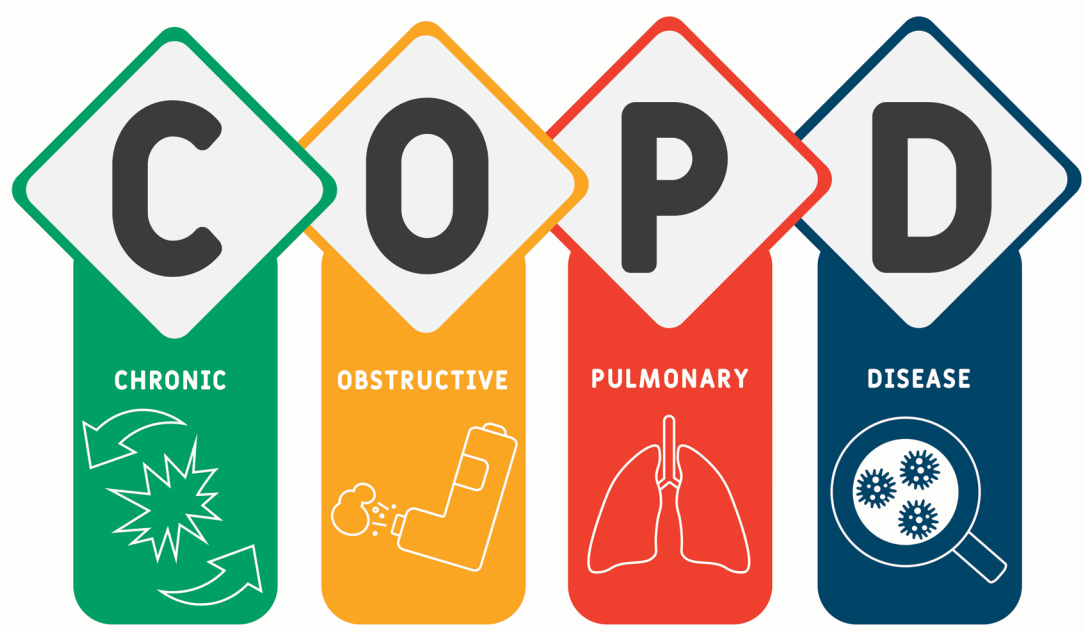
COPD:
A Provider's Guide

Breathe Easier — Together

Produced by the Vermont Department of Health, COPD Program



Acknowledgements

Three booklets have been prepared to support Vermonters impacted by COPD, their families and caregivers, and primary care providers who prevent, treat, and care for those with COPD to help "Breathe Easier – Together:"

1. COPD – A Workbook for Vermont Patient's Families and Caregivers
2. COPD – A Guide for Supportive Therapies
3. COPD – A Provider's Guide

The first two booklets are for individuals impacted by COPD and their families. They offer guidance and tools for navigating the care process and supporting self-management. The last booklet is designed for primary care providers who provide clinical care to those impacted by COPD and highlights national guideline care standards and best practices.

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To request additional copies of any of these booklets and the COPD Action Plan please email: AHS - VDH COPD Program AHS.VDHCOPDProgram@vermont.gov.

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COPD Diagnosis:

For patients presenting with symptoms consistent with COPD and relevant risk factors, spirometry is recommended to confirm the diagnosis.

Symptoms

- Chronic Cough
- Chronic Sputum
- Dyspnea:
  - Progressive
  - Persistent
  - Worsens with exertion or limits activities of daily living
  - Recurrent wheezing
  - Recurrent lower respiratory tract infections

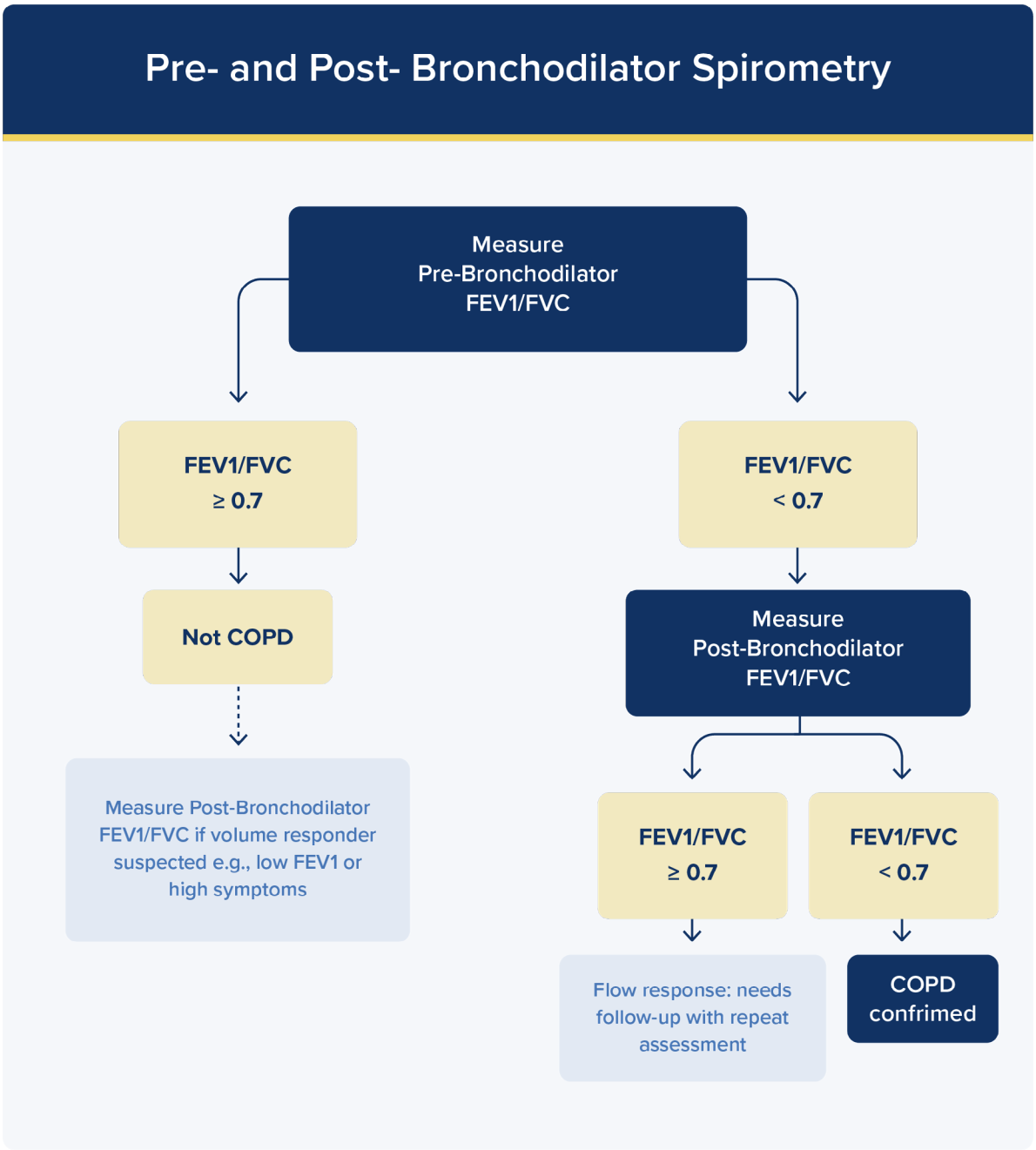
Exposure & Risk Factors:

- Smoking
- Exposure to smoke (secondhand smoke)
- Occupational hazards (dusts, vapors, fumes, chemicals)
- Home exposures (heating fuels, wood stoves, carpet)
- Host factors (birth weight, prematurity, genetics, developmental abnormalities, chronic pediatric illnesses)

Q: Can someone be diagnosed with COPD with normal spirometry?

A: Yes. If spirometry is normal but symptoms are consistent with COPD, first evaluate for other possible causes such as heart failure, bronchiectasis, or asthma. If no alternative explanation is identified, a diagnosis may be supported by symptoms in combination with chest imaging.

Spirometry:


Pre- and Post- Bronchodilator Spirometry
Measure Pre-Bronchodilator FEV1/FVC
FEV1/FVC ≥ 0.7
Not COPD
Measure Post-Bronchodilator FEV1/FVC if volume responder suspected e.g., low FEV1 or high symptoms
FEV1/FVC < 0.7
Measure Post-Bronchodilator FEV1/FVC
FEV1/FVC ≥ 0.7
Flow response: needs follow-up with repeat assessment
FEV1/FVC < 0.7
COPD confrimed

FEV1 (Forced Expiratory Volume in 1 second): The volume of air a patient can forcefully exhale in the first second of a maximal effort.

FVC (Forced Vital Capacity): The total volume of air a patient can exhale forcefully after a maximal inhalation.

FEV1/FVC ratio: The proportion of a patient's vital capacity exhaled in the first second. This measurement helps differentiate normal lung function from obstructive, restrictive, or mixed ventilatory patterns.

Determining Severity

The current recommendation from the American Thoracic Society is to assess COPD severity using z-scores. Spirometry is required for this determination.

COPD Supporting Therapies

Home Oxygen

Indications for supplemental oxygen:

- Peripheral oxygen saturation (SpO_2) <88% on room air or
- Partial pressure of oxygen (PaO_2) <55 mmHg on room air (requires arterial blood gas).

Management

- Prescribe supplemental oxygen to maintain SpO_2 >90% (target range for most COPD patients: 88–92%).
- Reassess oxygen requirements within 60–90 days to determine ongoing need or titration.

Pulmonary Rehabilitation

Pulmonary Rehabilitation (PR) is recommended for patients with symptomatic COPD or those who have had, or are at risk for, exacerbations. Patient information is available in **COPD – A Guide for Supportive Therapies.**

Core Components:

- Physical exercise and training
- Education on disease management
- Improved walking distance and exercise tolerance
- Improved dyspnea control
- Enhanced overall health and quality of life
- Reduced hospitalization risk after recent exacerbations
- Self-management strategies
- Psychosocial support

Medicare covers PR for patients with moderate to severe COPD (GOLD II–IV, see goldcopd.org). Benefits include up to two one-hour sessions per day, for a total of 36 sessions across 36 weeks. In some cases, insurance may cover a second round of PR. For full details, see the CMS guidance in Billing and Coding: Pulmonary Rehabilitation Services (A52770).

Smoking Cessation

Assess and document pack-year history to guide therapy, including nicotine replacement dosing. Encourage cessation at every visit. Consider referral to a smoking cessation counselor, or direct patients to 802Quits.org or **1-800-QUIT-NOW**.

802Quits.org is a free, local resource for Vermonters interested in quitting. Patients are paired with a quit coach who provides counseling and a personalized quit plan. Free nicotine replacement products are also available. A patient-facing resource is provided in **COPD – A Guide for Supportive Therapies.**

Nicotine Content: ~1.5mg per cigarette (20 cigarettes per pack)

Nicotine Replacement Therapy (NRT) Options

Over-the-Counter Options

Product	How to Use	Dosage	Side Effects
Patches	Apply daily to non-hairy skin above the waist	**>10 cigarettes/day:** 21 mg/day for 6 weeks, then taper by 7 mg every 2 weeks **<10 cigarettes/day:** 14 mg/day for 6 weeks, then taper to 7 mg/day for 2 weeks	Skin irritation, dizziness, tachycardia, nausea, headache, muscle aches, insomnia (first 3–4 days)
Gum	Chew when there is an urge to smoke. Use the "chew and park" method	**>25 cigarettes/day:** 4 mg **<25 cigarettes/day:** 2 mg Max 24 pieces/day. Up to 6 months	Bad taste, throat irritation, nausea, mouth sores, hiccups, tachycardia, jaw pain, excess salivation. Avoid acidic drinks 15 min before/after use
Lozenges	Use when the urge to smoke occurs	If smoking within 30 min of waking: 4 mg Otherwise: 2 mg. 1 lozenge every 1–2 hrs (first 6 wks), then taper over 6 more wks	Insomnia, nausea, hiccups, cough, heartburn, headache, mouth irritation. Do not use concurrently with tobacco. Avoid food/drink 15 min before use

2024, Clinician's Guide to Treating Tobacco Dependence, available from AARC.org, Irving, TX, USA

Prescription (Rx) Cessation Supports

Product	How to Use	Side Effects
Bupropion (Wellbutrin) (Boxed warning for this Rx)	Start 1–2 weeks before quit date. 150 mg daily x 3 days, then 150 mg BID.	Dry mouth, insomnia, agitation, headache, appetite changes, constipation
Varenicline (Chantix) (Boxed warning for this Rx)	Start 1 week before quit date. Take after meals with a full glass of water.	Nausea, agitation, headache, vomiting, insomnia, taste changes

2024, Clinician's Guide to Treating Tobacco Dependence, available from AARC.org, Irving, TX, USA

Medications

Choosing the Right Inhaler

All symptomatic COPD patients should be prescribed a maintenance inhaler, ideally including a **long-acting muscarinic antagonist (LAMA)** unless contraindicated or not tolerated.

When selecting an inhaler, consider:

- Patient education and ability to use the device correctly
- Cost, access, and availability
- Patient preference

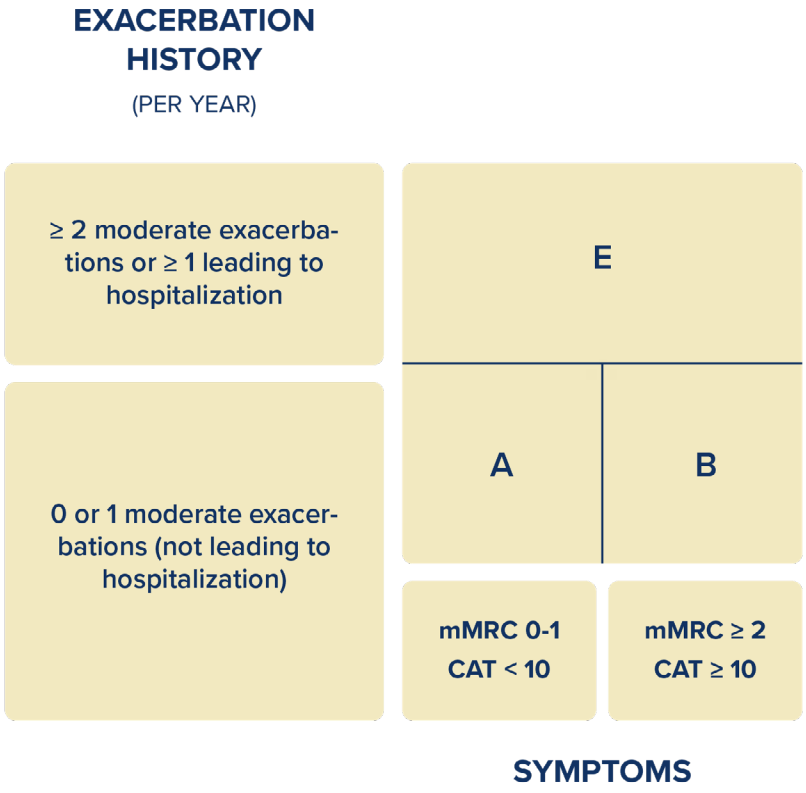
Short- and long-acting nebulized medications are also available. Nebulized options may be useful for patients with:

- High symptom burden
- Difficulty coordinating inhaler technique
- Inability to perform adequate breath-hold maneuvers

Treatment should be based upon GOLD's ABE Assessment tool (see below).

ABE Assessment Tool

Treatment should be guided by GOLD's ABE Assessment Tool, which incorporates symptom burden and exacerbation history.



(Figure used with permission from Global Initiative for Chronic Obstructive Lung Disease)

When to Consider An Inhaled Corticosteroid (ICS)

- Blood eosinophil count >300/µL
- ≥2 exacerbations per year (GOLD Group E)
- COPD with asthmatic features

Note: Discontinue ICS if the patient develops pneumonia.

Type of Maintenance Inhaler	Benefits	Side Effects
LAMA	Reduces cough, sputum, wheezing, and chest tightnes	LAMA: Dry mouth, headache, urinary retention, constipation
LAMA/LABA (GOLD GROUP B, E)	Relaxes airway muscles; long-lasting relief of wheezing, cough, dyspnea; combines LAMA benefits	LABA: Tachycardia, muscle cramps, tremors
LAMA/LABA/ICS (GOLD Group E with high eosinophil count, frequent exacerbations, or asthmatic features)	Prevents and reduces airway inflammation; not for acute relief; combines LAMA and LABA benefits	ICS: Oral thrush, hoarseness, dry throat, cough

Abbreviations: LAMA = Long-acting Muscarinic Antagonist; LABA = Long-acting Beta-Agonist; ICS = Inhaled Corticosteroid.D

Specialty or Advanced Therapies

When considering advanced therapies, a referral to Pulmonary Medicine should be considered:

Airway Clearance

Airway clearance therapies assist with mobilization of secretions. Most devices use positive expiratory pressure to mobilize secretions without airway collapse.

Examples: Acapella, Flutter Valve, vPep, Vest Therapy, EzPAP

Pharmacologic Options

- Chronic antibiotics (e.g., Azithromycin): can reduce exacerbation frequency.
- Phosphodiesterase-4 (PDE4) inhibitor (e.g., Roflumilast): reduces inflammation and flare-ups.
- Biologics (e.g., Dupixent, Nucala): target eosinophilic inflammation and pathways driving airway inflammation; indicated when eosinophil count ≥300/μL.

Non-Invasive Ventilation

Consider for patients with chronic hypercapnic respiratory failure.

- Baseline blood gas, nocturnal oximetry (on current oxygen settings), and pulmonary function testing required.
- Indicated if arterial blood gas shows $PaCO_2$ ≥52 mmHg.

Interventional Pulmonology/Surgical Consultation

When medical therapy is insufficient, surgical options may improve symptoms, exercise tolerance, and quality of life.

Options include:

- Endobronchial Valves: one-way valves placed in diseased lung regions to reduce hyperinflation and improve lung function.
- Lung Volume Reduction Surgery (LVRS): resection of diseased lung areas to improve breathing capacity and quality of life.
- Bulla Resection (Bullectomy): removal of bullae (air pockets) that compromise surrounding lung tissue.
- Lung Transplant: replacement of one or both diseased lungs with donor lungs.

Checklists

Patient Treatment Checklist

Confirm whether the following have been ordered, provided, or updated:

- ☑ **Pulmonary Function Testing (PFTs):**
  - Order spirometry if COPD is suspected but not confirmed.
  - Repeat if symptoms worsen and >5 years have passed since the last test.
- ☑ **Smoking Cessation Counseling** (if patient is a current smoker)
- ☑ **Referral to Pulmonary Rehabilitation**
- ☑ **Home Oxygen Evaluation** (if indicated)
- ☑ **Correct Medication Regimen**
  - Maintenance inhaler(s)
  - Device training
  - Spacer use (if appropriate)
- ☑ **Consider Referral to Specialists for Advanced Needs:**
  - Pulmonary Medicine (for recurrent exacerbations, persistent symptoms, or advanced therapies)
  - Palliative Care (for emotional/psychosocial support, symptom management, care planning, or end-of-life care)
  - Nutrition consultation (see COPD – A Guide for Supportive Therapies)
  - Other medical specialties if patient has complex comorbidities
- ☑ **COPD Action Plan: complete or update with the patient to support self-management and recognition of exacerbations.**

Follow-up Care Post-Exacerbation

After a COPD exacerbation, providers should:

- ☑ **Schedule an office visit according to practice protocols.**
- ☑ **Review and reconcile medications.**
- ☑ **Reinforce patient education and assess adherence.**
- ☑ **Identify and address barriers:**
  - **Transportation:** coordinate appointments on the same day or back-to-back.
  - **Education:** use varied teaching tools (handouts, demonstrations, videos, interpreter support).
  - **Financial:** discuss medication costs or simplify regimens if possible.
- ☑ **Review the Patient Treatment Checklist.**
- ☑ **Provide the patient with a copy of the Workbook for Vermont Patients' Families and Caregivers.**
- ☑ **Complete or update the COPD Action Plan with the patient to ensure understanding of warning signs and emergency steps.**

Patient Name	Birthdate	Year Plan

COPD Action Plan

Signs and Steps to Manage Your COPD and Breathe Easier - Together

How to use this plan: Patients and health care providers should complete the COPD Action Plan together. First identify your zone and then with your provider identify actions to take according to your zone. Discuss what to do if things change, any challenges or barriers in following this plan, and the steps to take if your COPD worsens.

Know your zone – **Take the right action!**	**Provider instructions for zone action**
Green Zone: **"I'm doing okay"**	**What to do** if you are in the green zone:
You feel good when: • Breathing is normal for you • Usual cough and phlegm/mucus • Usual energy for activities and exercise • Sleep well at night • Good appetite	• Take daily medicines, as prescribed: _____ _____ • Use oxygen, CPAP, or other tools as directed: _____ _____ • Stay active and eat well • Stick to your plan!
Yellow Zone: **"Something's Not Right"**	**What to do** if you are in the yellow zone:
Call your provider if you have: • More shortness of breath than usual • More coughing or thicker phlegm/ mucus • Less energy, poor sleep or appetite • Mild fever or just feel "off" • Using "rescue" inhaler more often	• Keep taking daily medications, as prescribed: _____ _____ • Start your "sick day" medications (ask provider if you are unsure): _____ _____ • Rest – take it easy until you feel better • Call your provider to report worsening symptoms; discuss need for an appointment, additional medication or action (take seriously)
Yellow Zone: **"Need Help Now"**	**ACT NOW:** If you are in the red zone, you may be having a **COPD EMERGENCY**
Call 911 or get help if: • Can't breathe, even when resting • Coughing or mucus is much worse • Can't walk or talk easily • Very tired or confused • Lips or nails turn grey or blue • Your hands, feet, or ankles are swollen • Chest pain • "Rescue" inhaler is not helping	• Take "emergency medications", if available: _____ _____ **CALL 911. Do NOT Wait. Get help immediately.** A Red Zone flare-up can be life-threatening. **ACT NOW!**

Provider Name:	I reviewed the COPD Action Plan with the patient. Provider's Signature:
Provider Address:	Date Reviewed with Patient:
Provider's Phone Number:	Notes:
FOR YOU (THE PATIENT) TO FILL OUT: Please check below, sign and date to allow family members or other caregivers to talk with your provider.	
I give permission to [name]: _____, [relationship]: _____, to communicate with my healthcare provider to help me manage my COPD.	
Patient Signature:	Date Signed:
List a person/phone # who can drive you to an emergency room or help you during a COPD flare: Name: Phone #: Name: Phone #:	Other Important Contact: Name: Email: Phone:
PROPER DEVICE USE TIP: Watch a demonstration video on using your inhaler.	**VACCINATION TIP:** Staying up-to-date on vaccines (RSV, flu, pneumococcal, COVID-19) adds protection for your COPD management.
COPD ACTION PLAN TIP: Place a copy on your fridge and give one to your caregivers.	**GETTING HELP EARLY:** Take action as soon as you enter the yellow-zone. Call your provider to report symptoms.
TRIGGERS TIP: Eliminate or avoid personal triggers to help manage symptoms. Common triggers are: pets in bedroom and on furniture, scented products, including perfumes, air fragrance sprays, wood smoke, gas fumes, extreme cold and humid conditions, tobacco smoke, secondhand smoke, and other inhaled products **Visit 802Quits.org or call 1-800-QUIT NOW for free help to quit smoking or vaping.**	**SELF-MANAGEMENT TIP:** Stabilize your COPD by knowing the following: • COPD Basics, signs, symptoms and progression. • Medication and device use • Triggers • Daily Management, including your treatment and COPD Action Plans and what to do in an emergency.

Learn more about COPD:

Visit the Vermont Department of Health's COPD Program:
www.healthvermont.gov/wellness/copd-chronic-obstructive-pulmonary-disease

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DEPARTMENT OF HEALTH

Resources

802Quits: 802quits.org

American Lung Association: Surgery for COPD

Clinician's Guide to Treating Tobacco Dependence (2024):
Available from AARC.org

CMS Guidance:
Billing and Coding: Pulmonary Rehabilitation Services (A52770)

Global Initiative for Chronic Obstructive Lung Disease (GOLD):
goldcopd.org

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Notes: