COPD: Care and Management in Community Settings (Adult)

Site Applicability

- Home Health
- Primary Care
- Residential Care
- Urgent and Primary Care Centers (UPCC)

Practice Level

Independent oxygen administration for clients:

- **MD/NP/RT:** Basic skill
- **RN/RPN**: Advanced skill –
  - **Additional education for the performance of a Nurse Independent Activity (NIA) is recommended**: see Learning Hub NIA Moodle.
- **LPN:** Advanced skill.
  - The LPN may independently administer oxygen without an order if oxygen saturation is less than 88% with a target saturation of 88-92%.

All other interventions: Basic skills for the following professions:

(Note: This document is relevant to all disciplines. Assessments and interventions undertaken will be within respective scopes of practice.)

- Registered Nurse (RN)
- Registered Psychiatric Nurse (RPN)
- Licensed Practical Nurse (LPN)
- Registered Dietitian (RD)
- Occupational Therapist (OT)
- Physiotherapist (PT)
- Registered Respiratory Therapist (RRT)
- Speech and Language Pathologist (S-LP)
- Social Worker (SW)
- Recreational Therapist
- Nurse Practitioner (NP)
- Spiritual Care (SP)
- Pharmacist

Policy Statement

For clients living with COPD an interdisciplinary approach that supports self-management is essential to improve quality of life and client outcomes.

Need to Know

- Care and management requires an interdisciplinary approach that supports clients' development of self-management skills.
- Self management supported by health care professionals can decrease exacerbations and hospitalization by 40% (Bourbeau et 2003). For self-management support tools, see Centre for Motivation Interviewing.
- Early diagnosis and interventions improve health outcomes for clients with COPD.
- Recommended that all symptomatic (cough / dyspnea) smokers and ex-smokers over the age of 40 should be screened for COPD with Spirometry (GOLD 2013).
- COPD clients who quit smoking demonstrate a slower rate of decline in their respiratory function (Godtfredsen et al 2008).
- Early intervention and treatment for acute exacerbations is necessary to prevent hospitalization, minimize decline in baseline lung function and maintain / enhance quality of life.
- Recommended that all COPD client have an individualized COPD exacerbation action plan also called a COPD flare up or lung attack plan (Appendix A).
- If oxygen is used as an intervention:

  - Oxygen should be applied to achieve a target saturation of 88–92%
  - Use appropriate devices and flow rates in order to achieve the target saturation range.
  - Whenever possible, nasal cannula should be used to achieve target saturations.
  - If a patient requires higher oxygen concentrations to achieve target saturations, a simple mask (flow set at 6-10 l/m) or a non-rebreather mask (flow set at 15 l/m) may be used.
- Simple masks are discouraged for use in the home setting. If a patient requires oxygen on discharge, or requires a change to their current home oxygen setting, the Home Oxygen Program must be consulted.

Background

COPD is a chronic lung disease that is characterized by progressive dyspnea, exacerbations and respiratory infections. It includes chronic bronchitis and emphysema and is primarily associated with smoking along with other risk factors listed below. Irritants cause an inflammatory response of the small airways, vasculature and surrounding lung tissues. The damage results in chronic, progressive expiratory flow limitation and lung hyperinflation.

COPD affects men and women equally (StatsCan 2009). However, women report more severe symptoms and poorer outcomes (Lung Association 2006). With an aging population COPD rates are predicted to rise and this will inevitably lead to an increased socioeconomic burden (GOLD 2013). In BC there are 73000 COPD patients, which represent 4.3% of population. However, in BC, the disease is under diagnosed and estimated at 8.2% of the population. COPD is the only leading cause of death whose mortality rate continues to increase (Canadian Thoracic Society-CTS 2008). In Canada, it was the fourth leading cause of death in 2004.

Signs and Symptoms often depend on severity of disease and may include:

- Chronic cough
- Chronic sputum production
- Progressive shortness of breath at activity and then at rest
- Wheeze
- Cyanosis
- Frequent respiratory infections
- Rounded or “barrel chest”
- Fatigue
- Malnutrition weight loss and cachexia

COPD is associated with multiple co-morbidities:

- Heart Failure
- Ischemic heart disease
- Cardiac Dysrhythmias (e.g. atrial fibrillation)
- Lung and other cancers
- Osteopenia and Osteoporosis
- Cataracts, Glaucoma
- Metabolic disorders
- Depression and anxiety
- Gastroesophageal Reflux Disease (GERD
- Aspiration pneumonias

Risk Factors:

- Smoking tobacco and other substances (e.g. marijuana)
- Passive smoking (second-hand smoke)
- Alpha 1 antitrypsin deficiency
- History of childhood respiratory infections
- History chronic bronchitis
- Family history
- Poorly controlled asthma
- Environmental pollution and occupational factors such as chemical agents / dusts / wood burning fuel (Gold 2013).

Triggers for COPD Exacerbation:

- Pulmonary infections influenza and pneumonia
- Aspiration pneumonia
- Smoking / second-hand smoke
- Pollution
- Stress and anxiety

Screening:

The Canadian Thoracic Society recommends screening for all smokers and ex-smokers over the age of 40 who exhibit the following: chronic cough, chronic sputum production, progressive dyspnea and frequent respiratory infections (CTS 2008). Screening involves baseline Spirometry (Appendix B). Clients can be referred to walk in spirometry clinics by their GP/ NP. Spirometry can also be performed in GP offices and with VCH programs e.g. Ravensong Primary Care and Downtown Community Health Centre (DCHC).

Diagnosis and Staging:

Definitive diagnosis is made with spirometry (Appendix B). This is accompanied by a comprehensive physical assessment, health history, psychosocial history, review of comorbid conditions, assessment of occupational and environmental factors; effect of symptoms on functional capacity to perform activities of daily living (ADLS) and Instructional activities of daily living (iADLs) e.g. managing finances and psychosocial well-being.

Spirometry and a comprehensive assessment enables clinicians to stage COPD. This is important when making decisions about treatment and management strategies. See Appendix C for Table demonstrating the link between COPD stage symptoms and spirometry.

Treatment & Management:

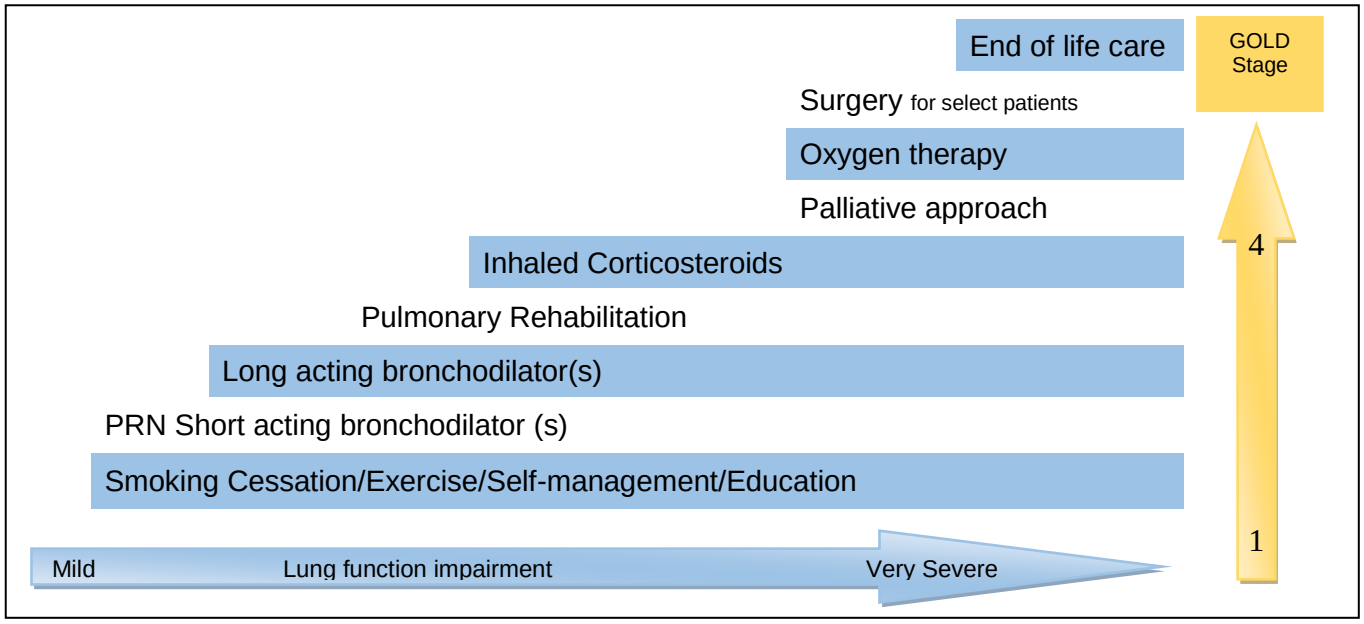
All clients with COPD benefit from an interdisciplinary approach to care that incorporates smoking cessation, pulmonary rehabilitation, adopting a healthy lifestyle and learning how to self-manage their symptoms and acute exacerbations. Where clients have mental health and addiction concerns collaboration with mental health and addictions teams can promote adoption of recommended interventions and self-management.

The therapeutic goals of management of COPD are to:

- Prevent disease progression (smoking cessation and early treatment of exacerbations)
- Alleviate breathlessness and other respiratory symptoms
- Reduce frequency, severity and duration of exacerbations
- Treat exacerbations and complications of the disease
- Improve health status
- Improve exercise tolerance and daily activity
- Maintain or improve quality of life

Management strategies include pharmacotherapy and non-pharmacotherapeutic approaches and have been shown to improve symptoms, activity levels and quality of life even in patients with severe COPD. The following table can help guide the management of the disease. For more in-depth pharmacotherapeutic options see Appendix D.

A Stepwise Approach to Management:



A Stepwise Approach to Management: incorporating self-management, pulmonary rehabilitation, pharmacological treatments and palliatiive interventions as COPD worsens: Adapted from Canadian Thoracic Society (2008) and Global Initiative for Chronic Obstructive Lung Disease (2013) recommendations

Pulmonary Rehabilitation:

The goal of pulmonary rehabilitation is to assist people in learning how to manage their symptoms, and to stay as active as they can while reducing their shortness of breath. The exercise programs are designed for all abilities. Pulmonary rehabilitation has been shown to help people increase strength and activity levels while reducing the shortness of breath that often gets in their way.

For those clients where attending a pulmonary rehabilitation program would be challenging, alternatives such as a client specific exercise program is beneficial and can be guided by respiratory / physiotherapists. (Cochrane Review 2009)

COPD Exacerbation:

Prevention and early treatment of exacerbations is key to reducing hospitalizations, morbidity and mortality and improving quality of life in COPD.

An exacerbation of COPD or lung attack is “an acute event characterized by a worsening of the patient’s respiratory symptoms that is beyond normal day-to-day variations and leads to change in medication” (p 40 GOLD 2013). Exacerbations can be precipitated by a number of factors e.g. bacterial /viral infection, environmental pollution. However in about one third of exacerbations the cause is not identified. Each client experience of exacerbation is different. Asking clients to describe symptoms / events that lead to an exacerbation can assist in the development of a personalized exacerbation plan for clients to initiate therapy as early as possible ie within 48 hours of symptoms that are affecting daily activities.

Signs and Symptoms of an Exacerbation:

- Worsening dyspnea beyond normal
- Increased cough with or without purulent sputum production
- Tachypnea
- Reduced exercise tolerance
- Wheeze, coarse crackles
- Use of accessory respiratory muscles
- Worsening or new hypoxia with central cyanosis (blue lips and tongue)
- Increasing peripheral edema
- Hemodynamic instability (tachycardia, hypotension)
- Deteriorating mental status

Prevention of Exacerbations:

These can be prevented by promoting self-management and encouraging lifestyle changes.

- Smoking Cessation
- Marijuana cessation
- Yearly Influenza vaccination
- Pneumococcal vaccination: recommended that this is given once then booster at 5 years Pneumococcal Vaccine – BCCDC guidance 2014
- Review of self management skills at regular intervals
  - Knowledge of therapy
  - Inhaler technique (including use of aero-chamber when using metered dose inhalers (MDI)
  - Review of COPD exacerbation plan (flare up / lung attack plan)
- Prevention and treatment of causes of exacerbations such as avoiding crowds during flu season, reducing risk of reflux / aspiration

Treatment of exacerbations:

More than 80% exacerbations can be managed as out-patients through early commencement of medications to treat the cause and manage symptoms. Teaching clients how to recognize the early symptoms of an exacerbation and how to implement an exacerbation action plan can significantly reduce the need for hospitalization.

A typical COPD Exacerbation action plan (Appendix A is an example) includes:

- Client specific signs and symptoms
- Instructions from the GP/ NP when to:
  - Increase doses of rescue inhalers
  - Commence short course oral corticosteroids
  - Commence a short course of antibiotics (for 5 to 10 days)
  - Non pharmacological self-management strategies e.g. Sputum clearance - active cycle breathing, increasing fluid intake and dyspnea management – purse lip breathing / energy conservation, balancing rest and activity
- When to report exacerbation to health care provider
- When to acquire replacement medications
- Healthy living suggestions

If an individual presents to health care providers in respiratory distress and/or has an SpO_2 <88%, consider increasing or applying oxygen to maintain SpO_2 88-92%.

All health care providers can improve client outcomes by encouraging clients to obtain an action plan from their GP / NP and providing education and reviewing clients understanding of their action plan.

When should clients with Exacerbations be admitted to Hospital?

Wherever possible, it is best to intervene early to prevent hospitalization. Increasing the frequency of symptom monitoring and assessing response to treatment allows health care provider to adjust treatment plans in a more timely way.

COPD can deteriorate and require hospitalization. The following are indications of when hospitalization needs to be considered:

- Increase in severity of symptoms e.g. increase in resting dyspnea, unable to complete sentences because of breathlessness
- Severe underlying COPD
- Worsening hypoxia
- Deterioration in mental status
- Other serious co-morbidities that may decompensate during a COPD exacerbation e.g. heart failure, dysrhythmias
- No or poor recovery following initiation of an exacerbation action plan

Decisions regarding hospitalization, particularly when the client is nearing the end of life, should also take into account their goals of care and the availability palliative support that can be provided in the home.

Transitioning to Palliative Approach

Discussions regarding goals of care and/or advance care planning (My Voice Document) should take place at the earliest opportunity once a relationship is established with the client. (Goodlin, 2009; Turris and Rauscher, 2005). The clients' understanding of their disease progression and prognosis should be established each time goals of care / advance care planning are discussed. Goals of care should be re-assessed and re-discussed with each change in client's condition e.g. following hospitalization for exacerbations.

As with any client with a chronic disease having a regular GP/ NP fosters the development of a good relationship. GPs / NPs are essential when transitioning to palliative care to ensure timely access to medical care, Palliative Benefits Program and medications used for palliation. It is important to note that cognitive impairment worsens with severity of COPD and earlier discussions about their goals of care and advance care plan may be indicated for clients with early cognitive impairment (Li et al, 2013).

Identifying when someone with COPD is in need of transitioning to a palliative approach is not straight forward. Even clients with poor FEV_1 less than 35% can remain stable for a long time. However, Curtis, (2008) suggests life expectancy is significantly impacted when clients with a poor FEV_1 exhibit any of the following signs and symptoms:

- Cachexia
- Client report of severe of breathlessness (even when objective data suggests severity is less)
- Poor functional performance status and increasing dependence on others

Other factors that can have a significant impact on life expectancy are:

- Frequent exacerbations requiring hospitalization
- Anaemia
- Hypoxia
- Need for home oxygen
- Continued smoking status
- Minimal or no home supports
- Severity of co-morbidities (e.g. Left heart failure)
- Poor quality of life

Celli et al (2004) have developed a validated tool called the BODE index (BODE Index) to help predict mortality. The index looks at FEV_1, 6 minute walk test, body mass index and a modified Medical

Research Council (mMRC) breathlessness scale (Appendix E) to calculate mortality. It has been shown to be a better predictor than FEV_1 alone (Celli et al, 2004). Using this tool along with clinical judgment can help identify which clients are likely to benefit from a palliative approach and should be discussed with their GP / NP. The Palliative Assessment Tool (iPall) is also a useful resource when determining life expectancy and transitioning to a palliative approach.

Following a palliative approach in COPD has demonstrated benefit in reducing symptom burden such as dyspnea. This involves both pharmacotherapy, such as opiates or anxiolytics and non-pharmacological approaches: energy conservation, pacing activities, breathing and relaxation techniques.

As clients transition to a palliative approach, existential and spiritual concerns often arise. In addition to this, breath in some spiritual traditions and religions is associated with 'spirit' which adds further concerns for some clients. An opportunity to explore beliefs, fears and concerns with a spiritual care practitioner as clients' transition to a palliative approach can enhance spiritual well-being and reduce anxiety and depression.

Follow up Recommendations

- Yearly follow-up with GP / NP if stable or twice a year if having exacerbations.
- Focus on health promotion, exacerbation prevention and developing self-management skills.
- Following hospitalization / exacerbation episodes, clients require close monitoring and early treatment as risk of re-exacerbation is high. GP/NP appointment should be within 2 to 5 days of discharge from acute care, in VCH primary care, if clients are homebound, GP/NP should make a home visit. For Home Health clients, nursing follow-up to assess for symptoms of exacerbation should be within 1 to 5 days of discharge. Case conference with GP/NP as needed.
- Further follow-up and interventions from interdisciplinary team members are based on client condition and need.

Assessment and Interventions

The following is a 'Quick Reference' guide to use in conjunction with locally agreed assessments (e.g. Clinical COPD Questionnaire (CCQ) CCQ online questionnaire and Initial Assessment Tool (IAT) in PARIS and client specific interventions.

All clients / family / caregivers need to be assessed for their readiness and ability to engage in self care. Part of the assessment should involve developing an understanding of the client's experience of how COPD impacts their daily lives, what successes they have had to mitigate the challenges they face so that we can build on these and work in partnership to develop a plan of care that will work for them.

Equipment & Supplies *(as applicable to various professions)*

- Pulse oximeter (as available)
- Stethoscope
- Action Plan for "Lung Attacks" (COPD Exacerbation plan) – obtain from GP/NP
- Client education materials and resources (to refer to and provide client/supports in managing their health)

ASSESSMENT (All disciplines within respective scopes of practice)	**INTERVENTIONS** (All disciplines within respective scopes of practice when clinically indicated)
Respiratory: • Respiratory rate, chest sounds, use of accessory muscles every visit / prn • Oximetry at rest as needed, with activity/after exertion • Consider yearly Spirometry	• Teach clients techniques to reduce SOB: o Pursed lip breathing, body positioning, coughing techniques, energy conservation, pacing activities, relaxation. (Breathing Control; Anxiety and Relaxation) • Refer to outpatient and/or community based respiratory programs/pulmonary rehabilitation/self

• Respiratory: Dyspnea change, at rest distance walked on flat ground/up a flight of stairs; ability to talk in sentences; effect on ADLs and IADLs. What relieves dyspnea. • Cough: change, characteristics of cough, Color/volume of sputum and ease of expectoration. • Last COPD exacerbation and frequency of exacerbations (flare up/lung attack) • Triggers: occupational/air pollutants/smoking • Consider using Clinical COPD Questionnaire (CCQ) for further assessment and to establish baseline CCQ online questionnaire • Assess need for respiratory distress plan in advanced COPD • If an individual presents to health care providers in respiratory distress and/or has an SpO2 <88%.	management resources (see Client Education and Resources) • Consider and review need for home oxygen for hypoxia and refer to Home Oxygen Program for assessment. • Consider benefits of home nebulized therapy – refer to RT for assessment and care planning. • Review secretion clearance (Secretion Clearance). • Teach clients how to recognize an exacerbation. • Teach client to recognize environmental factors that affect their COPD and how to prevent this. • Teach when to report to GP/NP or when to start COPD exacerbation plan • Consult palliative care for respiratory distress plan. • Consider increasing or applying oxygen, if available, to maintain SpO2 88-92
Cardiovascular: • Heart Rate, rhythm • Dizziness, palpitations, chest tightness or pressure • Skin colouring (pink, blue, purple) & capillary refill. • Edema: abdomen, legs, sacrum, or feet	• Teach client to assess (and report) their symptoms to their GP/NP. • Teach clients about monitoring & reporting new symptoms, palpitations, dizziness, chest pain/ pressure/tightness and peripheral edema. • Review medications list for medications that can cause tachycardia/palpitations e.g. salbutamol inhalers, aminophylline
Cognition: • Alertness & orientation to time, person, & place • Change in cognition/memory: new or long-standing • If change in cognition/memory, assess for acute causes respiratory/cardiac status/signs of infection. • Cognitive screen with increased severity of COPD such as Montreal Cognitive Assessment (MOCA) • Collateral information from caregiver/family/other health providers	• Refer to another discipline for further assessment • Provide task specific training to promote participation in ADL's and IADL's • Consider compensatory strategies such as Day Timer, calendar, lists, alarms, cues and reminders from others • Adapt the environment to client need by simplifying and reducing distractions, or providing cues and prompts • Educate to change perception and attitude of others; modify support as needed • Liaise with GP/NP/OT as needed.
Mobility & Activity: • Assess ambulation, restrictions/gait/gait speed/ transfer/falls risk/home environment. • Impact of dyspnea on performance of Activities of Daily Living/functioning, has this changed? • Change or decline in energy levels over what period e.g. discharge from acute care /last visit? • Motivation to undertake exercise • Assess mMRC	• Teach client & family the importance of the balance between rest & activity (review the 4 P's: Planning ahead, Prioritizing activities, delegating tasks and Pacing self through activities and body positioning). Energy Conservation • Educate client & family about leisure programs in the community & encourage and facilitate use of same if necessary. • Teach - Strategies and Action for Independent Living (SAIL) Home Activity Program (HAP)/develop client

	specific exercise program • Refer to Pulmonary Rehabilitation • Refer to exercise program (e.g. YMCA "Access for All") • Consider appropriate therapeutic surfaces for bed/wheelchair to decrease risk for skin breakdown. • Consider mobility aids / adaptations to support function.
Medication Management: • Medication reconciliation as needed • Assess inhaler technique, frequency, order being taken • Does client have an appropriate flare up plan? • When was last course of antibiotics and/or course of steroids? Is client on prophylactic antibiotics? • Assess therapeutic impact of medication changes using CCQ online questionnaire.	• Review exacerbation plan or collaborate with physician/NP to establish one and educate client. • Review clients inhaler technique as needed and every 6 months. • Provide clients with education and handouts as needed. • Implement medication management if necessary (e.g. IMMP or blister packing).
Immunization status: • Last influenza vaccination. • Last Pneumovax vaccination. • Last Pertussis vaccination. • If no recent vaccination, explore beliefs regarding immunization	• Encourage yearly influenza. • Pneumococcal once then booster at 5 year. • Consult with GP/NP to arrange vaccination as needed. • If client choosing not to vaccinate, problem solve with client to develop preventative strategies. • Provide information/handouts on vaccines and why they're recommended (GPAC guidelines, 2011).
Nutrition & Weight: • Obtain baseline/current weight. • Assess for: • Loss or gain in weight • Changes in appetite • Signs of aspiration: Choking while eating or drinking, recurrent aspiration pneumonias (MacKinstry 2010) • Dysphagia screening • Difficulty coordinating breathing and eating • GERD symptoms • Any changes in taste impacting weight • Oral examination for poor dentition (Zhou et al, 2004)/oral candidiasis • How client prepares, acquires food (function and financial)	• Consult with dietitian. • Consider nutritional supplements. • Weigh client and/or encourage them to monitor weight every 1 to 2 weeks as appropriate. • Discuss importance of maintaining a healthy weight – improves prognosis. • Review resources to assist with healthy meals: Meals on Wheels, Better Meals, Gold Card Catering, Group shopping or Shop By Phone programs, food bank if needed. • Educate client regarding managing breathlessness/ fatigue with eating e.g. high calorie, frequent smaller meals, and moist food. • Liaise with swallowing therapist (OT/SLP) for identified concerns
COPD Exacerbation Plan • Assess whether client has an exacerbation plan. • Assess their understanding, beliefs and adherence or barriers to following plan.	• If client has an exacerbation plan review with client as needed and every 6 months. Ensure client has rescue medications (short acting beta agonists (SABA), antibiotics and/or steroids as per action plan).

	• Collaborate with physician/NP regarding exacerbation plan. Ensure client, Health care team, and Primary Provider have a copy. • Teach client and caregiver/family to monitor respiratory symptoms, how to follow exacerbation plan, when and how often to report to their GP/NP *(see above section on follow-up)*
Other Factors that impact COPD: Assess for: • Stress • Depression, • Sleep deprivation • Anxiety • Addictions	• Ask clients about factors that impact their health and well-being, engage in problem solving/planning to manage these effects. Positive Coping with Health Conditions • Discuss effects of stress, mood, anxiety and emotions on COPD. • Review strategies to manage stress, emotions, anxiety, and depression. • Refer clients to programs/services/on-site clinician for anxiety, depression and healthy living. • Review and demonstrate/provide resources on breathing exercises • Encourage client to monitor fatigue/energy levels and activity (activity and sleep/fatigue diary). • Review principles of sleep hygiene. Recommend setting a routine, sleep in bed not in front of TV, avoid stimulants near bedtime, take diuretic meds early in day, and the importance of using their CPAP/BiPAP machines if indicated. • Assess need for further sleep aids such as foam wedges to elevate head of bed • Review energy conservation, relaxation and stress management - Anxiety and Relaxation
Health Education: • Assess readiness to participate in self-management	• Provide and review appropriate handouts with client and/or family. See Resources. • Collaborate with GP/NP regarding referral for pulmonary Rehab. See Resources
Smoking Status: • Assess smoking history current/former - Pack years = number of cigarettes smoked per day divided by 20 multiplied by number of years as a smoker • e.g. 40 cigs per day x 20 years = 40 pack years • 20 (1 pack) • Assess readiness to quit	• Enquire about smoking history and assess readiness to quit. • Educate client and family about the effect of smoking (tobacco & marijuana) on COPD and encourage smoking cessation, support efforts to stop • Refer to programs where appropriate. • Encourage discussion with GP/NP, 811, Quit Now, VCH Programs (see Smoking Cessation resources) • Refer to 811 for Nicotine Replacement Therapy or medications
Spiritual Health Assess for: • Resignation/Hopelessness	• Develop Empathic Presence/ Therapeutic Alliance/Mutual Mindfulness • Engage in dialogical thematic exploration of illness narrative and life review

• Angst/Existential Anxiety/Fear of Death • A sense of Meaningless Suffering • Malignant Anger/Resentment • Feelings of Isolation/Disconnection • Anticipatory Grief • Crisis of Identity • Unresolved life issues e.g. feelings of guilt or shame • Assistance re beliefs and Values review related to goals of care or advance care planning	• Spiritually Focused Psychotherapy • Mindfulness Meditation • Guided Imagery • Prayer • Therapeutically Focused Ritual Practices • Spiritually focused anchoring of coping/self soothing techniques • Values/Beliefs Clarification
Advance Care Planning: • Assess current ACP wishes. • Assess need for POA/health care representative	• Review goals of care • Introduce My Voice Document • Collaborate with physician/NP to determine goals of care and transition to palliative approach. • Refer to palliative care. • Refer to spiritual care.

For more in depth symptom/functional assessment refer to discipline specific tools.

Expected Patient/Family Outcomes

- Client/family/caregiver understanding of COPD and management (pulmonary rehab, smoking cessation, immunization, medication, rest/activity management, and symptom assessment/reporting).
- Client/family/caregiver and primary providers share a COPD exacerbation plan
- Client/family/caregiver ability to demonstrate appropriate use and maintenance of COPD medications
- Client/family/caregiver awareness of resources to support health and wellness

Client Education and Resources:

BC Lung Association: http://www.bc.lung.ca/

Clinics/Programs/Spirometry Services:

- COPD Spirometry and Specialist Clinics (Fraser Health and VCH)
- Spirometry Referral Form (Pacific Lung Health Centre)
- Home Oxygen Program
- Home Oxygen Program Application Form
- BC Transplant Society http://www.transplant.bc.ca/index.asp

Education Pamphlets – order through VCH Patient Health Education Materials Catalogue

- Living with Lung Conditions (FN.510.L58)
- Chronic Obstructive Patient Information (FN.510.C57)
- Breathing Control, Relaxation Positions & Mobility Exercises (FN.510.B74)
- Active Cycle of Breathing Technique for Sputum Clearance (FN.270.Ac85)
- Inhaled Medications and Devices (FN.200.G46)
- Energy Conservation (FA.111.En27)
- Stress Management (Anxiety and Relaxation) (CB.500.An95)

Health Link BC

- 811 (nurses, dietitians, and pharmacists)
- COPD Overview
- COPD: Keeping Your Diet Healthy

- Learn about COPD
- COPD Flare-Ups
- Pulmonary Rehabilitation

Nutrition: Diet Allowance for COPD – Financial support for supplements
Palliative Care: My Voice Document

Programs
- Vancouver Community: Home Hospice Program
- Coastal: Coastal Palliative Care Services

Pulmonary Rehabilitation and Exercise Programs:
- Vancouver Community: Breath Well, Live Well Community Pulmonary Rehabilitation Program
- Richmond Hospital: Richmond Community Respiratory Programs
- Lions Gate Hospital: Respiratory Rehabilitation Program (BREATH)
- Vancouver General Hospital: The Champion Lung Fitness Program
- St. Paul's Hospital: Pacific Lung Centre Pulmonary Rehabilitation

Other
- Physical activity line - telephone support for clients
- YMCA

Smoking Cessation:
- Western Canada Smoking Cessation Program and Resources – *includes list of Community resources across VCH and the Province*
- Quit now: http://www.quitnow.ca/
- Kick the Butt - Lung Association Smoking Cessation
- Quit Kit
- Smoking Cessation Program information
- Smoking Cessation Support - location information

Self Management and Healthy Living
- Living Well with COPD/McGill University Health Centre & Quebec Asthma and COPD Network:
- http://www.livingwellwithcopd.com/ (password: COPD)
- Patient Network Canada – COPD
- Positive Coping with Health Conditions
- The Healthy Living Program: http://vch-connect/programs/vc_healthy_living_prgrm/Pages/default.aspx
- The University of Victoria Self Management Program: http://www.selfmanagementbc.ca/

Documentation

Document in accordance with VCH documentation standards including:
- Changes in client condition, signs and symptoms, response to intervention, e.g. CCQ, client education and materials given.
- Vital signs, Oximetry, Spirometry, weight
- Whether client has an exacerbation plan and knows how to follow the plan.
- Recent hospitalizations
- Follow-up
- For NIAs see documentation section of NIA policy

Related Documents

- D-00-07-30066: Oximetry Management Guidelines for Community Settings & Residential Care
- BD-00-13-40021: COPD Exacerbation Care Protocol (Acute)
- VCH COPD Action Plan

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Revised by

(2017 – Practice Level update for RPN & LPN)
Practice Initiatives Lead, Nursing Professional Practice Vancouver Community
Clinical Practice Lead, Primary Care, Vancouver Community

(2015)
CPD Developer Lead(s):
Chronic Disease Nurse Clinician, Home Health, Vancouver Community
Clinical Practice Lead Nursing, Vancouver Community

Other members:
Respiratory Therapist, Raven Song Community Health, Vancouver Community
Occupational Therapist, Regional Clinical Resource Therapist, VCH
Regional Clinical Advisor, Clinical Education, Learning & Development, VCH
Case Manager Physician Partnership, Continuing Health Services, RH
Physiotherapist – COPD Outreach Team, Pacific Lung Health Research, SPH, PHC
Chronic Disease Nurse, Richmond Integrated Health Network, RH
Respiratory Nurse Clinician / BREATH Program, Lion's Gate Hospital VCH.
Chronic Disease Nurse, Sechelt, Coastal
Asthma and COPD Education Coordinator, Dept of Medicine – Respiratory, VGH Robyn Savage, Chronic Vancouver Community
Physiotherapy Practice Coordinator, Vancouver Community
Registered Dietitian, Ravensong Community Health, Vancouver Community
COPD Transition Care Team, VGH
Community Respiratory Therapist/COPD Educator, Vancouver Community
Chronic Disease Nurse, Sechelt, Coastal
Nurse Practitioner, Downtown Community Health, Vancouver Community

Endorsed by

VCH: *(Regional SharePoint 2nd Reading)*
Health Authority & Area Specific Interprofessional Advisory Council Chairs (HAIAC)
Health Authority Profession Specific Advisory Council Chairs (HAPSAC)
Operations Directors
Professional Practice Directors
UPCC (Endorsed November 12, 2020):
Director, Professional Practice, Nursing, Professional Practice, VCH
Manager, Vancouver UPCC, Vancouver Fairview UPCC, VCH
COS, Registered Nurse, Primary Care, VCH
Project Manager, Primary Health Care Network, VCH

Final Sign-off and Approved for Posting by

Vice President Professional Practice & Chief Clinical Information Officer, VCH

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Appendix A:

Links to examples of COPD Exacerbation Action Plans, also referred to as a 'flare-up' or 'lung attack' plan

Any of these plans can be used:

- Coastal Breathe Action Plan
  http://vch.eduhealth.ca/PDFs/fn/FN.515.R472.pdf

- Coastal Residential COPD Action Plan

- Providence Health COPD Action Plan:
  http://vch.eduhealth.ca/PHC_PDFs/FN/FN.510.C468.PHC.pdf

- Guidelines and Protocols Advisory Committee (BC guidelines) COPD Flare Up Action Plan
  https://www2.gov.bc.ca/assets/gov/health/practitioner-pro/bc-guidelines/copd_flare-up_action_plan.pdf

Appendix B: Spirometry – Diagnosing COPD

Spirometry

Spirometry is a test that can be performed in the home/clinic. It measures the volume and speed of air leaving the lungs and is one of the test used to determine lung function.

The measurement terms used are:

1. FEV_1 = Forced Expiratory volume in one second: after taking deep breath how much air can be blown out of the lungs in one second.
2. FVC = Forced Vital Capacity: the total amount of air that can be blown out of the lungs after taking a deep breath.

FEV_1 and FVC are expressed as a ratio FEV_1/FVC. The ratio is a measure of airflow obstruction.

When diagnosing lung conditions these values are compared to "normal" values based on age, gender, height and weight.

Diagnosing COPD involves performing spirometry before and after bronchodilation e.g. with salbutamol and Ipratropium Bromide. This helps to rule out reversible lung conditions such as asthma.

A post bronchodilator FEV_1/FVC ratio of less than 0.7 defines airflow obstruction that is not fully reversible and establishes a diagnosis of COPD (BC Guidelines, 2011).

Appendix C:

Table demonstrating relationship between COPD Stage, Symptoms and Spirometry

COPD GOLD Stage	**Symptoms** (Canadian Thoracic Society Classification by symptoms, 2008)	**Spirometry findings post-bronchodilator** (CTS 2008)
At Risk (not yet COPD)	Asymptomatic smoker or ex-smoker or chronic cough/sputum	Normal: $FEV_1 \geq 80\%$ predicted $FEV_1 / FVC \geq 0.7$
GOLD 1 Mild	Mild Shortness of breath from COPD with strenuous exercise or while hurrying on the level or walking up a slight hill.	Mild impairment: $FEV_1 \geq 80\%$ predicted $FEV_1 / FVC < 0.7$
GOLD 2 Moderate	Moderate Shortness of breath from COPD causing the patient to walk slower than most people of the same age on the level or stop after walking about 100 m on the level.	Moderate impairment: FEV_1 50% to < 80% predicted $FEV_1 / FVC < 0.7$
GOLD 3 Severe	Severe Shortness of breath from COPD resulting in the patient too breathless to leave the house or breathless after dressing or undressing or the presence of chronic respiratory failure or clinical signs of right heart failure.	Severe Impairment: FEV_1 30% to < 50% predicted $FEV_1 / FVC < 0.7$
GOLD 4 Very Severe		$FEV_1 < 30\%$ predicted $FEV_1 / FVC < 0.7$

Appendix D:

Common Medications used in COPD Treatment

(Adapted from GOLD guidelines 2013)

Pharmacare coverage: Pharmacological treatment of COPD BC guidelines.pdf

Low risk for exacerbation (≤1 per year GOLD stage 1 to 2 - Appendix C) mMRC 0 to 1 (less symptoms) Appendix E	Short acting anticholinergic (SAAC) e.g. atrovent **AND /OR** Short acting beta$_2$ agonist (SABA) e.g. Salbutamol Other options at this stage: Long acting anticholinergic (LAAC) e.g. tiotropium **OR** Long acting beta$_2$ agonist (LABA) e.g. salmeterol
Low risk for exacerbation (≤1 per year GOLD stage 1 to 2 mMRC ≤ 2 (more symptoms)	Long acting anticholinergic (LAAC) **OR** Long acting beta$_2$ agonist (LABA) Other options at this stage: continue with short acting therapy (SAAC +/- SABA) **OR** combination of both long acting anticholinergic **AND** long acting beta$_2$ agonist (LABA)
High risk for exacerbation (1 per year GOLD stage 3 to 4 mMRC 0 to1 less symptoms)	Inhaled corticosteroids (ICS) **AND** Long acting beta$_2$ agonist (LAAC) or long acting anticholinergic (LAAC) (ICS may be omitted and long acting therapies used along with phosphodiesterase-4 inhibitor (e.g. roflumilast)
High risk for exacerbation (1 per year, GOLD stage 3 to 4 mMRC ≤ 2 (more symptoms)	Inhaled corticosteroids and long acting beta$_2$ agonist (LABA) and/or long acting anticholinergic (LAAC) Other options at this stage: Inhaled corticosteroids (ICS) and Long acting beta$_2$ agonist (LABA) and long acting phosphodiesterase-4 inhibitor **OR** Long acting beta$_2$ agonist (LABA) and long acting anticholinergic (LAAC) **OR** long acting anticholinergic (LAAC) and long acting phosphodiesterase-4 inhibitor **OR** Acetylcysteine short acting anticholinergic (SAAC) *and/or* Short acting beta$_2$ agonist (SABA)

Theophylline may be used at any stage of treatment
Inhaled corticosteroids tend to be overprescribed in the treatment of COPD

Appendix E: Modified Medical Research Council (mMRC) Dyspnea Scale

Grade	Description of Breathlessness
0	I only get breathless with strenuous exercise.
1	I get short of breath when hurrying on level ground or walking up a slight hill.
2	On level ground, I walk slower than people of the same age because of breathlessness, or have to stop for breath when walking at my own pace.
3	I stop for breath after walking about 100 yards or after a few minutes on level ground.
4	I am too breathless to leave the house or I am breathless when dressing.

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Coastal Residential COPD ACTION PLAN

Resident Name, Facility : _____

_____has been diagnosed with COPD (Chronic Obstructive Pulmonary Disease).

COPD has 2 states:

1 Stable.
2 Having an exacerbation, or a COPD "Flare-Up"/ "Lung Attack" (your resident's may say to you).

How to tell if resident is having a COPD Flare-up: A COPD Flare up/exacerbation may occur after a resident gets a cold; gets run down; is exposed to air pollution or very hot or cold weather. There are 3 things that define a COPD flare up:

1 Increased shortness of breath from their usual level.
2 Increased amount of sputum from their normal level.
3 Sputum changes from its normal colour to yellow, green or rust colour.

If any 2 or all of the above symptoms persist for 48 hours or more do the following:

☐Administer inhalers as ordered or call doctor for orders: ie. 2-4 puffs as needed (up to 4-6 times per day) for shortness of breath.

☐Notify doctor immediately.

☐Administer ordered antibiotic for a COPD exacerbation/Flare-up

☐Administer ordered prednisone for a COPD exacerbation/Flare-up

☐Notify doctor if resident is worse or does not feeling better after 48 hours of treatment.

¨☐Other_____

Nurses: **If, within the first 24 hours of giving medications ordered symptoms are not relieved or symptoms worsens please contact physician immediately for further medication direction.**

If resident becomes extremely breathless, anxious, fearful, drowsy or is having chest pain, call 911.

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Coastal Residential COPD Action Plan

Antibiotics & Prednisone Record

Physicians: Please fill in prescribed COPD exacerbation medications. ***Nurses:*** **Please fill in date when the resident started and let the physician know that the medication has been started**. Please finish the COPD exacerbation/flare-up medications unless instructed by physician.

Resident Name and Facility:

Medication Prescribed	Start date / Finish date	Start date / Finish date	Start date / Finish date

Make sure to take prescribed medication until all finished. **Please Note:** Medication Orders for COPD exacerbation / flare-up require reordering by the family physician **every 6 months from initial Physician Order.**

Physician Signature: _____Date:_____

Management of Acute Exacerbations of COPD (AECOPD) Source: BC Medical Guidelines

http://www.bcguidelines.ca/gpac/pdf/copd.pdf

Acute exacerbations are characterized by sustained (48 hrs or more) worsening of shortness of breath and coughing, with or without sputum. Severe AECOPD complicated by acute respiratory failure is a medical emergency.

Therapies should include: · therapy with short-acting beta2 agonists and anticholinergic bronchodilators · oral corticosteroids (e.g. prednisone 25-50 mg/day) for less than two weeks in most moderate to severe COPD patients. A dose of 30 – 40 mg of prednisone equivalent per day has been used in practice.· antibiotic use is based on risk factors

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