth after using the inhaler**).

Mucolytics: These medications help break down and thin mucus in the airways, making clearing mucus from the respiratory tract easier. **Common side effects** include nausea, vomiting, sulfur odor in the breath, and skin rash.

Phosphodiesterase-4 inhibitors (PDE): These are a class of medications that block the action of phosphodiesterase enzymes. These enzymes play a role in regulating various signaling pathways within cells. They help reduce the frequency of flare-ups in COPD patients. **Common side effects** are facial flushing, headaches, indigestion, nasal congestion, visual disturbances, and back pain or muscle aches.

Antibiotics: These are given to treat bacterial infections in your lungs, such as pneumonia and bronchitis, which may worsen your COPD symptoms. Please remember to talk to your doctor if you are taking any medication to discuss drug interactions because antibiotics can reduce the effects of other medicines.

Antihistamines: These are a class of medications commonly used to treat allergic reactions and allergic symptoms. They work by blocking the effects of histamine, a substance released by the body during an allergic reaction. **Side effects** include drowsiness, dry mouth, blurred vision, constipation, and urinary retention.

Contact your doctor immediately or seek medical attention for any side effects.

For worsening shortness of breath, allergic reactions, or other life-threatening issues, call 9-1-1. Also, some herbal supplements can be harmful when taken with other medicines; therefore, check with your doctor before taking them.

Oxygen therapy: COPD makes it hard for oxygen to pass through your lungs into the body. Therefore, oxygen therapy is needed to increase the amount of oxygen that goes into the lungs and the body. This can also ease breathing and improve energy. You must adhere to your prescribed oxygen therapy regimen consistently and maintain safety measures, such as avoiding smoking and open flames due to the flammability of oxygen. Also, regular follow-up assessments are essential to evaluate the effectiveness of your oxygen therapy and make the necessary adjustments.

Pulmonary Rehabilitation

Pulmonary rehabilitation is a comprehensive, multidisciplinary program to improve your well-being and functioning. It involves exercise training, education, and behavioral interventions to help you manage your respiratory symptoms and enhance your quality of life.

Surgical Intervention

Surgical procedures are typically considered when other medical interventions are insufficient. Here are some surgical procedures that may be considered for certain COPD patients:

Lung Volume Reduction: This removes damaged or diseased lung tissue, allowing healthier lung tissue to function more efficiently.

Bullectomy: A surgical procedure that removes air pockets (bullae) from the lungs to ease breathing.

Lung Transplantation: A surgical procedure to replace a diseased lung with a healthy lung from a donor.

- How do I manage my health and prevent exacerbations?
- Do not smoke and avoid second-hand smoke.
- Eat a healthy diet and manage your weight.
- Manage environmental hazards and air quality (fumes, dust, dander, and pollen)
- Adhere to medication and other treatments.
- Medical equipment care, cleaning, and maintenance (incentive spirometer, oxygen, nasal cannula, nebulizer, blood pulse sensor, and CPAP/BiPAP). Discard non-reusable pieces of equipment and clean/ disinfect reusable ones using Sani cloths. **Remember that oxygen is highly flammable (catches fire quickly), so stay away from naked fire and do not smoke around the oxygen cylinder or while on oxygen.**
- Be up to date with Vaccination (influenza, COVID-19, pneumonia, RSV)

- Maintain a balance between activity and exercise; see below for exercise types.
- Keep track of follow-up appointments.

Quit Smoking

Smoking is the most significant modifiable risk factor for developing COPD. The more a person smokes and the longer they smoke, the greater the risk of developing the disease. Smoking cessation interventions and educational campaigns are critical components in the effort to reduce the burden of COPD worldwide.

Why should I quit smoking?

- To improve your overall health and well-being
- Reduce your risk of chronic lung diseases, cancer, heart failure, and stroke.
- Smoking can interact with the medications you are taking.
- Second-hand smoke is unhealthy for your family and others around you.

Follow these basic steps today to start a healthy life and quit smoking:

S: Set a date to stop.

T: Tell family and friends that you plan to stop.

A: Anticipate and plan for challenges.

R: Remove all cigarettes and tobacco products from your home, car, and workplace.

T: Talk to your doctor about getting help.

Quitting smoking may not be easy, but stay positive and seek help from smokefree.gov or call 1-800-QUIT-NOW.

Which exercises are good for me?

Regular physical activity offers numerous benefits in managing your COPD, including helping to improve your symptoms, enhancing lung function, and increasing your overall well-being. Some good exercises include:

Aerobic Exercise: Walking, cycling, and swimming are aerobic exercises that improve your cardiovascular fitness.

Strength Training: Resistance exercises target specific muscle groups, helping to improve your overall strength and endurance.

Breathing Exercises: Techniques like pursed-lip and diaphragmatic breathing can help improve your respiratory muscle function.

Flexibility Exercises: Stretching exercises enhance flexibility and joint range of motion.

Advance Directive

An advance directive is a legal document specifying the medical treatment you would like to receive or not receive if you cannot make your own medical decisions. It allows you to express your preferences regarding end-of-life care in advance. There are different types of advance directives, and they may go by various names depending on the jurisdiction. Two common types are:

- **Living Will:** This document outlines the types of medical treatments and interventions you would like to receive if you cannot communicate or make decisions independently.
- **Durable Power of Attorney for Health Care:** This document designates a person (a healthcare proxy or agent) to make medical decisions on your

behalf if you cannot do so. This person is typically someone you trust to follow your wishes.

If you already have an advance directive, ask a friend or relative to bring it to the hospital so your nurse can make a copy of the medical record. If you do not have one, you may contact the Patient Relations Department at 6156120, and a representative will provide you with the form and notary service.

End of Life and Palliative Care

Chronic Obstructive Pulmonary Disease is a progressive condition characterized by airflow limitation and is often associated with significant symptoms, exacerbations, and a reduced life expectancy, especially in advanced stages. End-of-life and palliative care for patients with Chronic Obstructive Pulmonary Disease (COPD) are critical components in managing the advanced stages of the disease and ensuring the best possible quality of life for patients and their families. Healthcare providers should initiate discussions about end-of-life care early in the disease process, preferably during diagnosis. This allows you and your family to understand the prognosis, discuss treatment preferences, and plan. Palliative care focuses on relieving symptoms such as dyspnea (shortness of breath), cough, fatigue, anxiety, and depression. Medications, oxygen therapy, pulmonary rehabilitation, and non-pharmacological interventions like breathing techniques and relaxation therapies can help alleviate your symptoms and improve your quality of life.

Community Paramedic Program

If you are eligible, this program offers free help with your transition back home after leaving the hospital. This includes:

- Reviewing your medications
- Assessing the risk in your home for falls
- Reviewing community resources available to assist with your needs.
- Education about your disease and the potential dangers caused by failing to comply with medical instructions.
- Assist in making healthy life choices.
- Consistent assessment and follow-up for no less than 30 days post-discharge.

If you have any questions or concerns, our community paramedic program offers 24/7 access to staff paramedics.

For more information, please call (910) 615-3430.

Although COPD cannot be cured, it can be treated. With regular and correct use of medications, a proper diet, a healthy lifestyle, and staying active, you can improve your COPD symptoms and lead a happier, more active life.

Resources

American Lung Association <https://www.lung.org/>

COPD Foundation <https://www.copdfoundation.org/>

Global Initiative for Chronic Obstructive Lung Disease- GOLD
<https://goldcopd.org/2023-gold-report-2/>

Appendix B: AGREE II Results

		Expert #1	Expert #2	Expert #3
Domain 1. Scope and Purpose	Item 1. The guideline's overall objective(s) is (are) specifically described.	7	7	7
	Item 2. The health question(s) covered by the guideline are specifically described.	7	7	6
	Item 3. The population to which the guideline is meant to apply is specifically described.	7	7	6
Domain 2. Stakeholder Involvement	Item 4. The guideline development group includes individuals from all relevant professional groups.	7	7	7
	Item 5. The views and preferences of the target population have been sought.	7	7	6
Domain 3. Rigor of Development	Item 6. The target users of the guideline are clearly defined.	7	7	6
	Item 7. Systematic methods were used to search for evidence.	7	7	7
	Item 8. The criteria for selecting the evidence are clearly described.	7	7	7
	Item 9. The strengths and limitations of the body of evidence are clearly described	7	7	7
	Item 10. The methods for formulating the recommendations are clearly described.	7	7	7
	Item 11. The health benefits and risks have been considered in the recommendations.	7	7	7
	Item 12. There is an explicit link between the recommendations and the supporting evidence.	7	7	7
Domain 4. Clarity of Presentation	Item 13. The guideline has been externally reviewed by experts before its committee review.	7	7	7
	Item 14. A procedure for updating the guideline is provided.	7	7	7
	Item 15. The recommendations are specific and unambiguous.	7	7	6
	Item 16. The different options for managing the condition or health issue are presented.	7	7	6
Domain 5. Applicability	Item 17. Key recommendations are easily identifiable.	7	7	7
	Item 18. The guideline describes the facilitators and barriers to its application.	7	7	6
	Item 19. The guideline provides advice on how the recommendations can be implemented.	7	7	7
	Item 20. The potential resource implications of applying the recommendations have been considered.	7	7	6
Domain 6. Editorial Independence	Item 21. The guideline presents monitoring criteria.	7	7	6
	Item 22. The views of the funding body have not influenced the guideline's content.	7	7	7
	Item 23. The competing interests of guideline development group members have been recorded and addressed.	7	7	7
Overall Assessment	OA 1. Rate the overall quality of this guideline.	7	7	7
	OA 2. I would recommend this guideline for use.	Yes	Yes	Yes