QUALITY STANDARDS

Chronic Obstructive Pulmonary Disease

Care in the Community for Adults

2023 UPDATE

Ontario Health

Scope of This Quality Standard

This quality standard addresses care for people with chronic obstructive pulmonary disease (COPD), including the assessment of people who may have COPD. It provides guidance on the diagnosis, management, and treatment of COPD in community-based settings. The scope of this quality standard applies to primary care, specialist care, and in long-term care and other home and community care settings. This quality standard does not address care provided in an emergency department or hospital inpatient setting for the management of acute exacerbations of COPD.

The COPD quality standard can be used in conjunction with *Quality-Based Procedures: Clinical Handbook for COPD (Acute and Postacute)*,[1] a document that provides guidance on the care of people with COPD while they are in hospital and after being discharged. Ontario Health has also developed the *Palliative Care: Care for Adults With a Progressive, Life-Limiting Illness* quality standard,[2] which can be used together with the COPD quality standard throughout the care journey of people with COPD. It is also common for people with COPD to have other health conditions. Ontario Health has quality standards for some of these topics, such as dementia, major depression, heart failure, diabetes, asthma, transitions between hospital and home, and hypertension. All quality standards are available at ontariohealth.ca.

What Is a Quality Standard?

Quality standards outline what high-quality care looks like for conditions or processes where there are large variations in how care is delivered, or where there are gaps between the care provided in Ontario and the care patients should receive. They:

- Help patients, families, and caregivers know what to ask for in their care
- Help health care professionals know what care they should be offering, based on evidence and expert consensus
- Help health care organizations measure, assess, and improve their performance in caring for patients

Quality standards and their accompanying patient guides are developed by Ontario Health, in collaboration with health care professionals, patients, and caregivers across Ontario.

For more information, contact QualityStandards@OntarioHealth.ca.

Quality Statements to Improve Care: Summary

These quality statements describe what high-quality care looks like for people with chronic obstructive pulmonary disease (COPD).

Quality Statement 1: Diagnosis Confirmed With Spirometry

People clinically suspected of having COPD have spirometry testing to confirm diagnosis within 3 months of developing respiratory symptoms.

Quality Statement 2: Comprehensive Assessment

People with COPD have a comprehensive assessment to determine the degree of disability, risk of acute exacerbation, and presence of comorbidities near the time of diagnosis and on an annual basis. The severity of airflow limitation, as initially determined by spirometry testing to confirm diagnosis, is reassessed when people's health status changes.

Quality Statement 3: Goals of Care and Individualized Care Planning

People with COPD discuss their goals of care with their future substitute decision-maker, their primary care provider, and other members of their interprofessional care team. These discussions inform individualized care planning, which is reviewed and updated regularly.

Quality Statement 4: Education and Self-Management

People with COPD and their caregivers receive verbal and written information about COPD from their health care professional and participate in interventions to support self-management, including the development of a written self-management plan.

Quality Statement 5: Promoting Smoking Cessation

People with COPD are asked about their tobacco-smoking status at every opportunity. Those who continue to smoke are offered pharmacological and nonpharmacological smoking-cessation interventions.

Quality Statement 6: Pharmacological Management of Stable COPD

People with a confirmed diagnosis of COPD are offered individualized pharmacotherapy to improve symptoms and prevent acute exacerbations. Their medications are reviewed at least annually.

Quality Statement 7: Vaccinations

People with COPD are offered influenza, pneumococcal, and other vaccinations, as appropriate.

Quality Statement 8: Specialized Respiratory Care

People with a confirmed diagnosis of COPD are referred to specialized respiratory care when clinically indicated, after receiving a comprehensive assessment and being offered treatment in primary care. This consultation occurs in accordance with the urgency of their health status.

Quality Statement 9: Pulmonary Rehabilitation

People with moderate to severe, stable COPD are referred to a pulmonary rehabilitation program if they have activity or exercise limitations and breathlessness despite appropriate pharmacological management.

Quality Statement 10: Management of Acute Exacerbations of COPD

People with COPD have access to their primary care provider or a health care professional in their care team within 24 hours of the onset of an acute exacerbation.

Quality Statement 11: Follow-Up After Hospitalization for an Acute Exacerbation of COPD

People with COPD who have been hospitalized for an acute exacerbation have an in-person follow-up assessment within 7 days after discharge.

Quality Statement 12: Pulmonary Rehabilitation After Hospitalization for an Acute Exacerbation of COPD

People who have been admitted to hospital for an acute exacerbation of COPD are considered for pulmonary rehabilitation at the time of discharge. Those who are referred to a pulmonary rehabilitation program start the program within 1 month of hospital discharge.

Quality Statement 13: Palliative Care

People with COPD and their caregivers are offered palliative care support to meet their needs.

Quality Statement 14: Long-Term Oxygen Therapy

People with stable COPD who have clinical indications of hypoxemia receive an assessment for and, if needed, treatment with long-term oxygen therapy.

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2023 Summary of Updates

In 2022, we completed a review of the evidence to capture new or updated clinical practice guidelines and health technology assessments published since the original release of this quality standard in 2018. This update aligns the quality standard with the most recent clinical evidence, and with current practice in the Ontario landscape.

Below is a summary of changes to the overall quality standard:

- Updated the links, secondary references, and data sources where applicable
- Updated the formatting to align with current Ontario Health design and branding
- Revised the accompanying resources (e.g., patient guide, placemat, case for improvement slide deck, technical specifications) to reflect changes to the quality standard and align with current Ontario Health design and branding
- Updated the data in the case for improvement slide deck and data tables
- Modified the definition of chronic obstructive pulmonary disease (COPD) in *Why This Quality Standard is Needed* to align with the updated Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2023 guideline[3]

Below is a summary of changes to specific quality statements:

- Quality Statement 1: Updated the definition of *spirometry*, removing race as a factor for interpretation of reference values, to align with the American Thoracic Society (ATS) position statement on race, ethnicity, and interpretation of the pulmonary function test[4]
- Quality Statement 2: Updated the definition of *airflow limitation*, removing race as a factor for interpretation reference values, to align with the ATS position statement on race, ethnicity, and interpretation of the pulmonary function test[4]
- Quality Statement 3: Revised quality indicators to better measure improvement for this statement
- Quality Statement 5: Revised quality indicators to better measure improvement for this statement
- Quality Statement 6: Revised the definition of *individualized pharmacotherapy* and associated quality indicators to align with updated guideline evidence
- Quality Statement 7: Revised the quality statement on vaccinations (as well as its associated definitions, rationale, audience statements, and quality indicators) to align with the updated GOLD 2023 guideline[3]
- Quality Statement 8: Revised the definition of *clinically indicated* for clarity
- Quality Statement 9: Updated the rationale to align with the updated GOLD 2023 guideline[3] and updated the definition of *pulmonary rehabilitation* to align with the updated ATS 2023 guideline[5]

- Quality Statement 10: Revised quality indicators to better measure improvement for this statement
- Quality Statement 11: Modified the rationale, adding a mention of the *Transitions Between Hospital and Home* quality standard[6]
- Quality Statement 12: Updated the rationale to align with the GOLD 2023 guideline[3] and other recent evidence related to pulmonary rehabilitation after hospitalization for an acute exacerbation of COPD. Updated the definition of *pulmonary rehabilitation* to align with the updated ATS 2023 guideline.[5] Revised quality indicators to better measure improvement for this statement
- Quality Statement 14: Modified the definition of *treatment with long-term oxygen therapy* and the clinician audience statement to include information about oxygen use and safety considerations. Revised quality indicators to better measure improvement for this statement

Why This Quality Standard Is Needed

Chronic obstructive pulmonary disease (COPD) is a progressive lung condition characterized by irreversible or partially reversible airflow obstruction.[3,7] The main risk factors for COPD are current or past tobacco smoking, and exposure to toxic particles and gases originating from household and outdoor air pollution.[3,7] COPD is characterized by progressive shortness of breath, often associated with cough or sputum production, resulting in decreases in exercise tolerance, ability to carry out activities of daily living, and quality of life.[3,7,8] As the disease progresses, many people with COPD have more frequent or more severe acute exacerbations of COPD, also called "flare-ups" or "lung attacks."[3,7]

Worldwide, COPD is a leading cause of morbidity and mortality. It results in social and economic burdens that are substantial and increasing. Although smoking rates are declining in Ontario, COPD is still one of the most common chronic conditions. The overall estimated prevalence of physician-diagnosed COPD among adults aged 40 years and over in Ontario was 10.5% to 10.6% in 2021/22, compared to 11.1% to 11.8% in 2014/15 (COPD cohort, ICES, 2022/23). However, it is also estimated that in 2021/22, only 40% of people with COPD received spirometry testing to confirm their diagnosis, down from 45% in 2016/17. In 2021/22, the proportion of people diagnosed with COPD who received spirometry testing in Ontario varied, from 26.9% in the North West region to 42.5% among those in the West region (Physician-Billed Services, ICES, 2021/22).

People with COPD also frequently require health care services.[9] Before the COVID-19 pandemic, COPD was the second most common reason for hospitalization. The latest data from 2021/22 show that COPD is the tenth most common reason for hospitalization in Ontario (Discharge Abstract Database and Ontario Mental Health Reporting System, Canadian Institute for Health Information, 2021/22).[10] However, the rate of hospitalizations and emergency department visits attributable to COPD vary across Ontario Health regions. In 2021/22, there was a 2.2-fold difference between the highest rate of hospitalization (42.4 per 1,000 person-years in the North West region) and the lowest rate (19.1 per 1,000 person-years in the Central region). Also in 2021/22, the rate of emergency department visits

was 3 times higher in the North West region (78.4 per 1,000 person-years) than in the Toronto region (26.9 per 1,000 person-years).[9] Across Ontario, from 2008 to 2011, people with COPD accounted for 24% of hospitalizations, 24% of emergency department visits, 21% of ambulatory care visits (to physicians who billed the Ontario Health Insurance Plan [OHIP]), 30% of home care services, and 35% of long-term care facilities.[11] In 2011, the total economic burden of COPD in Ontario, comprising direct and indirect costs, was estimated to be $3.9 billion (direct health care costs alone were estimated to be $3.3 billion).[12]

Although COPD is a progressive illness, there are significant opportunities to improve the quality of life of people with the disease via the delivery of high-quality health care. Because most people with COPD are not diagnosed until the disease is well advanced, earlier identification and testing of symptomatic individuals at risk of developing COPD is an essential first step in managing this chronic condition.[13] The goals of COPD management include slowing the progression of airflow limitation; reducing the frequency and severity of acute exacerbations; treating acute exacerbations; relieving symptoms such as breathlessness and anxiety; improving exercise tolerance, the ability to carry out activities of daily living, and overall health status; managing comorbidities; and reducing mortality.[7]

Measurement to Support Improvement

The COPD Quality Standard Advisory Committee identified 7 overarching indicators to monitor the progress being made toward improving care for people with COPD in Ontario.

Indicators That Can Be Measured Using Provincial Data

- Percentage of people with COPD whose diagnosis is confirmed by spirometry
- Percentage of people hospitalized for COPD who had an in-person follow-up assessment with a physician within 7 days of discharge
- Percentage of people with COPD who have filled a prescription for long-acting bronchodilator therapy (measurable for people aged 65 years and older only)
- Percentage of people with COPD with 1 or more unplanned acute care visits for COPD in each year. Stratify by:
  - Unscheduled emergency department visits
  - Nonelective hospitalizations
- Percentage of people with COPD who smoke cigarettes daily

Indicators That Can Be Measured Using Only Local Data

- Percentage of people with COPD whose disease has an impact on their life. Stratify by:
  - Low impact
  - Medium impact
  - High impact
  - Very high impact
- Percentage of people with moderate to severe COPD who have access to a pulmonary rehabilitation program. Stratify by:
  - Community-based rehabilitation
  - Inpatient rehabilitation

Quality Statement 1: Diagnosis Confirmed With Spirometry

People clinically suspected of having COPD have spirometry testing to confirm diagnosis within 3 months of developing respiratory symptoms.

Sources: Canadian Thoracic Society, 2007[7] | Department of Veterans Affairs and Department of Defense, 2021[14]| Global Initiative for Chronic Obstructive Lung Disease, 2023[3] | Health Quality Ontario, 2015[1] | National Institute for Health and Care Excellence, 2022[8]

Definitions

Clinically suspected: People are clinically suspected of having COPD if they have at least 1 respiratory symptom and 1 risk factor for COPD as defined below.

Respiratory symptoms include the following:

- Persistent shortness of breath that worsens with activity and/or exercise
- Chronic cough
- Regular sputum production
- Recurrent respiratory infections
- Chronic wheezing
- Chest tightness
- Activity and/or exercise limitation owing to breathlessness

Current or past tobacco smoking is the most common risk factor for COPD. Additional risk factors include the following:

- Exposure to second-hand smoke
- Exposure to occupational lung irritants, such as dust, vapours, fumes, gases, and other chemicals
- Childhood factors, such as low birthweight, recurrent respiratory infections, and other lung-development issues
- Exposure to significant air pollution
- Family history of COPD
- Genetic predisposition (alpha-1 antitrypsin deficiency)
- History of asthma
- Use of biomass fuels for indoor heating or cooking without proper ventilation

Spirometry: Spirometry is a lung function test that measures airflow, including forced vital capacity (FVC), which is the volume of air forcibly exhaled from the point of maximal inspiration, and forced expiratory volume in 1 second (FEV_1), which is the volume of air exhaled during the first second of the FVC measurement. Reference values to interpret the test are based on factors such as age, height, and sex. The American Thoracic Society (ATS) has developed a consensus statement, endorsed by the European Respiratory Society (ERS), that highlights why race and ethnicity should no longer be considered factors in interpreting the results of spirometry.[4] In addition, the Canadian Thoracic Society (CTS), the ATS, and other respiratory care societies have collaboratively conducted a comprehensive evidence review and developed a statement with recommendations to address research questions on the effect of race and ethnicity on pulmonary function testing interpretation.[15]

Traditionally, race and ethnicity have been factored into the determination of reference values for interpreting spirometry. However, lung function has recently been associated with factors beyond the complex combination of social, cultural, and genetic factors ascribed to race and ethnicity – such as socioeconomic status and education.[16] A race- and ethnicity-neutral approach to interpreting spirometry, using average reference equations (e.g., the Global Lung Function Initiative [GLI] average equation) promotes health equity and ensure that patients from racialized groups are not negatively affected.[4,17]

Spirometry results are presented as a percentage of the predicted value or as an absolute with upper and lower limits of normal. To diagnose COPD, testing should be administered and results interpreted by trained health care professionals, using spirometers that regularly undergo quality control and calibration to meet ATS and ERS specifications.[18,19]

Spirometry should be performed before and after the administration of an inhaled bronchodilator.[20] A post-bronchodilator FEV_1/FVC ratio of less than 0.7, or less than the lower limit of normal, confirms a diagnosis of COPD.[1,3] It is important to consider the spirometric overlap that exists between COPD and asthma, including the finding that many people with a confirmed diagnosis of COPD meet the FEV_1 reversibility criteria required for an asthma diagnosis and that the post-bronchodilator FEV_1/FVC ratio can also be reduced in asthma.

Rationale

It is estimated that of all people with COPD worldwide, 60% to 80% have not been diagnosed.[21] Both over- and underdiagnosis are possible with this condition.[1,21] Overdiagnosis can happen when the diagnosis is based only on a person's medical history and physical examination and not verified by spirometry testing. In this situation, a person may not actually have COPD. Overdiagnosis may lead to patient anxiety, the overuse of medications, and medication-related adverse effects without potential for benefit.[1,21,22] Underdiagnosis can occur when symptoms and risk factors are ignored or unrecognized by health care professionals and/or people with COPD, and when spirometry testing is not performed.[1,21,22] Spirometry is the only way to accurately measure the airflow obstruction of the lungs that is characteristic of COPD; therefore, it should be performed to confirm a diagnosis of COPD.[23] In Ontario, it is estimated that only 40% of people with COPD have received spirometry testing to confirm their diagnosis of COPD (Physician-Billed Services, ICES, 2021/22).

When a person who is clinically suspected of having COPD is unable to undergo spirometry testing, the use of a simple questionnaire can be considered, along with a comprehensive assessment (see quality statement 2), to guide the development of an individualized care plan (see quality statement 3) and pharmacological management (see quality statement 6). Every attempt should be made to ensure that the COPD diagnosis can be confirmed with spirometry, especially if changes in the person's condition suggest that they may be able to undergo spirometry testing.

What This Quality Statement Means

For People With COPD

If you have respiratory symptoms that do not go away, your health care professional should talk with you about having a breathing test called spirometry (also called a lung function test or a pulmonary function test). This test is done to confirm whether you have COPD. Spirometry determines if there is an airflow blockage in the lungs and, if there is a blockage, how severe it is.

For Clinicians

Administer or order spirometry testing for people with at least 1 respiratory symptom and 1 risk factor for COPD to definitively confirm a diagnosis of COPD. Testing should be performed before and after the administration of an inhaled bronchodilator and should occur within 3 months of a person developing respiratory symptoms.

For Organizations and Health Services Planners

Ensure that health care professionals in primary care and community-based settings have access to spirometers that regularly undergo quality control and calibration to meet ATS and ERS specifications. Ensure that health care professionals are trained in administering and interpreting the results of spirometry testing.

Quality Indicators: How to Measure Improvement for This Statement

- Percentage of people clinically suspected of having COPD who have undergone spirometry testing to confirm diagnosis within 3 months of developing respiratory symptoms
- Local availability of spirometry testing

Measurement details for these indicators, as well as overarching indicators to measure improvement for the goals of the entire quality standard, are presented in Appendix 2.

Quality Statement 2: Comprehensive Assessment

People with COPD have a comprehensive assessment to determine the degree of disability, risk of acute exacerbation, and presence of comorbidities near the time of diagnosis and on an annual basis. The severity of airflow limitation, as initially determined by spirometry testing to confirm diagnosis, is reassessed when people's health status changes.

Sources: Canadian Thoracic Society, 2007[7] | Canadian Thoracic Society, 2023[24] | Department of Veterans Affairs and Department of Defense, 2021[14] | Global Initiative for Chronic Obstructive Lung Disease, 2023[3] | Health Quality Ontario, 2015[1] | National Institute for Health and Care Excellence, 2022[8]

Definitions

Comprehensive assessment: A comprehensive assessment includes a medical history, physical exam, medication reconciliation, nutrition assessment, and the evaluation and documentation of the severity of airflow limitation, degree of disability, risk of acute exacerbation, and presence of comorbidities.

Degree of disability: The degree of COPD-related disability depends on symptom severity and can be measured using a number of instruments, including, but not limited to, the following:

- Clinical Frailty Scale (CFS)
- COPD Assessment Test (CAT)
- COPD Control Questionnaire (CCQ)
- Medical Research Council (MRC) Dyspnea Scale
- Tests of exercise capacity (e.g., 6-minute walking test, shuttle walk test, gait speed)

Risk of acute exacerbation: The risk of acute exacerbation can be assessed by obtaining a history of past acute exacerbations of COPD, including their timing, frequency, and severity, and any associated hospitalizations. Severe and worsening airflow obstruction (based on spirometry results) and the presence of chronic bronchitis are associated with a higher risk of acute exacerbation of COPD.

Presence of comorbidities: The following conditions are common in people with COPD and should be considered in assessment and care planning:

- Asthma
- Cardiovascular disease (e.g., arrhythmia, heart failure, hypertension, ischemic heart disease, peripheral vascular disease, stroke)

- Cognitive impairment (e.g., dementia)
- Gastroesophageal reflux
- Lung cancer
- Metabolic disease (e.g., diabetes, metabolic syndrome, obesity)
- Mental illness (e.g., anxiety, depression)
- Musculoskeletal disorders (e.g., osteoarthritis)
- Osteoporosis
- Pulmonary embolism
- Sleep apnea
- Substance use disorders (e.g., tobacco)

Airflow limitation: The severity of airflow limitation is measured with spirometry. The percentage predicted FEV_1, relative to reference values based on age, height, and sex[4] is used to classify the severity of airflow limitation into one of the following categories:

- Mild: $FEV_1 \geq 80\%$
- Moderate: $50\% \leq FEV_1 < 80\%$
- Severe: $30\% \leq FEV_1 < 50\%$
- Very severe: $FEV_1 < 30\%$

When interpreting and reporting spirometry results, it is best to adopt an approach that is race and ethnicity neutral, such as average reference equations (e.g., the Global Lung Function Initiative [GLI] average equation). Race- and ethnicity-based equations and adjustments assume differences in lung function between populations and racial or ethnic groups without adequately considering the influence of social determinants on lung health.[4,17] Implementing a race- and ethnicity-neutral approach also requires health care professionals to acknowledge the biological variability in lung function measurements, as well as the uncertainty of fixed cut-offs for decision-making. The continued use of reference questions derived from only White European populations, along with race- and ethnicity-based equations, contributes to biased medical care. It perpetuates health disparities and structural racism, and it negatively affects patients from racialized groups by delaying or missing diagnoses on the severity of airflow limitation or hindering access to treatment (e.g., pharmacological management, referral to specialized respiratory care, or access to pulmonary rehabilitation).[4,25]

Rationale

A comprehensive assessment can assist in ensuring accurate diagnosis and appropriate management, ruling out other causes of symptoms, and determining prognosis.[3] Although the presence of airflow limitation confirmed by spirometry is essential to confirming a diagnosis of COPD, it is insufficient on its own to provide an accurate assessment of a person's symptoms, their health-related quality of life, or their health care needs.[3] In addition to the severity of airflow limitation, the essential components of a comprehensive assessment for a person with COPD help determine the following[3]:

- The degree of disability based on the impact of COPD symptoms on the person's life
- The risk of future acute exacerbations of COPD
- Other health conditions the person may have

This information is used to inform individualized care planning (see quality statement 3) and pharmacological management (see quality statement 6).[8] It should be collected and documented as soon as possible following diagnosis and then at least annually or when changes in the person's health status warrant reassessment. Spirometry testing does not need to be performed every year; however, the severity of airflow limitation should be reassessed if there are any significant changes in the person's health status.

In some cases, such as when the severity of symptoms seems disproportionate to the severity of airflow limitation or when comorbidities are suspected, additional assessments and/or referral to specialized respiratory care (see quality statement 8) should be considered. Examples of additional assessments include the following:

- Alpha-1 antitrypsin deficiency testing
- Anxiety assessment (e.g., via the Generalized Anxiety Disorder 7 [GAD-7])
- Arterial blood gases or pulse oximetry
- Blood testing (e.g., complete blood count, blood gases, renal function, electrolytes)
- Body mass index calculation
- Bone mineral density testing
- Chest x-ray
- Computed tomography (CT) scan
- Depression assessment (e.g., via the 9-item Patient Health Questionnaire [PHQ-9])
- Echocardiography
- Electrocardiography
- Optometric or ophthalmologic exam to test for glaucoma and cataracts
- Sputum cytology

What This Quality Statement Means

For People With COPD

If you have been diagnosed with COPD, your health care professional should examine you thoroughly. They should ask you about your physical health, your mental health, your medical history, what medications you are taking, how you spend your time, and how you are feeling. You may also need tests at a hospital, lab, or clinic, like blood tests or breathing tests.

For Clinicians

Perform a comprehensive assessment with people who have been diagnosed with COPD near the time of diagnosis and at least once a year thereafter. Recently completed investigations and testing,

such as spirometry, should not be repeated unless clinically indicated. All results should be documented and used to inform care.

For Organizations and Health Services Planners

Ensure that systems, processes, and resources are in place in primary care and community-based settings for health care professionals to carry out comprehensive assessments of people with COPD. This includes access to spirometry and standardized assessment tools.

Quality Indicators: How to Measure Improvement for This Statement

- Percentage of people with COPD whose degree of COPD-related disability has been evaluated within the past 12 months
- Percentage of people with COPD whose risk of acute exacerbation of COPD has been reviewed within the past 12 months
- Percentage of people with COPD who have had an evaluation of comorbidities within the past 12 months

Measurement details for these indicators, as well as overarching indicators to measure improvement for the goals of the entire quality standard, are presented in Appendix 2.

Quality Statement 3: Goals of Care and Individualized Care Planning

People with COPD discuss their goals of care with their future substitute decision-maker, their primary care provider, and other members of their interprofessional care team. These discussions inform individualized care planning, which is reviewed and updated regularly.

Sources: Canadian Thoracic Society, 2007[7] | Department of Veterans Affairs and Department of Defense, 2021[14] | Health Quality Ontario, 2015[1] | National Institute for Health and Care Excellence, 2022[8] | Ontario Health Technology Advisory Committee, 2012[26] | Ontario Health Technology Advisory Committee, 2012[27]

Definitions

Goals of care: A person's goals of care are their overall priorities and health expectations for care; these are based on their personal values, wishes, beliefs, and perception of quality of life, and what they characterize as meaningful and important.[28] Examples of goals of care include prolonging life, relieving suffering, optimizing quality of life, maintaining control, achieving a good death, and getting support for caregivers, family, and loved ones.[29] Goals of care are not the same as health care decisions or consent for treatment. Typically, discussions of goals of care should precede health care decision-making and giving consent for treatment.

As outlined in the Ontario *Health Care Consent Act*, "health care consent" refers to an informed decision about treatment made by a mentally capable person or their substitute decision-maker with the support of a health care professional.[30] A health care professional proposing treatment must obtain informed consent from the capable person, or from their substitute decision-maker if they do not have the mental capacity. To obtain consent, this discussion must address the person's present condition (i.e., the context); the available treatment options; the risks, benefits, and side effects of those treatment options; alternatives to treatment; and the likely consequences of not having the treatment.[30]

Substitute decision-maker: A substitute decision-maker is a person who makes care and treatment decisions on another person's behalf if or when that person becomes mentally incapable of making decisions for themselves.[28] The substitute decision-maker makes decisions based on their understanding of the person's wishes or, if these are unknown or not applicable, makes choices that are consistent with the person's known values and beliefs and in their best interests. In advance care planning, a mentally capable person identifies their substitute decision-maker by confirming the automatic substitute decision-maker from the hierarchy list in the *Health Care Consent Act* or by choosing someone else using a document called "Power of Attorney for Personal Care."[30] A Power of Attorney for Personal Care is a legal document in which one person gives another person the authority to make personal care decisions on their behalf if they become incapable.[28] A Power of

Attorney for Personal Care is for personal care decisions (e.g., health care, nutrition, safety); financial and property decisions are made through a "Continuing Power of Attorney for Property."

Interprofessional care team: An interprofessional care team includes a primary care provider, multiple health care professionals with different training and skills, the person with COPD, and their caregivers. Interprofessional care occurs when multiple health care professionals with different areas of expertise provide comprehensive health services by working with patients, their caregivers, and communities to deliver the highest quality of care across settings.[31]

In addition to primary care, interprofessional care for people with COPD may include, but is not limited to, the following:

- Respiratory therapy and respiratory education
- Respirology or other specialist care
- Care coordination or case management
- Caregiver support
- Home care
- Kinesiology
- Nutrition support
- Occupational therapy
- Palliative care
- Pharmacy
- Physiotherapy
- Rehabilitation and/or clinical psychology
- Social work, psychology, psychiatry, or other psychosocial support
- Spiritual or religious support

Individualized care planning: Individualized care planning is the process of establishing a care plan and a written document describing a person's health needs and goals of care, and the care that will be provided to meet these needs and goals, including appropriate referrals to specialized care or other interprofessional care. A copy of the care plan is provided to the person with COPD and their caregivers. A care plan is not the same as a decision or consent for treatments, nor is it the same as instructions to guide self-management, also known as a self-management plan or an action plan. Individualized care planning should be reviewed and updated at least 1 to 2 times per year, or more frequently if needed.

Rationale

People with COPD should be engaged in discussions about their goals of care and should actively participate in planning their care as much as they would like. Future substitute decision-makers and caregivers should also be involved in such discussions and care planning as appropriate. These discussions and the comprehensive assessment (see quality statement 2) inform individualized care

planning. The purpose of individualized care planning for people with COPD is to optimize disease management and discuss changes in care that might be needed as a person's disease progresses.[8]

For more information on goals of care and advance care planning, including the role of the substitute decision-maker, please see the *Palliative Care: Care for Adults With a Progressive, Life-Limiting Illness* quality standard.[2]

The health care needs of people with COPD change over time according to the progression and severity of their disease. As such, many different skills may be required to provide high-quality care for people with COPD.[1,26] Depending on a person's needs and the stage of their disease, this care may be provided by a single health care professional with a variety of skills – such as a primary care provider – or by multiple health care professionals with different training and skills. The person with COPD, their caregivers, and their health care professionals make up an interprofessional care team.

What This Quality Statement Means

For People With COPD

Your health care professionals want to get to know you well. The more they know about you and your goals, the better they can help create a care plan and provide support that meets your physical, psychological, social, and spiritual needs.

You are at the centre of your care, and you should have a say in planning your care. If you want, your family members, other chosen caregivers, or a substitute decision-maker can also be involved.

It is important to make sure you know who your substitute decision-maker will be if you become incapable of making health decisions for yourself. By law, Ontario's *Health Care Consent Act* automatically assigns a substitute decision-maker for you, but you can change who your substitute decision-maker is by preparing a legal document called a "Power of Attorney for Personal Care." Once you have confirmed who your substitute decision-maker is, talk with them regularly about your wishes, values, and beliefs. This will help them make the right decisions for you, if needed. If your wishes change, keep them informed.

You will get care for COPD from your primary care provider (family doctor or nurse practitioner). You may also see other health care professionals with different skills in caring for people with COPD, like a respirologist (a doctor who specializes in lung health), a nurse, an occupational therapist, a respiratory therapist, a pharmacist, a physiotherapist, or a social worker. Together with you and your chosen caregivers, these health care professionals make up your care team.

You should see your health care professional once or twice a year, or more often if your COPD symptoms are more severe. These regular appointments let your health care professional see how you are doing and make changes to your care if needed. These appointments also give you and your caregivers the chance to ask questions about COPD or the care you are getting.

For Clinicians

Engage people with COPD in discussions about their goals of care and involve them in care planning. If caregivers are involved in the person's care, they should also be included in these discussions (with the person's permission). These discussions can also be a good opportunity to discuss advance care planning and the role of the substitute decision-maker. Ensure that people with COPD receive interprofessional care from health care professionals who can meet their physical and mental health needs.

For Organizations and Health Services Planners

Ensure that systems, processes, and resources are in place for people with COPD to access necessary care and receive interprofessional care based on their needs. Ensure that primary care providers have the knowledge and resources to be able to refer people to interprofessional care when needed.

Quality Indicators: How to Measure Improvement for This Statement

- Percentage of people with COPD who discussed their goals of care with their interprofessional care team or their primary care provider at least once per year
- Percentage of people with COPD with at least 1 scheduled health care visit for COPD in the past 12 months

Measurement details for these indicators, as well as overarching indicators to measure improvement for the goals of the entire quality standard, are presented in Appendix 2.

Quality Statement 4: Education and Self-Management

People with COPD and their caregivers receive verbal and written information about COPD from their health care professional and participate in interventions to support self-management, including the development of a written self-management plan.

Sources: American College of Chest Physicians and Canadian Thoracic Society, 2015[32] | Canadian Thoracic Society, 2007[7] | Department of Veterans Affairs and Department of Defense, 2021[14] | Global Initiative for Chronic Obstructive Lung Disease, 2023[3] | Health Quality Ontario, 2015[1] | National Institute for Health and Care Excellence, 2022[8] | Ontario Health Technology Advisory Committee, 2012[26] | Ontario Health Technology Advisory Committee, 2012[27]

Definitions

Interventions to support self-management: According to a consensus definition, a self-management intervention for COPD is a structured but individualized plan to motivate, engage, and support people with COPD in positively adapting their health behaviours and developing skills to better manage their disease.[33] The goals of self-management are to optimize physical health; reduce symptoms and functional impairments; increase quality of life, including emotional and social well-being; and establish effective relationships with health care professionals, family, friends, and community.

The process requires iterative interactions between people with COPD and health care professionals trained in behaviour change techniques and health-literacy-sensitive approaches to providing self-management interventions. The focus is on identifying needs and goals, formulating a plan to reach goals, and re-evaluating the plan as necessary.

Written self-management plan: Also referred to as a COPD action plan, a written self-management plan is a document developed by people with COPD together with their health care professionals and their caregivers. It outlines a person's treatments, as well as the strategies they should use to manage their COPD every day and in case of an acute exacerbation. It may include prescriptions or standing orders for medications. This plan should be used in conjunction with interventions to support self-management provided by a health care professional.

Rationale

Interventions to support self-management aim to inform, educate, and motivate people with COPD to adopt sustained behaviour change and confidently develop skills to better manage their symptoms and their disease.[33] As part of interventions to support self-management, health care professionals should give people with COPD and their caregivers verbal and written information about COPD and how to manage the condition.[34] They should also work together with people with COPD and their

caregivers to develop and update an individualized, written self-management plan or COPD action plan. A copy of the self-management plan should be given to the person with COPD. The use of a written self-management plan on its own, without education and ongoing support from a trained health care professional, cannot be recommended at this time owing to inconsistency in the evidence for safety and effectiveness.[1]

A consensus definition of self-management intervention for COPD has been proposed; however, there is limited evidence about the information that should be provided or the timing and frequency of interventions.[33] The following topics are considered essential for people with COPD and their caregivers:

- Information about the nature of COPD and disease progression
- Managing acute exacerbations using an individualized, written self-management plan that includes information about when to seek help from a health care professional, what medications to take, and how to cope effectively with setbacks and relapses (see quality statement 10)
- The importance of smoking cessation, and information about available smoking-cessation interventions (see quality statement 5)
- Medications used to manage COPD, proper inhaler device technique, and the importance of adhering to maintenance therapy (see quality statement 6)
- The importance of avoiding lung irritants, including second-hand smoke, chemicals, outdoor air pollution, and indoor air pollution (e.g., from burning wood and other biomass fuels)
- Breathlessness symptom management, including breathing and chest-clearance techniques
- The importance of managing stress and anxiety
- Developing and maintaining healthy behaviours, such as physical activity and exercise, healthy eating, adequate sleep, vaccinations, and hand hygiene
- Available social and community supports (including formal support groups), and the importance of being socially connected
- Information about available palliative care support to improve quality of life

What This Quality Statement Means

For People With COPD

Your health care professional should explain COPD to you, including how the disease will progress, what can be done to help you, and what you can do to take care of yourself.

You can also learn more about COPD from other people who are living with COPD. This is sometimes called “peer support.” Peer support can happen in a formal group setting, or it can be informal, like when someone you know talks with you about their experience.

You, your caregivers, and your health care professional should work together to help you stay as healthy as possible and to know how to deal with flare-ups. One part of your care where you play an

important role is self-management. What you can do to take care of yourself will be described in a "self-management plan" or a "COPD action plan." This plan describes your medications and how to take them, things you can do each day to stay healthy, and what to do if you experience a flare-up of your symptoms.

A big part of living well with COPD is taking care of yourself. Here are some things you can do:

- If you smoke, stop smoking
- Take your medications as prescribed by your health care professional
- Make sure you know how to use your inhaler and other medications properly
- Get vaccinations recommended by your health care professional
- Stay active and exercise
- Eat healthy foods
- Get enough sleep
- Learn ways to manage stress
- Learn to recognize the signs of a flare-up and what to do if you have one
- If you are on oxygen therapy, use oxygen as prescribed by your health care professional
- Stay connected with your family, friends, and community
- Wash your hands frequently to help prevent catching a cold or the flu

For Clinicians

Provide interventions to support self-management to people with COPD and their caregivers. Work with people with COPD and their caregivers to create a written self-management plan and ensure that it is accompanied by education and structured support to prevent or reduce the risk of a serious acute exacerbation of COPD. Give people with COPD information about and referrals to local respiratory education and exercise programs.

For Organizations and Health Services Planners

Ensure that people with COPD have access to health care professionals trained in providing interventions to support self-management of COPD, including, but not limited to, respiratory therapists and other health care professionals who are certified respiratory educators.

Quality Indicators: How to Measure Improvement for This Statement

- Percentage of people with COPD who participate in 1 or more interventions with their health care professional to support self-management
- Percentage of people with COPD who have a written self-management plan

- Percentage of people with COPD who report feeling confident in the self-management of their symptoms

Measurement details for these indicators, as well as overarching indicators to measure improvement for the goals of the entire quality standard, are presented in Appendix 2.

Quality Statement 5: Promoting Smoking Cessation

People with COPD are asked about their tobacco-smoking status at every opportunity. Those who continue to smoke are offered pharmacological and nonpharmacological smoking-cessation interventions.

Sources: American College of Chest Physicians and Canadian Thoracic Society, 2015[32] | Canadian Thoracic Society, 2007[7] | Department of Veterans Affairs and Department of Defense, 2021[14] | Global Initiative for Chronic Obstructive Lung Disease, 2023[3] | Health Quality Ontario, 2015[1] | National Institute for Health and Care Excellence, 2022[8] | Ontario Health Technology Advisory Committee, 2012[26]

Definition

Smoking-cessation interventions: A range of pharmacological and nonpharmacological interventions are available to help people stop smoking tobacco. Options include, but are not limited to, the following:

- Behavioural support
- Intensive counselling (≥ 90 minutes per session)
- Motivational interviewing
- Nicotine replacement therapy products
- Pharmacotherapy (e.g., bupropion, varenicline)

Rationale

Past or current tobacco smoking is the most common risk factor for developing COPD.[3] Estimates suggest that as many as 30% to 36% of people with COPD are current smokers (Canadian Community Health Survey, 2016, Statistics Canada).[35] Smoking cessation is one of the most effective ways to slow the progression of the disease, reduce symptom severity, and prevent acute exacerbations.[3,7,32] Every encounter with a health care professional presents an opportunity to discuss smoking status and cessation with people who have COPD.[8,36] Smoking-cessation interventions offered to a person with COPD should be aligned with the person's readiness for change. For those who have stopped smoking, the discussion should focus on any additional interventions that may be needed to support them in maintaining smoking cessation.

What This Quality Statement Means

For People With COPD

If you smoke tobacco, your health care professional should talk with you about how important it is for your health that you quit smoking. There are different types of treatment that can help, like counselling, nicotine replacement therapy, and other medications. You can talk with your health care professional to find the best options for you. You can also refer yourself to the Smoking Treatment for Ontario Patients (STOP) Program.

For Clinicians

Ask people with COPD about their tobacco-smoking status each time you see them. If they have stopped smoking, ask if they need any additional supports. If they still smoke or if they have started smoking again, use motivational interviewing techniques to encourage them to consider stopping. Offer appropriate smoking-cessation interventions, including behavioural support, intensive counselling, medications, or referrals to other health care professionals and programs that offer these supports (such as the Smoking Treatment for Ontario Patients [STOP] Program).

For Organizations and Health Services Planners

Ensure that pharmacological and nonpharmacological interventions for smoking cessation are available in the community to help people with COPD stop smoking tobacco, such as the Ottawa Model for Smoking Cessation program.[37] Ensure that health care professionals are trained to provide tobacco-cessation counselling, such as through the Training Enhancement in Applied Cessation Counselling and Health (TEACH) project.[38]

Quality Indicators: How to Measure Improvement for This Statement

- Percentage of people with COPD who smoke tobacco daily (lower is better)
- Percentage of people with COPD who smoke tobacco and have received counselling interventions to stop smoking tobacco in the past 12 months
- Percentage of people with COPD who smoke tobacco and have received a pharmacological intervention to stop smoking tobacco in the past 12 months

Measurement details for these indicators, as well as overarching indicators to measure improvement for the goals of the entire quality standard, are presented in Appendix 2.

Quality Statement 6: Pharmacological Management of Stable COPD

People with a confirmed diagnosis of COPD are offered individualized pharmacotherapy to improve symptoms and prevent acute exacerbations. Their medications are reviewed at least annually.

Sources: American College of Chest Physicians and Canadian Thoracic Society, 2015[32] | Canadian Thoracic Society, 2023[24] | Department of Veterans Affairs and Department of Defense, 2021[14] | Global Initiative for Chronic Obstructive Lung Disease, 2023[3]| Health Quality Ontario, 2015[1] | National Institute for Health and Care Excellence, 2022[8]

Definition

Individualized pharmacotherapy: All people with COPD should be taught proper inhaler use and delivery-device technique. When appropriate, the use of a spacer should be considered (e.g., when using pressurized metered dose inhalers). Ideally, to improve medication adherence and patient-related outcomes, multiple inhaled medications should be combined in a single inhaler (when possible), rather than delivered in multiple inhalers.

A short-acting, fast-onset inhaled bronchodilator for immediate symptom relief should be offered to all people diagnosed with COPD.[8,24] A long-acting inhaled bronchodilator – either a long-acting anti-muscarinic (LAMA) or long-acting beta-2 agonist (LABA) – should be offered to people with mild COPD.[24] People with moderate to severe COPD but without frequent or severe exacerbations and without features of asthma should be offered dual long-acting bronchodilator therapy (i.e., LAMA/LABA) as initial maintenance pharmacotherapy.[24]

For people who have COPD and concomitant asthma, initial maintenance pharmacotherapy should include an inhaler that combines a LABA and an inhaled corticosteroid (ICS) of low to moderate dose.[3,8,24] Monotherapy with an ICS is not indicated for the treatment of COPD, and LABA/ICS therapy is not indicated as a first-line medication in people without concomitant asthma.

If breathlessness persists or worsens in people with moderate to severe COPD who are already on dual LAMA/LABA therapy, a reassessment of the severity of airflow limitation (see quality statement 2), comorbidities, medication adherence, and inhaler use and delivery-device technique should be done before considering stepping up to combination triple therapy (ICS/LAMA/LABA), preferably in a single inhaler.[8,24]

If the person has frequent or severe acute exacerbations that require treatment with antibiotics or systemic corticosteroids, combination triple inhaled therapy in a single inhaler (ICS/LAMA/LABA)

should be provided to help prevent acute exacerbations. In some cases, oral pharmacologic treatment may also be considered (e.g., mucolytics, macrolides, or roflumilast).[3]

Further pharmacotherapy should be individualized based on symptom severity and the frequency and severity of acute exacerbations according to current treatment recommendations and algorithms.[3,24]

Rationale

Pharmacological management of symptomatic COPD generally requires the addition of medications to a person's regimen in a stepwise way as symptoms progress.[24,32] Many people may not recognize symptoms or attribute them to COPD. Pharmacotherapy can help reduce the day-to-day symptoms of stable COPD and prevent or reduce the severity of acute exacerbations of COPD. Medications should be selected based on the findings of a comprehensive assessment (see quality statement 2). Issues related to medication adherence, the ability of the person to use a medication delivery system, and the ability of the person to pay for medication should be considered. When offered pharmacological management, people with COPD should be taught when and how to properly use the medication and its delivery system, including inhaler technique and the use of a spacer, if applicable.[8] If different or additional medications are prescribed during an acute exacerbation of COPD, medication reconciliation should be a priority during follow-up, after the acute symptoms have subsided (see quality statements 10 and 11). Medications should be reviewed at least annually.

What This Quality Statement Means

For People With COPD

Medications are an important part of managing COPD. They can help you manage your day-to-day symptoms. They can also prevent and manage acute exacerbations of COPD, called "flare-ups."

Your health care professional should explain how and when to take your medications. If you are using an inhaler, your health care professional should ask you to show them how you use it to make sure you are confident using it.[5]

There are many different medications, including several types of inhalers, that can help you manage your COPD. If you are not feeling well on your current medications, talk with your health care professional to see if there is another type of medication you can try.

For Clinicians

Prescribe medications to manage symptoms of stable COPD and prevent acute exacerbations in a stepwise fashion, based on current treatment recommendations and algorithms according to findings from a comprehensive assessment.[5,19] Give people with COPD clear instructions about when and how to properly use the medication and its delivery system. Provide instructions on proper inhaler technique and the use of a spacer, if needed. Ask people to demonstrate how they use their inhaler to ensure proper technique, as applicable; this patient education technique is called "teach back."

For Organizations and Health Services Planners

Ensure that systems, processes, and resources are in place and that education is provided for health care professionals to appropriately offer and prescribe medications to manage stable COPD.

Quality Indicators: How to Measure Improvement for This Statement

- Percentage of people with COPD who receive the appropriate bronchodilator therapy based on COPD severity
  - Short-acting bronchodilator therapy for all people with COPD
  - Long-acting bronchodilator therapy (LAMA or LABA) for people with mild COPD
  - Dual long-acting bronchodilator therapy (LAMA/LABA) for people with moderate to severe COPD but without frequent or severe exacerbations
- Percentage of people with COPD who receive inhaled corticosteroid (ICS) monotherapy (lower is better)
- Percentage of people with COPD who use their inhaled medication delivery system properly
- Percentage of people with COPD who have had their medications reviewed at least once in the past 12 months, or more frequently if clinically indicated

Measurement details for these indicators, as well as overarching indicators to measure improvement for the goals of the entire quality standard, are presented in Appendix 2.

Quality Statement 7: Vaccinations

People with COPD are offered influenza, pneumococcal, and other vaccinations, as appropriate.

Sources: American College of Chest Physicians and Canadian Thoracic Society, 2015[32] | Canadian Thoracic Society, 2007[7] | Department of Veterans Affairs and Department of Defense, 2021[14]| Global Initiative for Chronic Obstructive Lung Disease, 2023[3] | Health Quality Ontario, 2015[1] | National Institute for Health and Care Excellence, 2022[8] | Ontario Health Technology Advisory Committee, 2012[26]

Definitions

Influenza vaccination: Influenza vaccination should be offered annually to all people with COPD unless contraindications are present.[39,40] People with immunosuppression (e.g., those receiving immunocompromising therapy such as long-term corticosteroids) and those who are aged 65 years and older should be offered a high-dose influenza vaccine.[37]

Pneumococcal vaccinations: Pneumococcal vaccinations should be offered to all people with COPD, unless contraindications are present. Pneumococcal conjugated and polysaccharide vaccinations should be considered according to National Advisory Committee on Immunization (NACI) statements and individual clinical indications, such as age and the presence of factors contributing to an increased risk of developing invasive pneumococcal disease (e.g., the use of immunocompromising therapy such as long-term corticosteroids).[41-43]

Other vaccinations: People with COPD may be at increased risk of severe illness from COVID-19 (coronavirus) and should be offered up-to-date vaccinations according to NACI statements or recommendations.[3,44,45] The Tdap (dTap/dTPa) vaccination for protection against pertussis (whooping cough) should be offered to people with COPD if they were not vaccinated in adolescence. People with COPD who are aged 50 years and older should also be offered routine zoster vaccination for protection against shingles (herpes zoster).[3]

Rationale

Influenza infection and pneumococcal disease, along with complications such as pneumonia, can worsen day-to-day symptoms for people with COPD and lead to acute exacerbations, hospitalization, and even death.[3] Annual influenza vaccination has been found to reduce the number of respiratory infections and the number of acute exacerbations experienced by people with COPD.[32] Annual influenza vaccination has also been found to reduce the number of hospitalizations owing to influenza and pneumonia, and to reduce mortality rates among people with COPD.[3,8] Potential benefits of pneumococcal vaccinations include the prevention of community-acquired pneumonia and invasive

pneumococcal disease.[3] Caregivers and family members of people with COPD should also be encouraged to receive influenza and other vaccinations as appropriate.

Other vaccinations can also benefit people with COPD. As variants and subvariants of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) circulate in Canada and globally, people with COPD should be offered up-to-date vaccinations against COVID-19 based on national recommendations to decrease their risk of severe illness from the disease.[3,44] The Tdap (dTap/dTPa) vaccination protects against pertussis or whooping cough, which is known to increase the risk of COPD exacerbations and the likelihood of other common complications that might require hospitalization, such as ear or sinus infections or pneumonia.[3,46,47,48] People with COPD who are aged 50 years and older are at greater risk of getting shingles and should be offered routine zoster vaccination.[3,49]

What This Quality Statement Means

For People With COPD

The flu and other infections, like pneumonia (a lung infection), can make COPD symptoms worse. You should be offered a flu shot every year. You should also be offered vaccines against pneumonia, COVID-19, whooping cough (if you did not get it when you were a teenager), and shingles (if you are aged 50 years or older). Your caregivers and family members should also be encouraged to get appropriate vaccines to help protect you.

For Clinicians

Ensure that people with COPD are offered influenza vaccination annually, as well as pneumococcal and up-to-date COVID-19 vaccinations based on their age and individual risk factors, as outlined in the NACI statements.[41-43] Ensure that people with COPD who were not vaccinated against pertussis in adolescence are offered the Tdap (dTap/dTPa) vaccine. Ensure that people with COPD who are aged 50 years and older are offered routine zoster vaccinations.

For Organizations and Health Services Planners

Ensure that influenza, pneumococcal, COVID-19, Tdap (dTap/dTPa), and zoster vaccines are available in sufficient quantities in primary care and community-based settings, and that they are affordable. Ensure that education is available to health care professionals about how these vaccines should be administered, when, and to whom.

Quality Indicators: How to Measure Improvement for This Statement

- Percentage of people with COPD who have received an influenza vaccination in the past 12 months
- Percentage of people with COPD who have received a pneumococcal vaccination

- Percentage of people with COPD who are up to date on other vaccinations (e.g., COVID-19, Tdap [dTap/dTPa], zoster)

Measurement details for these indicators, as well as overarching indicators to measure improvement for the goals of the entire quality standard, are presented in Appendix 2.

Quality Statement 8: Specialized Respiratory Care

People with a confirmed diagnosis of COPD are referred to specialized respiratory care when clinically indicated, after receiving a comprehensive assessment and being offered treatment in primary care. This consultation occurs in accordance with the urgency of their health status.

Sources: Canadian Thoracic Society, 2007[7] | Health Quality Ontario, 2015[1] | National Institute for Health and Care Excellence, 2022[8] | Ontario Health Technology Advisory Committee, 2012[26]

Definitions

Specialized respiratory care: Depending on the clinical indication, specialized respiratory care may be provided by a respirologist, a general internist with expertise in respiratory medicine, or a family physician or nurse practitioner with expertise in respiratory medicine or working within a specialized respiratory health clinic.

Clinically indicated: Clinical indications for referral to specialized respiratory care can include, but are not limited to, the following:

- Accelerated decline in lung function
- Assessment required for any of the following:
  - Oral pharmacologic treatment (e.g., mucolytics, macrolides, roflumilast, and theophylline)
  - Long-term oxygen therapy
  - Pulmonary rehabilitation
  - Suitability for air travel in a person with hypoxemia
  - Surgery
- Complex comorbidities (see quality statement 2)
- Frequent infections
- Hemoptysis
- Hypercapnia
- Onset of pulmonary hypertension
- Onset of symptoms at a young age or a family history of alpha-1 antitrypsin deficiency
- Need for a second opinion (e.g., if there is diagnostic uncertainty, or if symptoms are not improving)
- Severe or very severe COPD

- Severe or recurrent acute exacerbations
- Severe symptoms disproportionate to airflow limitation
- Uncertain diagnosis

Rationale

People with COPD may require specialized care at different points in their care journey, depending on the knowledge and skills of their primary care provider or other members of the interprofessional care team, and depending on changes in their health status. Before being referred to specialized respiratory care, people suspected of having COPD should typically undergo spirometry testing to confirm their diagnosis (see quality statement 1), receive a comprehensive assessment (see quality statement 2), and participate in discussions about goals of care and individualized care planning (see quality statement 3). They should also be offered pharmacotherapy (see quality statement 6) and other relevant secondary prevention measures (see quality statements 4, 5, 7, and 9).

In some cases, a phone or secure electronic consultation between a person's primary care provider and a specialist may be sufficient. Ongoing communication among the person with COPD, their primary care provider, other members of their interprofessional care team, and their specialist may help reassure the person with COPD, ensure that referrals have been completed appropriately by the primary care provider, and confirm that referrals have been received and prioritized.

The referral should include the spirometry results, results from the comprehensive assessment, information about the person's individualized care plan (including goals of care), a copy of the person's written self-management plan, and the clinical indication for referral. This information will help to ensure that people with COPD are seen according to the urgency of their health status and undergo only those investigations that have not already been completed.

What This Quality Statement Means

For People With COPD

At some point, your health care professional may determine that you need to see a physician who specializes in lung health. This is usually a respirologist, but it might also be a general internist, or a family physician or nurse practitioner with expertise in lung health.

Before you are referred to a lung specialist, your health care professional should assess you thoroughly and give you medication to help manage your symptoms.

If you are referred to a lung specialist, your health care professional should let you know when your appointment with the specialist is. They should also let you know what they hear back from the specialist after your visit.

For Clinicians

Primary care: Confirm a person's diagnosis of COPD with spirometry and perform a comprehensive assessment before considering referral to specialized respiratory care. Provide a detailed referral,

including spirometry results, comprehensive assessment results, the person's individualized care plan, a copy of the person's self-management plan, and the clinical indication for referral.

Specialized respiratory care: Communicate with the person's primary care provider to inform them of the timing of the referral response.

In certain circumstances, it may be appropriate or preferable for the consultation between primary care and specialized respiratory care to be held virtually via telephone or other remote technology.

For Organizations and Health Services Planners

Ensure that systems, processes, and resources are in place so that all people with COPD have timely access to specialized respiratory care when needed upon referral from their primary care provider.

Quality Indicators: How to Measure Improvement for This Statement

- Percentage of people with COPD referred to specialized respiratory care when clinically indicated
- Wait time between specialized respiratory care referral and first specialized respiratory care consultation
- Percentage of people with COPD seen by a respirologist

Measurement details for these indicators, as well as overarching indicators to measure improvement for the goals of the entire quality standard, are presented in Appendix 2.

Quality Statement 9: Pulmonary Rehabilitation

People with moderate to severe, stable COPD are referred to a pulmonary rehabilitation program if they have activity or exercise limitations and breathlessness despite appropriate pharmacological management.

Sources: Canadian Thoracic Society, 2007[7] | Global Initiative for Chronic Obstructive Lung Disease, 2023[3] | Health Quality Ontario, 2015[1] | National Institute for Health and Care Excellence, 2022[8] | Ontario Health Technology Advisory Committee, 2012[26] | Ontario Health Technology Advisory Committee, 2015[50]

Definitions

Moderate to severe, stable COPD: The severity of stable COPD can be classified based on the severity of airflow limitation and the degree of disability[7]:

- Severity of airflow limitation (as percentage predicted)
  - Mild: $FEV_1 \geq 80\%$
  - Moderate: $50\% \leq FEV_1 < 80\%$
  - Severe: $30\% \leq FEV_1 < 50\%$
  - Very severe: $FEV_1 < 30\%$
- Degree of disability (e.g., based on MRC Dyspnea Scale rating)
  - Mild: Breathlessness from COPD when walking at a quick pace on level ground or walking up a slight hill (MRC grade 2)
  - Moderate: Shortness of breath from COPD, causing the person to stop after walking about 100 metres (or after a few minutes) on level ground (MRC grades 3–4)
  - Severe: Shortness of breath from COPD, resulting in the person being too breathless to leave the house or becoming breathless when dressing or undressing (MRC grade 5); or the presence of chronic respiratory failure or clinical signs of right heart failure

Pulmonary rehabilitation: Pulmonary rehabilitation consists of supervised aerobic (endurance) and resistance (strength) training to increase exercise capacity and functional status. Other components include education and self-management, including behavioural interventions and nutrition and psychological support, and outcomes measurement.[5] Programs are multicomponent, interdisciplinary, and individualized, and run for at least 6 to 8 weeks.[1,19]

A person's eligibility for enrolment includes clinically stable, symptomatic COPD with increased breathlessness and reduced activity levels despite appropriate pharmacological treatment; no

evidence of poorly managed cardiovascular, neurological, or musculoskeletal conditions that might limit participation; ability to understand instructions; and a willingness to participate.

Rationale

Pulmonary rehabilitation is an interdisciplinary intervention designed and individually tailored to optimize the physical and psychological condition of people with chronic respiratory conditions such as COPD.[19] Pulmonary rehabilitation should be offered to people with COPD who remain symptomatic despite appropriate pharmacological management (see quality statement 6).[3,7,8,14]

In Ontario, pulmonary rehabilitation programs do not have enough capacity to serve all people with COPD who want to participate, and wait lists can be long.[51] From 2016 to 2021, between 200 and 500 people with COPD used inpatient rehabilitation services per year; however, data are not available on the use of hospital-based outpatient or community-based pulmonary rehabilitation programs (National Rehabilitation Reporting System, IntelliHealth, 2023). People who complete a pulmonary rehabilitation program can benefit from participation in exercise programs to maintain function; improve exercise capacity and knowledge about COPD; reduce dyspnea and symptoms of anxiety and depression; and improve their overall sense of well-being.[1,3,5]

What This Quality Statement Means

For People With COPD

It is important for your health that you exercise and stay active. You can talk with your health care professional about what kinds of exercise would be good for you and what medications can help you stay active. Your health care professional can also give you information about local programs on lung health and exercise.

If you are taking your medications as directed but still have trouble being active and often feel breathless, your health care professional may suggest that you try a pulmonary rehabilitation program.

Pulmonary rehabilitation programs are designed for people with COPD. They are offered in a hospital or a clinic in the community. These programs teach you about COPD to help you understand and manage your symptoms. They include a personalized, supported exercise program to improve your breathing, increase your fitness, and make it easier for you to do your daily activities. They also provide emotional and peer support.

If you participate in a pulmonary rehabilitation program, your health care professional should work with you to find ways for you to stay active once the program is over.

For Clinicians

Discuss the option of pulmonary rehabilitation with people who have moderate to severe, stable COPD, and refer them to pulmonary rehabilitation programs as appropriate. In cases of long wait times to begin a pulmonary rehabilitation program, give people with COPD information about and referrals to local respiratory education and exercise programs.

For Organizations and Health Services Planners

Ensure the availability of pulmonary rehabilitation programs for people with moderate to severe, stable COPD who experience activity or exercise limitations and breathlessness despite appropriate pharmacological management.

Quality Indicators: How to Measure Improvement for This Statement

- Percentage of people with moderate to severe COPD and who experience activity or exercise limitations and breathlessness despite appropriate pharmacological management who are referred to a pulmonary rehabilitation program
- Percentage of people with COPD and who are eligible for enrolment in a pulmonary rehabilitation program who participate in the program
- Percentage of people with COPD who begin a pulmonary rehabilitation program and complete the program
- Local availability of pulmonary rehabilitation programs

Measurement details for these indicators, as well as overarching indicators to measure improvement for the goals of the entire quality standard, are presented in Appendix 2.

Quality Statement 10: Management of Acute Exacerbations of COPD

People with COPD have access to their primary care provider or a health care professional in their care team within 24 hours of the onset of an acute exacerbation.

Source: Advisory committee consensus

Definitions

Access: Access to a person's primary care provider or member of their interprofessional care team may be in person or virtually via telephone or other remote technology.

Acute exacerbation: An acute exacerbation of COPD is characterized by a worsening of respiratory symptoms – such as breathlessness, cough, and sputum production (purulent or nonpurulent) – that is more severe than the day-to-day variation in symptoms that a person with COPD is accustomed to, and that lasts at least 48 hours.[7,32] The severity of an acute exacerbation is categorized according to the treatment required:

- Mild: requires treatment with inhaled bronchodilators only, outside the hospital
- Moderate: requires treatment with inhaled bronchodilators, antibiotics, and/or corticosteroids, usually outside the hospital
- Severe: may be associated with acute respiratory failure; requires treatment in hospital (emergency department visit with possible admission to hospital)

Rationale

For people with COPD, an acute exacerbation of COPD is the primary reason for unplanned medical visits, hospitalization, and (when severe) death.[7] Even after people with COPD are stabilized, these episodic symptom flare-ups impact health status, including a decrease in lung function and a reduction in health-related quality of life.[7] Typically, exacerbations occur when people with COPD have respiratory infections. Sometimes, the cause of an exacerbation is exposure to triggers in the environment, such as air pollution or temperature changes. Other times, the cause of an exacerbation is unknown.[32]

Some people will receive their initial diagnosis of COPD during or following an acute exacerbation. All people with COPD should be made aware of the early signs and symptoms of an acute exacerbation so that if they experience one, they can take steps to prevent it from getting worse (see quality statement 4). Caregivers should also be aware of these signs and symptoms, and the signs and symptoms should be noted in the person's self-management plan.

Regardless of the self-management plan or action plan they have established with their health care professionals, all people with COPD should be able to contact a health care professional in their care team within 24 hours of the onset of an acute exacerbation (worsening respiratory symptoms that last at least 48 hours). During an acute exacerbation or a suspected exacerbation, the health care professional should obtain a complete history to help determine and clarify the cause of the worsening symptoms.[7] In some cases, timely access to a health care professional who can provide structured support to assist the person with their self-management plan may prevent the need for an emergency department visit or hospital admission. However, more severe exacerbations of COPD do require an emergency department visit or admission to hospital.

What This Quality Statement Means

For People With COPD

It is important to be able to tell when you are having a flare-up so that you can prevent it from getting worse. You might be starting to have a flare-up if you experience 1 or more of the following symptoms:

- You are more out of breath than usual
- You are coughing more than usual
- You are coughing up more mucus than usual
- There is a change in the thickness or colour of your mucus
- There is blood in your mucus

Over time, many people with COPD get to know the early signs and symptoms of a flare-up. Some people find that they start feeling generally unwell, need to rest more, have difficulty sleeping, lose their appetite, become confused and restless, or lose interest in things. People who have other health conditions in addition to COPD sometimes notice that their nonrespiratory symptoms get worse first.

If you experience a flare-up, follow the instructions in your written self-management plan or COPD action plan. If your symptoms last for 48 hours or get worse, contact your health care professional right away.

For Clinicians

Explain to people with COPD the signs and symptoms of an acute exacerbation so that they know what steps to take should they experience one. Ensure that people with COPD know who on their care team to contact in the event of an acute exacerbation, and that they have the appropriate contact information. Ensure that people with COPD are able to contact a member of their care team within 24 hours of the onset of an acute exacerbation.

For Organizations and Health Services Planners

Ensure that resources and processes are in place so that people with COPD have access to primary care within 24 hours of the onset of an acute exacerbation.

Quality Indicators: How to Measure Improvement for This Statement

- Percentage of people with COPD who visited (in person or virtually) their primary care provider or a health care professional in their care team within 24 hours of the onset of an acute exacerbation
- Percentage of people with COPD who experienced an acute exacerbation who were satisfied with the wait time to see their primary care provider or a member of their interprofessional care team during the exacerbation

Measurement details for these indicators, as well as overarching indicators to measure improvement for the goals of the entire quality standard, are presented in Appendix 2.

Quality Statement 11: Follow-Up After Hospitalization for an Acute Exacerbation of COPD

People with COPD who have been hospitalized for an acute exacerbation have an in-person follow-up assessment within 7 days after discharge.

Sources: Advisory committee consensus | Health Quality Ontario, 2015[1]

Definition

In-person follow-up assessment[1,3,14]: The initial in-person follow-up assessment may be with one of a number of different health care professionals with expertise in assessing a person with COPD after discharge from hospital. Such health care professionals include, but are not limited to, the following: family physicians; nurse practitioners; respiratory therapists; and other health care professionals who are certified respiratory educators, have respiratory health expertise, or have the role of care coordinator or case manager for people with COPD, such as occupational therapists, physiotherapists, pharmacists, and nurses (including rapid-response nurses who provide home care).

The follow-up assessment after hospitalization for an acute exacerbation of COPD should be individualized and related to the details of the hospitalization. Components of the follow-up assessment include, but are not limited to, the following:

- Reviewing relevant comorbidities identified during the hospitalization
- Updating and reconciling medications, including dose and frequency, and providing inhaler technique instruction (see quality statement 6)
- Assessing barriers to coping at home or in long-term care, and assessing the need for or access to home and community care (see quality statement 3)
- Ensuring that spirometry testing has been done to confirm diagnosis and determine airflow limitation (see quality statements 1 and 2)
- Offering education about COPD and self-management interventions (see quality statement 4)
- Promoting smoking cessation (see quality statement 5)
- Reviewing the need for vaccinations (see quality statement 7)
- Ensuring that a referral to pulmonary rehabilitation has been made (see quality statement 12)
- Discussing goals of care and advance care planning as appropriate (see quality statement 3)

- Assessing the need for referral to additional palliative care supports as appropriate (see quality statement 13)
- If the person is discharged with oxygen, assessing the need for long-term oxygen therapy 30 to 90 days after discharge (see quality statement 14)

Rationale

Transitions from hospital are important events that can introduce the risks of breakdown in a person's care and of crucial information being lost or miscommunicated. It is important for people with COPD who are leaving hospital to have a discharge plan in place that is shared with their primary care provider and other members of their interprofessional care team, as appropriate, including those in hospital and those in the community.[1] Many people with undiagnosed COPD receive treatment for the first time during an acute episode rather than for the early symptoms of the disease,[52] and some receive their initial diagnosis during or after hospitalization for an acute exacerbation of COPD. Therefore, an in-person follow-up after hospitalization for an acute exacerbation presents an important opportunity to ensure that people with COPD receive the care they need to manage their disease as effectively as possible.

In-person follow-up should occur within 7 days of discharge, and, if needed, follow-up in specialized respiratory care (see quality statement 8) should occur within 30 days of discharge.[1,3] People with complex health needs may also benefit from earlier (e.g., within 48 hours) and more frequent (e.g., every few weeks) follow-up.[1,3]

For more information about the transition from hospital to home, see the *Transitions Between Hospital and Home* quality standard.[6]

What This Quality Statement Means

For People With COPD

If you have been hospitalized for a flare-up, you should see your primary care provider or another member of your interprofessional care team within 7 days of leaving the hospital. This lets them check how you are doing and make changes to your care plan, if needed. Some changes to your care plan might include:

- Prescribing different medications
- Involving other health care professionals in your care, like a lung specialist
- Suggesting that you try a pulmonary rehabilitation program

At this visit, you can also ask questions to make sure you understand what has happened to you and what you need to do to take care of yourself.

For Clinicians

See people with COPD who have been hospitalized for an acute exacerbation as soon as possible after discharge to complete a follow-up assessment. For primary care, follow-up should occur within 7 days of discharge. For specialist care, if needed, follow-up should occur within 30 days of discharge. For people with complex needs, consider earlier (e.g., within 48 hours) and more frequent (e.g., every few weeks) follow-up.

For Organizations and Health Services Planners

Ensure that systems, processes, and resources are in place in primary care, home and community care, and outpatient specialist clinics to carry out follow-up assessments of people with COPD who have been recently hospitalized for an acute exacerbation.

Quality Indicators: How to Measure Improvement for This Statement

- Percentage of people hospitalized for COPD who had an in-person follow-up assessment within 7 days of discharge
- Percentage of people hospitalized for COPD who had an in-person follow-up assessment in specialist care within 30 days of discharge
- Percentage of people with COPD who visited an emergency department for COPD within 30 days of discharge for a previous hospitalization for COPD (lower is better)
- Percentage of people readmitted to hospital for COPD within 3 months of discharge (lower is better)

Measurement details for these indicators, as well as overarching indicators to measure improvement for the goals of the entire quality standard, are presented in Appendix 2.

Quality Statement 12: Pulmonary Rehabilitation After Hospitalization for an Acute Exacerbation of COPD

People who have been admitted to hospital for an acute exacerbation of COPD are considered for pulmonary rehabilitation at the time of discharge. Those who are referred to a pulmonary rehabilitation program start the program within 1 month of hospital discharge.

Sources: American College of Chest Physicians and Canadian Thoracic Society, 2015[32] | Global Initiative for Chronic Obstructive Lung Disease, 2023[3] | National Institute for Health and Care Excellence, 2022[8] | Ontario Health Technology Advisory Committee, 2012[26] | Ontario Health Technology Advisory Committee, 2015[50]

Definition

Pulmonary rehabilitation: Pulmonary rehabilitation consists of supervised aerobic (endurance) and resistance (strength) training to increase exercise capacity and functional status. Other components include education and self-management, including behavioural interventions and nutrition and psychological support, and outcomes measurement.[5] Programs are multicomponent, interdisciplinary, and individualized, and run for at least 6 to 8 weeks.[1,19]

A person's eligibility for enrolment includes clinically stable, symptomatic COPD with increased breathlessness and reduced activity levels despite appropriate pharmacological treatment; no evidence of poorly managed cardiovascular, neurological, or musculoskeletal conditions that might limit participation; ability to understand instructions; and a willingness to participate.

Rationale

Following hospitalization for an acute exacerbation, people with COPD are likely to have worse lung function, symptoms, and quality of life than before; they are also at increased risk of having another acute exacerbation of COPD and of dying.[19] Activity and/or exercise limitations can last for weeks to months following discharge from hospital, and this physical inactivity increases the risks of negative health outcomes for people with COPD.[19]

When initiated early after discharge from hospital, pulmonary rehabilitation helps increase exercise tolerance, reduce symptoms, and improve quality of life of people with COPD.[19,50] It also decreases the risk of hospital readmissions[27,53] and mortality.[54]

Pulmonary rehabilitation is an interdisciplinary intervention designed and individually tailored to optimize the physical and psychological condition of people with chronic respiratory conditions such

as COPD.[19] Pulmonary rehabilitation is recommended as the standard of care for people after hospitalization for an acute exacerbation of COPD (within 1 month of discharge from hospital).

Despite this, in Ontario, pulmonary rehabilitation programs do not have enough capacity to serve all people with COPD who want to participate, and wait lists can be long.[51] From 2016 to 2021, between 200 and 500 people with COPD used inpatient rehabilitation services per year; however, data are not available on the use of hospital-based outpatient or community-based pulmonary rehabilitation programs (National Rehabilitation Reporting System, IntelliHealth, 2023). People who complete a pulmonary rehabilitation program benefit from participation in exercise programs to maintain function; improve exercise capacity and knowledge about COPD; reduce dyspnea and symptoms of anxiety and depression; and improve their overall sense of well-being.[1,3,5]

What This Quality Statement Means

For People With COPD

If you have been discharged from the hospital after a flare-up, your health care professional should talk with you about trying a pulmonary rehabilitation program to help improve your symptoms and regain your strength, so that you can get back to the activities you enjoy.

Pulmonary rehabilitation programs are designed for people with COPD. They are offered in a hospital or clinic in the community. These programs teach you about COPD to help you understand and manage your symptoms. They also include a personalized, supported exercise program to increase your fitness, and they provide emotional and peer support.

For Clinicians

For people with COPD being discharged from hospital for an acute exacerbation, discuss the option of pulmonary rehabilitation, and refer people with COPD to pulmonary rehabilitation programs as appropriate.

For Organizations and Health Services Planners

Ensure the availability of pulmonary rehabilitation programs for people with COPD who have recently been hospitalized for an acute exacerbation. Programs should have the capacity required to ensure that people with COPD who have recently been hospitalized for an acute exacerbation are able to begin a program within 1 month of discharge from hospital.

Quality Indicators: How to Measure Improvement for This Statement

- Percentage of people discharged from hospital after an admission for COPD who are referred to a pulmonary rehabilitation program

- Percentage of people hospitalized for COPD who started a pulmonary rehabilitation program within 1 month of discharge
- Local availability of pulmonary rehabilitation programs

Measurement details for these indicators, as well as overarching indicators to measure improvement for the goals of the entire quality standard, are presented in Appendix 2.

Quality Statement 13: Palliative Care

People with COPD and their caregivers are offered palliative care support to meet their needs.

Sources: Canadian Thoracic Society, 2007[7] | Health Quality Ontario, 2015[1] | National Institute for Health and Care Excellence, 2022[8]

Definitions

Palliative care support: The goal of a palliative approach to care is to help people achieve their best possible quality of life in the face of a progressive illness. Palliative care support consists of health advice, resources, treatment, and other assistance provided by a person's interprofessional care team to meet their needs, such as the management of severe symptoms of dyspnea and anxiety and the management of acute exacerbations, in accordance with the person's wishes, values, and beliefs. Support should be culturally appropriate, and it can come in many forms, including an office visit with the person's primary care provider or specialist, a telephone call with a registered nurse, a phone number to call when pain or other symptoms are not well managed, or a home visit.[2]

Palliative care needs: Identifying the need for palliative care can occur as early as the time of diagnosis of a progressive illness. With education to build capacity, palliative care needs can be addressed by primary care providers through primary-level palliative care, as well as respirologists and other specialists involved in the person's care. Palliative care is not limited to the end-of-life phase, and it is not restricted to specific diseases or conditions. Palliative care needs can stem from any part of a person's full range of needs across domains of care associated with illness and bereavement at any stage of illness.[2,55,56] These domains of care include:

- Disease management (including symptom management)
- Caregiver support
- Physical
- Psychological
- Social
- Cultural[57]
- Legal
- Ethical[57]
- Spiritual
- Practical
- End of life
- Loss, grief

Examples of validated tools used for assessment may include the Edmonton Symptom Assessment System[56,57] and the Palliative Performance Scale.[58] A comprehensive and holistic assessment considers a person's sociocultural context, and initial assessments should include inquiry about a person's mother tongue and language of preference.[2]

Rationale

As a progressive illness, COPD is characterized by progressive shortness of breath, often associated with cough or sputum production, resulting in decreases in exercise tolerance, the ability to carry out activities of daily living, and quality of life.[3,7,8] As the disease progresses, many people with COPD have more frequent or more severe acute exacerbations of COPD – also called flare-ups or lung attacks.[3,7] People with COPD and their caregivers should have access to individualized interprofessional care that includes a palliative approach to care, when necessary, to help enhance their quality of life throughout the course of their illness. As part of individualized care planning, people with COPD should also be engaged in discussions about their goals of care and advance care planning (see quality statement 3).

Palliative care refers to the relief of suffering and improvement of the quality of living and dying, using a holistic approach.[28] Many different health care professionals, including primary care providers, respirologists, and other members of a person's interprofessional care team, use the knowledge and skills associated with a palliative care approach to address the person's physical, psychological, social, spiritual, and practical needs, as well as their associated expectations, hopes, and fears.

Palliative care does not focus only on end-of-life care, and it should be considered as the chronic illness progresses. People can receive a palliative approach to care from their primary care provider and other members of their interprofessional care team while they are actively receiving treatment for their disease. Palliative care also helps people with a progressive, life-limiting illness and their family prepare for and manage end-of-life choices, the process of dying, and coping with loss and grief.[28]

For more information about palliative care, please see the *Palliative Care: Care for Adults With a Progressive, Life-Limiting Illness* quality standard.[2]

What This Quality Statement Means

For People With COPD

COPD is a disease that does not go away, and it can progress differently for each person. You and your caregivers should be given support to meet your physical, psychological, social, and spiritual needs. This support may include palliative care support.

Palliative care can help improve your quality of life at any stage of illness. It is not just for end of life. It can begin around the time you are diagnosed with COPD to help you manage your symptoms and the impact of your condition. You can receive COPD treatment and palliative care support at the same time.

Palliative care support can include health advice, resources, treatment, and other help from your health care professionals to help you manage symptoms like breathlessness and anxiety. It can come in many forms, like an office visit with one of your health care professionals, a telephone call with a registered nurse, a phone number to call when you are in pain or having trouble managing your symptoms, or a home visit.

For Clinicians

Ensure that people with COPD and their caregivers have access to individualized interprofessional care that includes a palliative approach to care from diagnosis onward, as needed. Assess people with COPD to determine whether they would benefit from additional palliative care services. Perform and document a comprehensive, holistic assessment that considers the individual's diagnosis, disease progression, functional decline, treatment preferences, pain and other symptoms, and other effects on the person's full range of needs. Assessment should be repeated regularly.

For Organizations and Health Services Planners

Ensure that systems, processes, and resources are in place in the community to address the palliative care needs of people with COPD and their caregivers.

Quality Indicators: How to Measure Improvement for This Statement

- Percentage of caregivers of people with COPD who received palliative care who state that they and their family members received as much help and support as they needed
- Percentage of people with COPD who lived in the community during their last 12 months, 3 months, and 1 month of life who received at least 1 home care service, 1 health care professional home visit, or hospice care during that period

Measurement details for these indicators, as well as overarching indicators to measure improvement for the goals of the entire quality standard, are presented in Appendix 2.

Quality Statement 14: Long-Term Oxygen Therapy

People with stable COPD who have clinical indications of hypoxemia receive an assessment for and, if needed, treatment with long-term oxygen therapy.

Sources: Canadian Thoracic Society, 2007[7] | Department of Veterans Affairs and Department of Defense, 2021[14] | Global Initiative for Chronic Obstructive Lung Disease, 2023[3] | Health Quality Ontario, 2015[1] | National Institute for Health and Care Excellence, 2022[8] | Ontario Health Technology Advisory Committee, 2012[26]

Definitions

Clinical indications of hypoxemia: These include 1 or more of the following:

- Very severe airflow obstruction (FEV_1 < 30%)
- Bluish discoloration of skin or mucous membranes (cyanosis)
- Hematocrit > 55% (polycythemia or erythrocytosis)
- Physical examination findings suggestive of heart failure (cor pulmonale), including peripheral edema and raised jugular venous pressure
- Resting oxygen saturation ≤ 92% (screened with oximetry)

People with severe airflow obstruction (30% ≤ FEV_1 < 50%) may also be considered for assessment, especially if oxygen saturation is less than 92% on oximetry.

Treatment with long-term oxygen therapy: Arterial blood gases should be used to assess the need for long-term oxygen therapy. Long-term oxygen therapy should be offered to people with stable COPD who have severe resting hypoxemia (arterial partial pressure of oxygen [PaO_2] ≤ 55 mmHg and/or arterial oxygen saturation [SaO_2] ≤ 88%).

People with moderate resting hypoxemia (PaO_2 56–60 mmHg and/or SaO_2 89%–90%) may also benefit from long-term oxygen therapy, especially if they have 1 of the following:

- Pulmonary hypertension
- Hematocrit > 55% (polycythemia or erythrocytosis)
- Physical examination findings suggestive of heart failure (cor pulmonale), including peripheral edema and raised jugular venous pressure
- Exercise limited by hypoxemia (SaO_2 ≤ 88%) that improves with supplemental oxygen[59]
- Nocturnal hypoxemia (SaO_2 ≤ 88%) ≥ 30% of the night[59]

People with exertional hypoxemia, as assessed by a standardized exercise test ($SaO_2 \leq 88\%$), may be eligible for long-term oxygen therapy if their exercise tolerance is restricted owing to severe breathlessness (MRC Dyspnea Scale ≥ grade 4) and improves with supplemental oxygen, and if they are motivated to use oxygen therapy to increase their activity level.[59]

Once long-term therapy has been initiated, oxygen should be used for at least 15 hours a day for people with resting hypoxemia, or as prescribed for people with exertional hypoxemia.[7,8]
The continued need for long-term oxygen therapy should be assessed with oximetry after 60 to 90 days and then at least once a year.

Rationale

In people with COPD and severe chronic resting hypoxemia, long-term oxygen therapy has been found to increase survival time; however, there is limited evidence of benefit for people who have moderate resting or exercise-induced hypoxemia only.[3,14] In addition, it has been found that "inappropriate oxygen therapy in people with COPD may cause respiratory depression."[8] Therefore, an assessment of the need for long-term oxygen therapy is essential before initiating it in people with stable COPD. When initiating oxygen therapy, health care professionals should give people with COPD education on the proper and safe use of oxygen.

What This Quality Statement Means

For People With COPD

If your body is not getting enough oxygen when you breathe, you may need to start using oxygen at home. This is called "oxygen therapy." To make sure oxygen therapy is right for you, your health care professional will have you take some tests to measure the level of oxygen in your blood. Oxygen is not used to treat breathlessness. It should not be used unless you have low levels of oxygen in your blood. Oxygen can be supplied in different ways, like in a canister or a machine. Your health care professional will help you decide which option is best for you. Oxygen is usually delivered by a small tube with prongs that are placed in your nose. This is called a "cannula." Sometimes oxygen is delivered through a mask. Some people with COPD take oxygen therapy for a short time while they recover from a flare-up, and other people with COPD take oxygen therapy on a long-term basis.

For Clinicians

Screen people with COPD using oximetry to determine if arterial blood gases should be measured to assess the need for long-term oxygen therapy. When initiating oxygen therapy, give people with COPD information about the proper and safe use of oxygen, including information about the risk of falls from tripping over equipment, and the risk of burns and fires for people who live in homes where someone smokes. Reassess the need for continued oxygen therapy 60 to 90 days following initiation and then at least once a year.

For Organizations and Health Services Planners

Ensure the availability of pulse oximeters and arterial blood gas testing to determine the need for long-term oxygen therapy. Ensure access to long-term oxygen therapy for people with COPD who need it.

Quality Indicators: How to Measure Improvement for This Statement

- Percentage of people with stable COPD receiving long-term oxygen therapy whose oxygen saturation was regularly measured with oximetry (60 to 90 days following initiation and at least once every 12 months afterwards)
- Percentage of people with stable COPD and receiving long-term oxygen therapy whose arterial blood gases were measured prior to initiating therapy
- Percentage of people with stable COPD and at least 1 indication for long-term oxygen therapy who receive long-term oxygen therapy
- Local availability of long-term oxygen therapy assessments (pulse oximeters and arterial blood gas testing)

Measurement details for these indicators, as well as overarching indicators to measure improvement for the goals of the entire quality standard, are presented in Appendix 2.

Appendix 1: About This Quality Standard

How to Use This Quality Standard

Quality standards inform patients, clinicians, and organizations about what high-quality care looks like for health conditions or processes deemed a priority for quality improvement in Ontario. They are based on the best evidence.

Guidance on how to use quality standards and their associated resources is included below.

For People With COPD

This quality standard consists of quality statements. These describe what high-quality care looks like for people with COPD.

Within each quality statement, we have included information on what these statements mean for you, as a patient.

In addition, you may want to download this accompanying patient guide on COPD, to help you and your family have informed conversations with your health care providers. Inside, you will find information and questions you may want to ask as you work together to make a plan for your care.

For Clinicians and Organizations

The quality statements within this quality standard describe what high-quality care looks like for people with COPD. They are based on the best evidence and designed to help you know what to do to reduce gaps and variations in care.

Many clinicians and organizations are already providing high-quality, evidence-based care. However, there may be elements of your care that can be improved. This quality standard can serve as a resource to help you prioritize and measure improvement efforts.

Tools and resources to support you in your quality improvement efforts accompany each quality standard. These resources include indicators and their definitions (Appendix 2). Measurement is key to quality improvement. Collecting and using data when implementing a quality standard can help you assess the quality of care you are delivering and identify gaps in care and areas for improvement.

There are also a number of resources online to help you, including:

- Our patient guide on COPD, which you can share with patients and families to help them have conversations with you and their other health care providers. Please make the patient guide available where you provide care
- Our measurement resources, including the technical specifications for the indicators in this quality standard, the “case for improvement” slide deck to help you to share why this standard

was created and the data behind it, and our measurement guide containing supplementary information to support the data collection and measurement process

- Our placemat, which summarizes the quality standard and includes links to helpful resources and tools
- Our Getting Started Guide, which includes links to templates and tools to help you put quality standards into practice. This guide shows you how to plan for, implement, and sustain changes in your practice
- Quorum, an online community dedicated to improving the quality of care across Ontario. This is a place where health care providers can share information and support each other, and it includes tools and resources to help you implement the quality statements within each standard

How the Health Care System Can Support Implementation

As you work to implement this quality standard, there may be times when you find it challenging to provide the care outlined due to system-level barriers or gaps. These challenges have been identified and documented as part of the development of the quality standard, which included extensive consultation with health care professionals and lived experience advisors and a careful review of available evidence and existing programs. Many of the levers for system change fall within the purview of Ontario Health, and as such we will continue to work to address these barriers to support the implementation of quality standards. We will also engage and support other provincial partners, including the Ministry of Health or other relevant ministries, on policy-level initiatives to help bridge system-level gaps.

In the meantime, there are many actions you can take on your own, so please read the standard and act where you can.

Appendix 2: Measurement to Support Improvement

The COPD Quality Standard Advisory Committee identified 7 indicators for this quality standard. These indicators can be used to monitor the progress being made to improve care for people with COPD in Ontario. Some indicators are provincially measurable, while some can be measured using only locally sourced data.

Using data from these indicators will help you assess the quality of care you are delivering and the effectiveness of your quality improvement efforts. This standard includes numerous statement-specific indicators which are provided as examples; you may wish to create your own quality improvement indicators based on the needs of your population. We recommend that you identify areas to focus on in the quality standard and then use one or more of the associated indicators to guide and evaluate your quality improvement efforts.

Ontario Health is committed to promoting health equity and reducing disparities. We encourage collecting data and measuring indicators by various equity stratifications that are relevant and appropriate for your population, such as socioeconomic and demographic characteristics. These may include age, income, region/geography, education, language, race and ethnicity, gender, and sex. Please refer to Appendix 4, Guiding Principles, *Social Determinants of Health*, for additional equity considerations.

Our measurement guide provides more information and concrete steps on how to incorporate local measurement into your planning and quality improvement work. Our technical specifications provide supplementary information to support data collection and measurement for the overarching indicators, which measure improvement for the goals of the entire quality standard.

Indicators That Can Be Measured Using Provincial Data

Percentage of people with COPD whose diagnosis is confirmed by spirometry

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator whose diagnosis is confirmed by spirometry
- Data sources: Discharge Abstract Database (DAD; for the denominator); National Ambulatory Care Reporting System (NACRS; for the denominator); Ontario Health Insurance Plan (OHIP) Claims Database (for the denominator and to identify spirometry testing conducted by physicians who billed OHIP); Registered Persons Database (RPDB; for the denominator)

Percentage of people hospitalized for COPD who had an in-person follow-up assessment with a physician within 7 days of discharge

- Denominator: total number of people hospitalized for COPD
- Numerator: number of people in the denominator who had an in-person follow-up assessment with a physician within 7 days of discharge (note: phone visits might be included to account for the circumstances of the COVID-19 pandemic). Stratify by physician specialty
- Data sources: DAD, RPDB (for the denominator); OHIP Claims Database (to identify follow-up with physicians who billed OHIP)

Percentage of people with COPD who have filled a prescription for long-acting bronchodilator therapy (measurable for people aged 65 years and older only)

- Denominator: total number of people with COPD aged 65 years and older
- Numerator: number of people in the denominator who have filled a prescription for long-acting bronchodilator therapy
- Data sources: DAD, NACRS, OHIP Claims Database, RPDB (for the denominator); Ontario Drug Benefit (ODB) Database (to identify prescriptions filled)

Percentage of people with COPD with 1 or more unplanned acute care visits for COPD in each year

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator with 1 or more unplanned acute care visits for COPD in each year. Stratify by:
  - Unscheduled emergency department visits
  - Nonelective hospitalizations
- Data sources: DAD (for the denominator and to identify hospitalizations); NACRS (for the denominator and to identify emergency department visits); OHIP Claims Database, RPDB (for the denominator)

Percentage of people with COPD who smoke cigarettes daily

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator who smoke cigarettes daily
- Data source: Canadian Community Health Survey (Statistics Canada)

Indicators That Can Be Measured Using Only Local Data

Percentage of people with COPD whose disease has an impact on their life

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator whose disease has an impact on their life. Stratify by:
  - Low impact
  - Medium impact
  - High impact
  - Very high impact
- Data sources: local data collection, possibly patient surveys such as the COPD Assessment Test, where applicable

Percentage of people with moderate to severe COPD who have access to a pulmonary rehabilitation program

- Denominator: total number of people with moderate to severe COPD
- Numerator: number of people in the denominator who have access to a pulmonary rehabilitation program. Stratify by:
  - Community-based rehabilitation
  - Inpatient rehabilitation
- Data sources: local data collection, possibly physician reports (based on their knowledge of services available) and patient surveys

How to Measure Improvement for Specific Statements

Quality Statement 1: Diagnosis Confirmed With Spirometry

Percentage of people clinically suspected of having COPD who have undergone spirometry testing to confirm diagnosis within 3 months of developing respiratory symptoms

- Denominator: total number of people clinically suspected of having COPD
- Numerator: number of people in the denominator who have undergone spirometry testing to confirm diagnosis within 3 months of developing respiratory symptoms

- Data sources: local data collection (for the denominator and to identify spirometry testing conducted by nonphysicians and by physicians who did not bill OHIP); OHIP Claims Database (to identify spirometry testing conducted by physicians who billed OHIP)
- Note: This indicator is also included in *Indicators That Can Be Measured Using Provincial Data*, above, with different specifications

Local availability of spirometry testing

- Description: availability of spirometry testing in the health facility, region, or other setting of interest
- Data source: local data collection

Quality Statement 2: Comprehensive Assessment

Percentage of people with COPD whose degree of COPD-related disability has been evaluated within the past 12 months

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator whose degree of COPD-related disability has been evaluated within the past 12 months. Stratify by:
  - Initial assessment
  - Regular follow-up
- Data source: local data collection

Percentage of people with COPD whose risk of acute exacerbation of COPD has been reviewed within the past 12 months

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator whose risk of acute exacerbation of COPD has been reviewed within the past 12 months. Stratify by:
  - Initial assessment
  - Regular follow-up
- Data source: local data collection

Percentage of people with COPD who have had an evaluation of comorbidities within the past 12 months

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator who have had an evaluation of comorbidities within the past 12 months. Stratify by:
  - Initial assessment
  - Regular follow-up
- Data source: local data collection

Quality Statement 3: Goals of Care and Individualized Care Planning

Percentage of people with COPD who discussed their goals of care with their interprofessional care team or their primary care provider at least once per year

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator who discussed their goals of care with their interprofessional care team (including their primary care provider, substitute decision-maker, and other members of their care team) at least once per year
- Data source: local data collection

Percentage of people with COPD with at least 1 scheduled health care visit for COPD in the past 12 months

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator with at least 1 scheduled health care visit for COPD in the past 12 months. Stratify by symptom severity
- Data sources: local data collection (for the denominator and to identify visits to nonphysicians and by physicians who did not bill OHIP); OHIP Claims Database (to identify visits to physicians who billed OHIP); DAD, NACRS, RPDB (can be used for the denominator)

Quality Statement 4: Education and Self-Management

Percentage of people with COPD who participate in 1 or more interventions with their health care professional to support self-management

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator who participate in 1 or more interventions with their health care professional to support self-management (see quality statement 4 for definitions and examples of interventions)
- Data source: local data collection

Percentage of people with COPD who have a written self-management plan

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator who have a written self-management plan
- Data source: local data collection

Percentage of people with COPD who report feeling confident in the self-management of their symptoms

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator who respond "Confident" or "Very confident" to the following question: "How confident are you in your ability to manage your COPD symptoms?" (Response options: Very confident, Confident, Not confident, Not at all confident, Unsure). Stratify by:
  - Those with a self-management plan
  - Those without a self-management plan
- Data source: local data collection

Quality Statement 5: Promoting Smoking Cessation

Percentage of people with COPD who smoke tobacco daily (lower is better)

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator who report smoking tobacco daily
- Sample survey question (specific to smoking cigarettes; could be expanded to all tobacco products): At the present time, do you smoke cigarettes every day, occasionally, or not at all? (Response options: Every Day, Occasionally, Not at all, Don't know, Refused; Exclusions: those who respond "Don't know" or "Refused")[60]
- Data source: local data collection
- Note: This indicator is also included in *Indicators That Can Be Measured Using Provincial Data*, above, with different specifications

Percentage of people with COPD who smoke tobacco and have received counselling interventions to stop smoking tobacco in the past 12 months

- Denominator: total number of people with COPD who smoke tobacco
- Numerator: number of people in the denominator who have received counselling interventions to stop smoking tobacco in the past 12 months. Stratify by:
  - Daily smoking
  - Occasional smoking

- Data sources: local data collection (for counselling provided by nonphysicians and by physicians who did not bill OHIP); OHIP Claims Database (for counselling provided by physicians who billed OHIP)

Percentage of people with COPD who smoke tobacco and have received a pharmacological intervention to stop smoking tobacco in the past 12 months

- Denominator: total number of people with COPD who smoke tobacco
- Numerator: number of people in the denominator who have received a pharmacological intervention to stop smoking tobacco in the past 12 months
- Data sources: ODB Database (for medications dispensed to people aged 65 years and older); local data collection (for the denominator, those aged less than 65 years, and to measure the use of medications not covered by the ODB Program, including over-the-counter medications such as nicotine replacement therapies)

Quality Statement 6: Pharmacological Management of Stable COPD

Percentage of people with COPD who receive the appropriate bronchodilator therapy based on COPD severity

- Short-acting bronchodilator therapy for all people with COPD
  - Denominator: total number of people with COPD
  - Numerator: number of people in the denominator who receive short-acting bronchodilator therapy
- Long-acting bronchodilator therapy (LAMA or LABA) for people with mild COPD
  - Denominator: total number of people with mild COPD
  - Numerator: number of people in the denominator who receive long-acting bronchodilator therapy (LAMA or LABA)
- Dual long-acting bronchodilator therapy (LAMA/LABA) for people with moderate to severe COPD but without frequent or severe exacerbations
  - Denominator: total number of people with moderate to severe COPD but without frequent or severe exacerbations
  - Numerator: number of people in the denominator who receive dual long-acting bronchodilator therapy (LAMA/LABA)
- Data source: local data collection
- Note: A proxy indicator could be measured using ODB data (prescriptions filled for those 65 years of age and older)

Percentage of people with COPD who receive inhaled corticosteroid monotherapy (lower is better)

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator who receive inhaled corticosteroid monotherapy
- Data source: local data collection
- Note: A proxy indicator could be measured using ODB data (for those aged 65 years and older)

Percentage of people with COPD who use their inhaled medication delivery system properly

- Denominator: total number of people with COPD who have been prescribed an inhaled medication delivery system
- Numerator: number of people in the denominator who use their inhaled medication delivery system properly (i.e., usage technique). Stratify by type of delivery system
- Data source: local data collection

Percentage of people with COPD who have had their medications reviewed at least once in the past 12 months, or more frequently if clinically indicated

- Denominator: total number of people with COPD who receive 1 or more medications for COPD
- Numerator: number of people in the denominator who have had their medications reviewed at least once in the past 12 months, or more frequently if clinically indicated
- Data source: local data collection

Quality Statement 7: Vaccinations

Percentage of people with COPD who have received an influenza vaccination in the past 12 months

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator who have received an influenza vaccination in the past 12 months
- Data sources: local data collection (for administration by nonphysicians and by physicians who did not bill OHIP); OHIP Claims Database (for administration by physicians who billed OHIP), Resident Assessment Instrument–Home Care (RAI-HC; for home care); Resident Assessment Instrument–Minimum Data Set (RAI-MDS; for long-term care); DAD, NACRS, RPDB (can be used for the denominator)

Percentage of people with COPD who have received a pneumococcal vaccination

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator who have received a pneumococcal vaccination

- Data sources: local data collection (for administration by nonphysicians and by physicians who did not bill OHIP); OHIP Claims Database (for administration by physicians who billed OHIP); Resident Assessment Instrument–Home Care (RAI-HC; for home care); Resident Assessment Instrument–Minimum Data Set (RAI-MDS; for long-term care); DAD, NACRS, RPDB (can be used for the denominator)

Percentage of people with COPD who are up to date on other vaccinations (e.g., COVID-19, Tdap [dTap/dTPa], zoster)

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator who have received other vaccinations (e.g., COVID-19, Tdap [dTap/dTPa], zoster) as scheduled
- Data sources: local data collection (for administration by nonphysicians and by physicians who did not bill OHIP); OHIP Claims Database (for administration by physicians who billed OHIP); Resident Assessment Instrument–Home Care (RAI-HC; for home care); Resident Assessment Instrument–Minimum Data Set (RAI-MDS; for long-term care); DAD, NACRS, RPDB (can be used for the denominator)

Quality Statement 8: Specialized Respiratory Care

Percentage of people with COPD referred to specialized respiratory care when clinically indicated

- Denominator: total number of people with COPD with a clinically indicated reason for referral to specialized respiratory care
- Numerator: number of people in the denominator referred to specialized respiratory care. Stratify by clinical indication (e.g., severe or recurrent acute exacerbations, frequent infections)
- Data sources: local data collection; OHIP Claims Database (to identify specialist physician visits)

Wait time between specialized respiratory care referral and first specialized respiratory care consultation

- Population: total number of people with COPD who have been referred to specialized respiratory care
- Definition: number of days between referral for specialized respiratory care and first specialized respiratory care consultation (mean, median, and 90th percentile). Stratify by:
  - Referral provider type
  - Urgency of health status
- Data source: local data collection

Percentage of people with COPD seen by a respirologist

- Denominator: total number of people with COPD
- Numerator: number of people in the denominator seen by a respirologist. Stratify by symptom severity
- Data sources: DAD, NACRS, RPDB (for the denominator); OHIP Claims Database (for the denominator and to identify respirologist visits)

Quality Statement 9: Pulmonary Rehabilitation

Percentage of people with moderate to severe COPD and who experience activity or exercise limitations and breathlessness despite appropriate pharmacological management who are referred to a pulmonary rehabilitation program

- Denominator: total number of people with moderate to severe COPD and who experience activity or exercise limitations and breathlessness despite appropriate pharmacological management
- Numerator: number of people in the denominator who are referred to a pulmonary rehabilitation program
- Exclusions: those ineligible for participation in a pulmonary rehabilitation program
- Data source: local data collection

Percentage of people with COPD and who are eligible for enrolment in a pulmonary rehabilitation program who participate in the program

- Denominator: total number of people with COPD and who are eligible for a pulmonary rehabilitation program (including those with moderate to severe COPD who experience activity or exercise limitations and breathlessness despite appropriate pharmacological management)
- Numerator: number of people in the denominator who participate in a pulmonary rehabilitation program
- Data sources: local data collection (for community-based rehabilitation); National Rehabilitation Reporting System (NRS; for inpatient rehabilitation)

Percentage of people with COPD who begin a pulmonary rehabilitation program and complete the program

- Denominator: total number of people with COPD who begin a pulmonary rehabilitation program
- Numerator: number of people in the denominator who complete a pulmonary rehabilitation program (attend ≥ 70% of sessions)
- Data sources: local data collection (for outpatient hospital-based or community-based rehabilitation); NRS (for inpatient rehabilitation); DAD, NACRS, RPDB (can be used for the denominator)

Local availability of pulmonary rehabilitation programs

- Description: availability of pulmonary rehabilitation programs in the health facility, region, or other setting of interest
- Data source: local data collection

Quality Statement 10: Management of Acute Exacerbations of COPD

Percentage of people with COPD who visited (in person or virtually) their primary care provider or a health care professional in their care team within 24 hours of the onset of an acute exacerbation

- Denominator: total number of people with COPD who experienced an acute exacerbation
- Numerator: number of people in the denominator who visited (in person or virtually) their primary care provider or a health care professional in their care team within 24 hours of the onset of the acute exacerbation
- Data sources: local data collection; OHIP Claims Database (to identify primary care or care team visits)

Percentage of people with COPD who experienced an acute exacerbation who were satisfied with the wait time to see their primary care provider or a member of their interprofessional care team during the exacerbation

- Denominator: total number of people with COPD who experienced an acute exacerbation and saw their primary care provider or a member of their interprofessional care team
- Numerator: number of people in the denominator who answered “Very good” or “Excellent” to the question: “How would you rate the length of time between making your appointment and the visit you just had?” (Response options: Poor, Fair, Good, Very good, Excellent)
- Data source: local data collection

Quality Statement 11: Follow-Up After Hospitalization for an Acute Exacerbation of COPD

Percentage of people hospitalized for COPD who had an in-person follow-up assessment within 7 days of discharge

- Denominator: total number of people discharged from hospital after an admission for COPD (main or contributing diagnosis)
- Numerator: number of people in the denominator who had an in-person follow-up assessment within 7 days of discharge
- Data sources: local data collection (to identify follow-up with nonphysicians and with physicians who did not bill OHIP); OHIP Claims Database (to identify follow-up with physicians who billed OHIP); DAD (can be used for the denominator)

- Note: This indicator is also included in *Indicators That Can Be Measured Using Provincial Data*, above, with different specifications

Percentage of people hospitalized for COPD who had an in-person follow-up assessment in specialist care within 30 days of discharge

- Denominator: total number of people discharged from hospital after an admission for COPD (main or contributing diagnosis)
- Numerator: number of people in the denominator who had an in-person follow-up assessment in specialist care within 30 days of discharge
- Data sources: local data collection (to identify follow-up with physicians who did not bill OHIP); OHIP Claims Database (to identify follow-up with physicians who billed OHIP); DAD (can be used for the denominator)

Percentage of people with COPD who visited an emergency department for COPD within 30 days of discharge for a previous hospitalization for COPD (lower is better)

- Denominator: total number of people discharged from hospital after an admission for COPD (main or contributing diagnosis)
- Numerator: number of people in the denominator who made an unscheduled emergency department visit for COPD (main or contributing problem) within 30 days of discharge from their index hospitalization
- Data sources: DAD, NACRS

Percentage of people readmitted to hospital for COPD within 3 months of discharge (lower is better)

- Denominator: total number of people discharged from hospital after an admission for COPD (main or contributing diagnosis)
- Numerator: number of people in the denominator readmitted to hospital for COPD (main or contributing diagnosis) within 3 months of discharge from their index hospitalization
- Data source: DAD

Quality Statement 12: Pulmonary Rehabilitation After Hospitalization for an Acute Exacerbation of COPD

Percentage of people discharged from hospital after an admission for COPD who are referred to a pulmonary rehabilitation program

- Denominator: total number of people discharged from hospital after an admission for COPD (main or contributing diagnosis)

- Numerator: number of people in the denominator who are referred to a pulmonary rehabilitation program
- Data sources: local data collection; DAD (can be used for the denominator)

Percentage of people hospitalized for COPD who started a pulmonary rehabilitation program within 1 month of discharge

- Denominator: total number of people discharged from hospital after an admission for COPD (main or contributing diagnosis)
- Numerator: number of people in the denominator who start a pulmonary rehabilitation program within 1 month of discharge
- Data sources: local data collection (for community-based rehabilitation); NRS (for inpatient rehabilitation); DAD (can be used for the denominator)

Local availability of pulmonary rehabilitation programs

- Description: availability of pulmonary rehabilitation programs in the health facility, region, or other setting of interest
- Data source: local data collection

Quality Statement 13: Palliative Care

Percentage of caregivers of people with COPD who received palliative care who state that they and their family members received as much help and support as they needed

- Denominator: total number of caregivers of people with COPD who received palliative care
- Numerator: number of people in the denominator who state that they and their family members received as much help and support as they needed
- Data source: local data collection
- Note: A similar question is available in the CaregiverVoice Survey: Overall, do you feel that you and your family got as much help and support from home care services as you needed? (Response options: Yes, we got as much support as we needed; No, we did not get as much support as we needed, though we tried to get more; No, we did not get as much support as we needed, but we did not ask for more)[61]

Percentage of people with COPD who lived in the community during their last 12 months, 3 months, and 1 month of life who received at least 1 home care service, 1 health care professional home visit, or hospice care during that period

- Denominator: total number of people with COPD who died and who had lived in the community in the last 12 months, 3 months, and 1 month of their life

- Numerator: number of people in the denominator who, in their last 12 months, 3 months, and 1 month of life received 1 of the following:
  - Home care services (any and palliative-specific)
  - Health care professional home visits (currently only physician home visits are measurable)
  - Hospice care (currently not measurable)
- Data sources: local data collection (for home visits by nonphysicians and by physicians who did not bill OHIP and for hospice care); Continuing Care Reporting System (CCRS); Home Care Database (HCD); NRS; OHIP Claims Database (for home visits by physicians who billed OHIP); DAD, NACRS, RPDB (can be used for the denominator and to identify deaths)

Quality Statement 14: Long-Term Oxygen Therapy

Percentage of people with stable COPD receiving long-term oxygen therapy whose oxygen saturation was regularly measured with oximetry (60 to 90 days following initiation of therapy and at least once every 12 months afterwards)

- Denominator: total number of people with stable COPD receiving long-term oxygen therapy
- Numerator: number of people in the denominator whose oxygen saturation was regularly measured with oximetry (60 to 90 days following initiation of therapy and at least once every 12 months afterwards)
- Data source: local data collection

Percentage of people with stable COPD and receiving long-term oxygen therapy whose arterial blood gases were measured prior to initiating therapy

- Denominator: total number of people with stable COPD and receiving long-term oxygen therapy
- Numerator: number of people in the denominator whose arterial blood gases were measured prior to initiating therapy
- Data source: local data collection

Percentage of people with stable COPD and at least 1 indication for long-term oxygen therapy who receive long-term oxygen therapy

- Denominator: total number of people with stable COPD and at least 1 indication for long-term oxygen therapy
- Numerator: number of people in the denominator who receive long-term oxygen therapy. Stratify by disease severity
- Data sources: local data collection (for denominator); Assistive Devices Program (for the numerator)

Local availability of long-term oxygen therapy assessments (pulse oximeters and arterial blood gas testing)

- Description: availability of oxygen therapy assessments (pulse oximeters and arterial blood gas testing) in the health facility, region, or other setting of interest
- Data source: local data collection

Appendix 3: Glossary

Term	Definition
Adults	People aged 18 years and older.
Caregiver	An unpaid person who provides care and support in a nonprofessional capacity, such as a parent, other family member, friend, or anyone else identified by the person with COPD. Other terms commonly used to describe this role include “care partner,” “informal caregiver,” “family caregiver,” “carer,” and “primary caregiver.”
Culturally appropriate care	Care that incorporates cultural or faith traditions, values, and beliefs; is delivered in the person’s preferred language; adapts culture-specific advice; and incorporates the person’s wishes to involve family or community members.[62]
Family	The people closest to a person in terms of knowledge, care, and affection; this may include biological family, family through marriage, or family of choice and friends. The person defines their family and who will be involved in their care.
Health care professionals	Regulated professionals, such as nurses, nurse practitioners, occupational therapists, pharmacists, physicians, physiotherapists, psychologists, respiratory therapists, and social workers.
Health care providers	Health care professionals, as well as people in unregulated professions, such as administrative staff, behavioural support workers, patient transport staff, personal support workers, recreational staff, spiritual care staff, patient transport staff, and volunteers.
Home	A person’s usual place of residence. This may include personal residences, retirement residences, assisted-living facilities, long-term care facilities, hospices, and shelters.
Interprofessional care	Care that occurs when multiple health care professionals from different professional backgrounds work together to provide comprehensive health services for a person by working with the person and their family, caregivers, and community to deliver the highest quality of care across settings.[31]
Long-term care	Care provided in long-term care homes.

Primary care	A setting where people receive general health care (e.g., screening, diagnosis, and management) from a regulated health care professional whom the person can access directly without a referral. This is usually the primary care physician, family physician, nurse practitioner, or other health care professional with the ability to make referrals, request biological testing, and prescribe medications.[63,64]
Primary care provider	A family physician (also called a primary care physician) or nurse practitioner.
Specialized respiratory care	Depending on the clinical indication, specialized respiratory care may be provided by a respirologist, a general internist with expertise in respiratory medicine, or a family physician or nurse practitioner with expertise in respiratory medicine or working within a specialized respiratory health clinic.
Substitute decision-maker	A person appointed to make decisions on behalf of another under a "Power of Attorney for Personal Care."
Transitions in care	These occur when patients transfer between different care settings (e.g., hospital, primary care, long-term care, home and community care) or between different health care providers during the course of an acute or chronic illness.

Appendix 4: Values and Guiding Principles

Values That Are the Foundation of This Quality Standard

This quality standard was created, and should be implemented, according to the Patient, Family and Caregiver Declaration of Values for Ontario. This declaration "is a vision that articulates a path toward patient partnership across the health care system in Ontario. It describes a set of foundational principles that are considered from the perspective of Ontario patients, and serves as a guidance document for those involved in our health care system."

These values are:

- Respect and dignity
- Empathy and compassion
- Accountability
- Transparency
- Equity and engagement

A quality health system is one that provides good access, experience, and outcomes for all people in Ontario, no matter where they live, what they have, or who they are.

Guiding Principles

In addition to the above values, this quality standard is guided by the principles outlined below.

Acknowledging the Impacts of Colonization and Racism

Health care professionals should acknowledge and work toward addressing the historical and present-day impacts of colonization and racism in the context of the lives of Indigenous Peoples and racialized people throughout Canada. This work involves being sensitive to the impacts of intergenerational and present-day traumas and the physical, mental, emotional, and social harms experienced by Indigenous and racialized people, families, and communities, as well as recognizing their strength and resilience. This quality standard uses existing clinical practice guideline sources that may not include culturally appropriate care or acknowledge traditional beliefs, practices, and models of care relevant to Indigenous and racialized people.

French Language Services

In Ontario, the *French Language Services Act* guarantees an individual's right to receive services in French from Government of Ontario ministries and agencies in 26 designated areas and at government head offices.[65]

Social Determinants of Health

Homelessness and poverty are 2 examples of economic and social conditions that influence people's health, known as the social determinants of health. Other social determinants of health include employment status and working conditions, ethnicity, food security and nutrition, gender, housing, immigration status, social exclusion, and residing in a rural or urban area. Social determinants of health can have strong effects on individual and population health; they play an important role in understanding the root causes of poorer health. People with COPD may live under very stressful social and economic conditions that worsen their health,[66] including social stigma, discrimination, and a lack of access to education, employment, income, and housing.[67]

Chronic Disease Self-Management

People with COPD and their families, caregivers, and personal supports should also receive services that are respectful of their rights and dignity, and that promote shared decision-making and self-management.[68] Further, people should be empowered to make informed choices about the services that best meet their needs.[69] People with COPD should engage with their care providers in informed, shared decision-making about their treatment options. Each person is unique and has the right to determine their own path toward physical and mental health and well-being.[68]

Integrated Care

People with COPD should receive care through an integrated approach that facilitates access to interprofessional services from multiple health care providers from different professional backgrounds and across health care settings to provide comprehensive services.[31] Health care providers should work with patients, their families and caregivers, and communities to deliver the highest quality of care across settings. Interprofessional collaboration, shared decision-making, coordination of care, and continuity of care (including follow-up care) are hallmarks of this patient-centred approach.[31]

Trauma-Informed Care

Trauma-informed care is health care that reflects an understanding of trauma and the impact that traumatic experiences can have on human beings.[70] This approach does not necessarily address the trauma directly; rather, the approach acknowledges that a person may have experienced a previous traumatic event that may contribute to their current health concerns and emphasizes understanding, respecting, and responding to the effects of trauma.[71]

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References

(1) Health Quality Ontario, Ministry of Health and Long-Term Care. Quality-based procedures: clinical handbook for chronic obstructive pulmonary disease (acute and postacute) [Internet]. Toronto (ON): Queen's Printer for Ontario; 2015 [cited 2016 Jan 5]. Available from: http://www.hqontario.ca/Evidence-to-Improve-Care/Health-Technology-Assessment/Other-Publications/Clinical-Handbooks-for-Quality-Based-Procedures

(2) Health Quality Ontario, Ontario Palliative Care Network. Palliative care: care for adults with a progressive, life-limiting illness [Internet]. Toronto (ON): Queen's Printer for Ontario; 2018 [cited 2018 Apr]. Available from: http://www.hqontario.ca/portals/0/documents/evidence/quality-standards/qs-palliative-care-clinical-guide-en.pdf

(3) Global Initiative for Chronic Obstructive Lung Disease (GOLD). Global strategy for prevention, diagnosis and management of COPD: 2023 report [Internet]. Fontana (WI): GOLD; 2023 [cited 2023 Jul 26]. Available from: https://goldcopd.org/2023-gold-report-2/

(4) Bhakta NR, Bime C, Kaminsky DA, McCormack MC, Thakur N, Stanojevic S, et al. Race and ethnicity in pulmonary function test interpretation: an official American Thoracic Society statement. Am J Respir Crit Care Med. 2023;207(8):978-95.

(5) Rochester CL, Alison JA, Carlin B, Jenkins AR, Cox NS, Bauldoff G, et al. Pulmonary Rehabilitation for Adults with Chronic Respiratory Disease: An Official American Thoracic Society Clinical Practice Guideline. Am J Respir Crit Care Med. 2023;208(4):e7-e26.

(6) Ontario Health (Quality). Transitions between hospital and home: care for people of all ages quality standard [Internet]. Toronto (ON): Queen's Printer for Ontario; 2020 [cited 2022 October 20]. Available from: https://www.hqontario.ca/Portals/0/documents/evidence/quality-standards/qs-transitions-between-hospital-and-home-quality-standard-en.pdf

(7) O'Donnell DE, Aaron S, Bourbeau J, Hernandez P, Marciniuk DD, Balter M, et al. Canadian Thoracic Society recommendations for management of chronic obstructive pulmonary disease – 2007 update. Can Respir J. 2007;14 Suppl B:5b-32b.

(8) National Institute for Health and Care Excellence (NICE). Chronic obstructive pulmonary disease in over 16s: diagnosis and management [Internet]. London, UK: NICE; 2022 [cited 2023 Jul 26]. Available from: https://www.nice.org.uk/guidance/ng115

(9) Gershon AS, Mecredy GC, Ratnasingham S. Chronic obstructive pulmonary disease in Ontario, 1996/97 to 2014/15 [Internet]. Toronto (ON): Institute for Clinical Evaluative Sciences; 2017 [cited 2017 Oct 19]. Available from: https://www.ices.on.ca/Publications/Atlases-and-Reports/2017/COPD

(10) Hospital stays in Canada [Internet]. Toronto (ON): Canadian Institute for Health Information; 2023 [updated 2023 Feb 23; cited 2023 Jul 19]. Available from: https://www.cihi.ca/en/hospital-stays-in-canada

(11) Gershon AS, Guan J, Victor JC, Goldstein R, To T. Quantifying health services use for chronic obstructive pulmonary disease. Am J Respir Crit Care Med. 2013;187(6):596-601.

(12) Ontario Lung Association. Life and economic burden of lung disease in Ontario: 2011 to 2041 [Internet]. Toronto (ON): RiskAnalytica, on behalf of the Ontario Lung Association; 2011 [cited 2017 Jan 5]. Available from: http://www.on.lung.ca/document.doc?id=872

(13) Tunks M, Miller D. Canadian Thoracic Society recommendations for management of chronic obstructive pulmonary disease – 2008 update – highlights for primary care. Can Respir J. 2008;15(4):219.
(14) Department of Veterans Affairs and Department of Defense (VA/DoD). VA/DoD clinical practice guideline for the management of chronic obstructive pulmonary disease [Internet]. Washington (DC): VA/DoD; 2021 [cited 2023 Jul 26]. Available from: https://www.healthquality.va.gov/guidelines/CD/copd/VADoDCOPDCPGFinal508.pdf
(15) Marciniuk DD, Becker EA, Kaminsky DA, McCormack MC, Stanojevic S, Bhakta NR, et al. Effect of race and ethnicity on pulmonary function testing interpretation: an American College of Chest Physicians (CHEST), American Association for Respiratory Care (AARC), American Thoracic Society (ATS), and Canadian Thoracic Society (CTS) evidence review and research statement. Chest. 2023;164(2):461-75.
(16) Kitazawa H, Jiang A, Nohra C, Ota H, Wu JKY, Ryan CM, et al. Changes in interpretation of spirometry by implementing the GLI 2012 reference equations: impact on patients tested in a hospital-based PFT lab in a large metropolitan city. BMJ Open Respir Res. 2022;9(1).
(17) Bowerman C, Bhakta NR, Brazzale D, Cooper BR, Cooper J, Gochicoa-Rangel L, et al. A race-neutral approach to the interpretation of lung function measurements. Am J Respir Crit Care Med. 2023;207(6):768-74.
(18) Culver BH, Graham BL, Coates AL, Wanger J, Berry CE, Clarke PK, et al. Recommendations for a standardized pulmonary function report. An official American Thoracic Society technical statement. Am J Respir Crit Care Med. 2017;196(11):1463-72.
(19) Spruit M, Sing S, Garvey C, ZuWallack R, Nici L, Rochester C, et al. An official American Thoracic Society/European Respiratory Society statement: key concepts and advances in pulmonary rehabilitation. Am J Respir Crit Care Med. 2013;188(8):e13–64.
(20) Coates AL, Graham BL, McFadden RG, McParland C, Moosa D, Provencher S, et al. Spirometry in primary care. Can Respir J. 2013;20(1):13-21.
(21) Gershon AS, Hwee J, Chapman KR, Aaron SD, O'Donnell DE, Stanbrook MB, et al. Factors associated with undiagnosed and overdiagnosed COPD. Eur Respir J. 2016;48(2):561-4.
(22) Gershon AS, Hwee J, Croxford R, Aaron SD, To T. Patient and physician factors associated with pulmonary function testing for COPD: a population study. Chest. 2014;145(2):272-81.
(23) Gershon A, Mecredy GC, Croxford R, To T, Stanbrook MB, Aaron SD. Outcomes of patients with chronic obstructive pulmonary disease diagnosed with or without pulmonary function testing. Can Med Assoc J. 2017;189:E530-8.
(24) Bourbeau J, Bhutani M, Hernandez P, Aaron SD, Beauchesne M-F, B. Kermelly S, et al. 2023 Canadian Thoracic Society Guideline on Pharmacotherapy in Patients with Stable COPD. Can J Resp Crit Care. 2023:1-19.
(25) Bhakta NR, Kaminsky DA, Bime C, Thakur N, Hall GL, McCormack MC, et al. Addressing race in pulmonary function testing by aligning intent and evidence with practice and perception. Chest. 2022;161(1):288-97.
(26) Ontario Health Technology Advisory Committee. OHTAC recommendation: chronic obstructive pulmonary disease (COPD) [Internet]. Toronto (ON): Queen's Printer for Ontario; 2012 Mar [cited 2017 May 26]. Available from: http://www.hqontario.ca/en/mas/pdfs/COPD_OHTACRecommendation_March2012.pdf
(27) Ontario Health Technology Advisory Committee. OHTAC recommendation: specialized community-based care for chronic disease [Internet]. Toronto (ON): Queen's Printer for Ontario; 2012 Nov [cited 2018 Apr 24]. Available from:

http://www.hqontario.ca/Portals/0/Documents/evidence/reports/ohtac-recommendation-specialized-care.pdf
(28) Ontario Palliative Care Network. Key palliative care concepts and terms [Internet]. Toronto (ON): The Network; 2017 [cited 2018 Apr 10]. Available from: https://www.ontariopalliativecarenetwork.ca/sites/opcn/files/KEY_PALLIATIVE_CARE_CONCEPTS_AND_TERMS.pdf
(29) Stone M. Goals of care at the end of life. Proc (Bayl Univ Med Cent). 2001;14(2):134-7.
(30) Health Care Consent Act, S.O. 1996, c. 2, Sched. A (1996).
(31) World Health Organization. Framework for action on interprofessional education and collaborative practice [Internet]. Geneva, Switzerland: World Health Organization Press; 2010 [cited 2023 May]. Available from: https://www.who.int/publications/i/item/framework-for-action-on-interprofessional-education-collaborative-practice
(32) Criner GJ, Bourbeau J, Diekemper RL, Ouellette DR, Goodridge D, Hernandez P, et al. Prevention of acute exacerbations of COPD. Chest. 2015;147(4):894-942.
(33) Effing TW, Vercoulen JH, Bourbeau J, Trappenburg J, Lenferink A, Cafarella P, et al. Definition of a COPD self-management intervention: International Expert Group consensus. Eur Respir J. 2016;48:46-54.
(34) Registered Nurses' Association of Ontario. Strategies to support self-management in chronic conditions: collaboration with clients [Internet]. Toronto (ON): The Association; 2010 [cited 2018 Feb 5]. Available from: http://rnao.ca/sites/rnao-ca/files/Strategies_to_Support_Self-Management_in_Chronic_Conditions_-_Collaboration_with_Clients.pdf
(35) Vozoris NT, Stanbrook MB. Smoking prevalence, behaviours, and cessation among individuals with COPD or asthma. Respir Med. 2011;105:477-84.
(36) Registered Nurses' Association of Ontario. Integrating tobacco interventions into daily practice [Internet]. Toronto (ON): The Association; 2017 [cited 2018 Feb 5]. Available from: http://rnao.ca/sites/rnao-ca/files/bpg/FINAL_TOBACCO_INTERVENTION_WEB.pdf
(37) University of Ottawa Heart Institute. Ottawa model for smoking cessation [Internet]. Ottawa (ON): The Institute; 2018 [cited 2018 Apr]. Available from: https://ottawamodel.ottawaheart.ca/
(38) Centre for Addiction and Mental Health. Training enhancement in applied cessation counselling and health (TEACH) [Internet]. Toronto (ON): The Centre; 2011 [cited 2018 Apr]. Available from: https://www.nicotinedependenceclinic.com/English/teach/Pages/Home.aspx
(39) National Advisory Committee on Immunization. Canadian immunization guide chapter on influenza and statement on seasonal influenza vaccine for 2016-2017 [Internet]. Ottawa (ON): Public Health Agency of Canada; 2016 May [cited 2017 May 29]. Available from: http://www.phac-aspc.gc.ca/naci-ccni/assets/pdf/flu-2016-2017-grippe-eng.pdf
(40) National Advisory Committee on Immunization. A review of the literature of high-dose seasonal influenza vaccine for adults 65 years and older [Internet]. Ottawa (ON): Public Health Agency of Canada; 2016 [cited 2017 May 29]. Available from: http://www.phac-aspc.gc.ca/naci-ccni/assets/pdf/influenza-vaccine-65-plus-vaccin-contre-la-grippe-65-plus-eng.pdf
(41) National Advisory Committee on Immunization. Re-immunization with polysaccharide 23-valent pneumococcal vaccine (Pneu-P-23) [Internet]. Ottawa (ON): Public Health Agency of Canada; 2016 July [cited 2017 June 6]. Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/re-immunization-with-polysaccharide-23-valent-pneumococcal-vaccine-pneu-p-23.html

(42) National Advisory Committee on Immunization. Canada communicable disease report: statement on the use of conjugate pneumococcal vaccine-13 valent in adults (PNEU-C-13) [Internet]. Ottawa (ON): Public Health Agency of Canada; 2013 [cited 2017 Jun 6]. Available from: http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/13vol39/acs-dcc-5/assets/pdf/13vol39-acs-dcc5-eng.pdf

(43) Public Health Agency of Canada. Canadian immunization guide: part 4 – active vaccines – pneumococcal vaccine [Internet]. Ottawa (ON): Government of Canada; 2016 [cited 2017 Aug]. Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-4-active-vaccines/page-16-pneumococcal-vaccine.html

(44) National Advisory Committee on Immunization (NACI). Guidance on COVID-19 vaccine booster doses: initial considerations for 2023 [Internet]. Ottawa (ON): Public Health Agency of Canada; 2023. Available from: https://www.canada.ca/content/dam/phac-aspc/documents/services/immunization/national-advisory-committee-on-immunization-naci/guidance-covid-19-vaccine-booster-doses-initial-considerations-2023/guidance-covid-19-vaccine-booster-doses-initial-considerations-2023.pdf

(45) National Advisory Committee on Immunization (NACI). Guidance on additional COVID-19 booster dose in the spring of 2023 for individuals at high risk of severe illness due to COVID-19 [Internet]. Ottawa (ON): Public Health Agency of Canada; 2023. Available from: https://www.canada.ca/content/dam/phac-aspc/documents/services/publications/vaccines-immunization/national-advisory-committee-immunization-guidance-additional-covid-19-booster-dose-spring-2023-individuals-high-risk-severe-illness-due-covid-19/statement.pdf

(46) COPD and pertussis: when a cough becomes downright dangerous [Internet]. Buffalo (NY): American Lung Association; 2022 [cited 2023 Jul 26]. Available from: https://www.lung.org/blog/copd-pertussis-cough#:~:text=Becoming%20sick%20with%20pertussis%20can,be%20and%20feel%20sicker%2C%20longer.

(47) Aris E, Harrington L, Bhavsar A, Simeone JC, Ramond A, Papi A, et al. Burden of pertussis in COPD: a retrospective database study in England. COPD. 2021;18(2):157-69.

(48) Centers for Disease Control and Prevention (CDC). Use of tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccines: updated recommendations of the Advisory Committee on Immunization Practices – United States, 2019 [Internet]. Atlanta (GA): CDC; 2020 [cited 2023 Jul 26]. Available from: https://www.cdc.gov/mmwr/volumes/69/wr/mm6903a5.htm

(49) Yang YW, Chen YH, Wang KH, Wang CY, Lin HW. Risk of herpes zoster among patients with chronic obstructive pulmonary disease: a population-based study. CMAJ. 2011;183(5):E275-80.

(50) Ontario Health Technology Advisory Committee. Pulmonary rehabilitation in Ontario: OHTAC recommendation [Internet]. Toronto (ON): Queen's Printer for Ontario; 2015 Mar [cited 2017 March 15]. Available from: http://www.hqontario.ca/Portals/0/Documents/evidence/reports/recommendation-pulmonary-rehab-ontario-1503-en.pdf

(51) Bowen JM, Campbell K, Sutherland S, Bartlett A, Brooks D, Qureshi R, et al. Pulmonary rehabilitation in Ontario: a cross-sectional survey. Ont Health Technol Assess Ser. 2015;15(8):1-67.

(52) Giacomini M, Dejean D, Simeonov D, Smith A. Experiences of living and dying with COPD: a systematic review and synthesis of the qualitative empirical literature. Ont Health Technol Assess Ser. 2012;12(13):1-47.

(53) Puhan MA, Gimeno-Santos E, Cates CJ, Troosters T. Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease. Cochrane Database Syst Rev. 2016;12(12):Cd005305.
(54) Lindenauer PK, Stefan MS, Pekow PS, Mazor KM, Priya A, Spitzer KA, et al. Association between initiation of pulmonary rehabilitation after hospitalization for COPD and 1-year survival among medicare beneficiaries. JAMA. 2020;323(18):1813-23.
(55) Canadian Hospice Palliative Care Association. A model to guide hospice palliative care [Internet]. Ottawa (ON): The Association; 2013 [cited 2018 Apr 27]. Available from: http://www.chpca.net/media/319547/norms-of-practice-eng-web.pdf
(56) Registered Nurses' Association of Ontario. End-of-life care during the last days and hours [Internet]. Toronto (ON): The Association; 2011 [cited 2018 Apr 27]. Available from: http://rnao.ca/bpg/guidelines/endoflife-care-during-last-days-and-hours
(57) McCusker M, Ceronsky L, Crone C, Epstein H, Greene B, Halvorson J, et al. Palliative care for adults [Internet]. Bloomington (MN): Institute for Clinical Systems Improvement; 2013 [cited 2018 Apr 27]. Available from: https://www.icsi.org/guidelines__more/catalog_guidelines_and_more/catalog_guidelines/catalog_palliative_care_guidelines/palliative_care/
(58) Ho F, Lau F, Downing MG, Lesperance M. A reliability and validity study of the Palliative Performance Scale. BMC Palliat Care. 2008;7(1):10.
(59) Assistive Devices Program of the Ministry of Health and Long-Term Care. Home oxygen therapy policy and administration manual [Internet]. Toronto (ON): The Ministry; 2021 [cited 2023 Jul 19]. Available from: http://www.health.gov.on.ca/en/pro/programs/adp/policies_procedures_manuals/docs/home_oxygen_manual.pdf
(60) Statistics Canada. Canadian community health survey [Internet]. Ottawa (ON): Statistics Canada; 2017 [cited 2018 Apr]. Available from: https://www.canada.ca/en/health-canada/services/food-nutrition/food-nutrition-surveillance/health-nutrition-surveys/canadian-community-health-survey-cchs.html
(61) Seow H, Bainbridge D, Brouwers M, Pond G, Cairney J. Validation of a modifed VOICES survey to measure end-of-life care quality: the CaregiverVoice survey. BMC Palliat Care. 2017;16:44.
(62) Diabetes Canada. 2018 Clinical practice guidelines [Internet]. Toronto (ON): Diabetes Canada; 2018 [cited 2023 May 10]. Available from: https://guidelines.diabetes.ca/docs/CPG-2018-full-EN.pdf
(63) Management of Substance Use Disorders Work Group. VA/DoD clinical practice guideline for the management of substance use disorders [Internet]. Washington (DC): Department of Veterans Affairs, Department of Defense; 2015 [cited 2023 May 10]. Available from: https://www.healthquality.va.gov/guidelines/MH/sud/VADoDSUDCPGRevised22216.pdf
(64) National Institute for Health and Clinical Excellence. Alcohol use disorders: diagnosis, assessment and management of harmful drinking and alcohol dependence [Internet]. London, United Kingdom: The Institute; 2011 [updated 2014 Oct; cited 2023 May]. Available from: https://www.nice.org.uk/guidance/CG115/
(65) Ministry of Health, Ministry of Long-Term Care. French language health services: the French Language Services Act, 1986 (FLSA) [Internet]. Toronto (ON): Queen's Printer for Ontario; 2021 [cited 2023 May]. Available from: https://www.health.gov.on.ca/en/public/programs/flhs/flsa.aspx

(66) Keleher H, Armstrong R. Evidence-based mental health promotion resource. Report for the Department of Human Services and VicHealth, Melbourne [Internet]. Melbourne, Australia: State of Victoria, Department of Human Services; 2006 [cited 2023 May]. Available from: https://www2.health.vic.gov.au/Api/downloadmedia/%7BC4796515-E014-4FA0-92F6-853FC06382F7%7D

(67) Health Quality Ontario. Taking stock: a report on the quality of mental health and addictions services in Ontario [Internet]. Toronto (ON): Queen's Printer for Ontario; 2015 [cited 2023 May]. Available from: https://www.hqontario.ca/Portals/0/Documents/pr/theme-report-taking-stock-en.pdf

(68) Mental Health Commission of Canada. Recovery [Internet]. Ottawa (ON): The Commission; 2017 [updated 2017; cited 2023 May]. Available from: http://www.mentalhealthcommission.ca/English/focus-areas/recovery

(69) Mental Health Commission of Canada. Changing directions, changing lives: the mental health strategy for Canada. Calgary (AB): The Commission; 2012.

(70) Ministry of Children, Community and Social Services. Ontario's quality standards framework: a resource guide to improve the quality of care for children and young persons in licensed residential settings [Internet]. Toronto (ON): Queen's Printer for Ontario; 2020 [cited 2023 May]. Available from: http://www.children.gov.on.ca/htdocs/English/documents/childrensaid/MCCSS-Residential-ResourceGuide.pdf

(71) Cunningham T, Ford E, Croft J, Merrick M, Rolle I, Giles W. Sex-specific relationships between adverse childhood experiences and chronic obstructive pulmonary disease in five states. Int J Chron Obstruct Pulmon Dis. 2014;9(1):1033-43.

About Us

We are an agency created by the Government of Ontario to connect, coordinate and modernize our province's health care system. We work with partners, providers and patients to make the health system more efficient so everyone in Ontario has an opportunity for better health and wellbeing. We work to enhance patient experience, improve population health, enhance provider experiences, improve value and advance health equity.

Equity, Inclusion, Diversity, and Anti-Racism

Ontario Health is committed to advancing equity, inclusion and diversity and addressing racism in the health care system. As part of this work, Ontario Health has developed an Equity, Inclusion, Diversity and Anti-Racism Framework, which builds on existing legislated commitments and relationships and recognizes the need for an intersectional approach.

Unlike the notion of equality, equity is not about sameness of treatment. It denotes fairness and justice in process and in results. Equitable outcomes often require differential treatment and resource redistribution to achieve a level playing field among all individuals and communities. This requires recognizing and addressing barriers to opportunities for all to thrive in our society.

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