QUALITY STANDARDS

Chronic Obstructive Pulmonary Disease

Technical Specifications

2023 UPDATE

Ontario Health

Table of Contents

How to Use the Technical Specifications

This document is meant to provide supplementary technical specifications to support implementation of the *Chronic Obstructive Pulmonary Disease* quality standard. Care for people with chronic obstructive pulmonary disease (COPD) is a critical issue, and there are significant gaps and variations in the quality of care that people with COPD receive in Ontario. Recognizing this, Ontario Health released the quality standard to identify opportunities that have a high potential for quality improvement.

This document is intended for use by those looking to implement the COPD quality standard, including health care professionals working in regional or local roles.

This document has dedicated sections for each of the 2 types of measurement in the quality standard:

- Provincial measurement: how we can monitor the progress being made to improve care at the provincial level using provincial data sources
- Local measurement: what you can do to assess the quality of care that you provide locally

Measurement to Support Improvement

This document accompanies Ontario Health's COPD quality standard. Early in the development of each quality standard, several performance indicators are chosen to monitor the progress being made to improve care for people with COPD. These indicators measure the overarching goals of the quality standard, so that every statement in the standard aids in achieving the standard's overall goals.

The document includes information about the definitions and technical details of the indicators listed below:

- 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
- 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

Indicators are categorized as:

- Provincially measurable (well defined or validated data sources are available)
- Locally measurable (the indicator is not well defined, and data sources do not currently exist to measure it consistently across providers and at the system level)

Additional information on measuring indicators can be found in the Quality Standards Measurement Guide. This manual also includes descriptions for data sources that can be used to support quality standards indicators that are measured consistently across providers, across health care sectors, and across the province.

For more information on statement-specific indicators, please refer to Appendix 2 in the quality standard.

Quality Standard Scope

This quality standard addresses care for people with 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, home 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.

This quality standard includes 14 quality statements. They address areas identified by Ontario Health's COPD Quality Standard Advisory Committee as having high potential for improving the quality of care in Ontario for people with COPD.

Cohort Identification

For measurement at the provincial level, people with COPD can be identified using administrative data. For local measurement, people with COPD can be identified using local data sources (such as electronic medical records or clinical patient records).

Cohort Identification Using Administrative Data

To identify people with COPD for the provincially measurable indicators in this quality standard, the Discharge Abstract Database (DAD), the National Ambulatory Care Reporting System (NACRS), and the Ontario Health Insurance Plan (OHIP) Claims Database can be used. Please refer to the Measurement Guide for more information on these databases.

To identify people who had a diagnosis of COPD during a hospitalization, records from DAD and day surgery records from NACRS can be used. The following are the inclusions from the *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Canada* (ICD-10-CA):

- J41: Simple and mucopurulent chronic bronchitis
- J42: Unspecified chronic bronchitis
- J43: Emphysema
- J44: Other chronic obstructive pulmonary disease

To identify people who had a diagnosis of COPD during a primary care visit (for the provincially measurable indicators in this quality standard), OHIP claims records can be used. The following are the inclusions from the *International Statistical Classification of Diseases, Injuries, and Causes of Death, Ninth Revision* (ICD-9):

- 491: Chronic bronchitis
- 492: Emphysema
- 496: Chronic airway obstruction, not elsewhere classified

There are 2 case definitions for identifying COPD in health administrative data in Ontario, adapted from those by Gershon et al: the sensitive COPD cohort and the specific COPD cohort. Sensitivity and specificity are documented in the original research article.

1. A person is included in the *sensitive* COPD cohort if they were aged 35 years or older and had at least 1 hospital or physician visit with a COPD diagnosis in any diagnosis field.

2. A person is included in the *specific* COPD cohort if they were aged 35 years or older and had at least 1 hospital visit, or 3 or more primary care visits in 2 years with a COPD diagnosis in any diagnosis field.

The date of diagnosis is the date of hospital or physician visit at the first documentation of COPD diagnosis, whichever comes earlier. Excluded are people under 35 years of age, those who had a lung transplant prior to their COPD diagnosis, and those living outside of Ontario. Once a person is identified as having COPD according to either of the above case definitions, they are considered prevalent until death or emigration from Ontario, whichever comes first. Analyses can be conducted using either the sensitive or specific case definition of COPD.

Equity Considerations

Consider collecting data and measuring indicators using equity stratifications that are relevant and appropriate for your population, such as patient socioeconomic and demographic characteristics. These may include age, gender, income, or race and ethnicity. Please refer to *Appendix 4, Values and Guiding Principles,* in the quality standard for additional equity considerations.

Indicators That Can Be Measured Using Provincial Data

The COPD Quality Standard Advisory Committee identified overarching goals for this quality standard. These have been mapped to indicators that may be used to assess quality of care provincially. The following indicators are potentially measurable in Ontario's health care system:

- 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:
  - Unscheduled emergency department visits
  - Nonelective hospitalizations
- Percentage of people with COPD who smoke cigarettes daily

Methodological details are described in the tables below.

Table 1: Percentage of people with COPD whose diagnosis is confirmed by spirometry

General Description	
Indicator description	Name: Percentage of people with COPD whose diagnosis is confirmed by spirometry Directionality: Higher is better
Measurability	Measurable at the provincial level
Dimensions of quality	Effective, equitable
Quality statement alignment	Quality Statement 1: Diagnosis Confirmed With Spirometry
Definition and Source Information	
Calculation: General	**Denominator** Number of people with an incident COPD diagnosis in the fiscal year of interest (see *Cohort Identification*) *Inclusions* Age ≥ 35 y *Exclusions* Records without a valid health insurance number Invalid date of birth, invalid age Records without an Ontario residence Invalid OHIP service date, DAD admission, and discharge dates **Numerator** Number of people in the denominator who received spirometry testing from 1 year before the date of COPD diagnosis to the date of COPD diagnosis (see *Cohort Identification*) *OHIP fee schedule codes* J301: Pulmonary Function Testing with Permanent Record Vital Capacity J304: Pulmonary Function Flow Volume Loop – Standard Lung Mechanics J307: Pulmonary Function Testing – Functional Residual Capacity J310: Pulmonary Function Testing – Single Breath Diffusing Capacity J324: Pulmonary Function Testing – Repeat J301 After Bronchodilator J327: Pulmonary Function Testing – Repeat J304 After Bronchodilator

	Exclusions Invalid OHIP service date, OHIP fee code **Method** Numerator ÷ Denominator × 100% **Data sources** DAD, NACRS, OHIP, RPDB
Additional Information	
Limitations	Dependent on coding accuracy (e.g., ICD-10-CA codes)
Comments	The sensitive or specific definition of the COPD cohort can be used

Abbreviations: COPD, chronic obstructive pulmonary disease; DAD, Discharge Abstract Database; ICD-10-CA, International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Canada; NACRS, National Ambulatory Care Reporting System; OHIP, Ontario Health Insurance Plan; RPDB, Registered Persons Database.

Table 2: Percentage of people hospitalized for COPD who had an in-person follow-up assessment with a physician within 7 days of discharge

General Description	
Indicator description	Name: Percentage of people hospitalized for COPD who had an in--person follow-up assessment with a physician within 7 days of discharge Directionality: Higher is better
Measurability	Measurable at the provincial level
Dimension of quality	Effective, timely, patient-centred
Quality statement alignment	Quality Statement 11: Follow-Up After Hospitalization for an Acute Exacerbation of COPD
Definition and Source Information	
Calculation: General	**Denominator** Number of people in the fiscal year of interest with hospitalizations that list COPD as the most responsible or contributing diagnosis (ICD-10-CA codes J41, J42, J43, J44) *Inclusions* Age ≥ 35 y *Exclusions* Records without a valid health insurance number Invalid date of birth, invalid age Records without an Ontario residence Invalid DAD admission and discharge dates **Numerator** Number of people in the denominator with physician visits 0 to 7 days after discharge from their COPD hospitalization. Stratify by physician specialty. *Inclusions* Ontario physician visits taking place in office, at home, or in long-term care. Physician visits taking place by phone may also included during the years affected by the COVID-19 pandemic. *Exclusions* Invalid OHIP service date, OHIP fee code **Method** Numerator ÷ Denominator × 100%

	Data sources DAD, OHIP, RPDB
Additional Information	
Limitations	Dependent on coding accuracy (e.g., ICD-10-CA codes)
Comments	The sensitive or specific definition of the COPD cohort can be used. Physician visits by phone were included to account for restricted access to in-person visits during the COVID-19 pandemic.

Abbreviations: COPD, chronic obstructive pulmonary disease; DAD, Discharge Abstract Database; ICD-10-CA, International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Canada; NACRS, National Ambulatory Care Reporting System; OHIP, Ontario Health Insurance Plan; RPDB, Registered Persons Database.

Table 3: Percentage of people with COPD who have filled a prescription for long-acting bronchodilator therapy (measurable for people aged 65 years and older only)

General Description	
Indicator description	Name: Percentage of people with COPD who have filled a prescription for long-acting bronchodilator therapy Directionality: Higher is better
Measurability	Measurable at the provincial level
Dimension of quality	Efficient, patient-centred, equitable
Quality statement alignment	Quality Statement 6: Pharmacological Management of Stable COPD
Definition and Source Information	
Calculation: General	**Denominator** Number of prevalent people in the COPD cohort in the fiscal year of interest (see *Cohort Identification*) *Inclusions* Age ≥ 65 y *Exclusions* Records without a valid health insurance number Invalid date of birth, invalid age Records without an Ontario residence **Numerator** Number of people in the denominator who have filled a prescription for long-acting bronchodilator therapy in the past year *Included COPD medications* LAMA LABA Dual LAMA/LABA combinations **Method** Numerator ÷ Denominator × 100% **Data sources** DAD, NACRS, OHIP, ODB, RPDB

Additional Information	
Limitations	Measurable mostly only for people aged 65 years and older because of ODB data limitations
Comments	The sensitive or specific definition of the COPD cohort can be used

Abbreviations: COPD, chronic obstructive pulmonary disease; DAD, Discharge Abstract Database; LABA, long-acting beta-2 agonist; LAMA, long-acting anti-muscarinic antagonist; NACRS, National Ambulatory Care Reporting System; ODB, Ontario Drug Benefit Database; OHIP, Ontario Health Insurance Plan; RPDB, Registered Persons Database.

Table 4: Percentage of people with COPD with 1 or more unplanned acute care visits for COPD in each year

General Description	
Indicator description	Name: Percentage of people with COPD with 1 or more unscheduled emergency department visits for COPD in each year Percentage of people with COPD with 1 or more nonelective hospitalizations for COPD in each year Directionality: Lower is better
Measurability	Measurable at the provincial level
Dimension of quality	Efficient, effective, safe, equitable
Quality statement alignment	Quality Statement 3: Goals of Care and Individualized Care Planning Quality Statement 6: Pharmacological Management of Stable COPD Quality Statement 10: Management of Acute Exacerbations of COPD
Definition and Source Information	
Calculation: General	**Denominator** Number of people prevalent in the COPD cohort in the fiscal year of interest (see *Cohort Identification*) *Inclusions* Age ≥ 35 y *Exclusions* Records without a valid health insurance number Invalid date of birth, invalid age Records without an Ontario residence Invalid DAD admission dates or NACRS registration dates **Numerator** Number of people in the denominator with at least 1 unplanned acute care visit for COPD in the fiscal year of interest. Stratify by unscheduled emergency department visits or nonelective hospitalizations **Method** Numerator ÷ Denominator × 100% **Data sources**

	DAD, NACRS, OHIP, RPDB
Additional Information	
Limitations	Dependent on coding accuracy (e.g., ICD-10-CA codes)
Comments	The sensitive or specific definition of the COPD cohort can be used

Abbreviations: COPD, chronic obstructive pulmonary disease; DAD, Discharge Abstract Database; ICD-10-CA, International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Canada; NACRS, National Ambulatory Care Reporting System; OHIP, Ontario Health Insurance Plan; RPDB, Registered Persons Database.

Table 5: Percentage of people with COPD who smoke cigarettes daily

General Description	
Indicator description	Name: Percentage of people with COPD who smoke cigarettes daily Directionality: Lower is better
Measurability	Measurable at the provincial level
Dimension of quality	Effective
Quality statement alignment	Quality Statement 3: Goals of Care and Individualized Care Planning Quality Statement 4: Education and Self-Management Quality Statement 5: Promoting Smoking Cessation Quality Statement 9: Pulmonary Rehabilitation
Definition and Source Information	
Calculation: General	**Denominator** People who received the CCHS survey who responded "1: Yes" to question CCC_Q030: Do you have chronic bronchitis, emphysema or chronic obstructive pulmonary disease or COPD? **Numerator** People who responded "1: Daily or 2: Occasionally" to question SMK_Q005: At the present time, do you smoke cigarettes every day, occasionally or not at all? **Method** Numerator ÷ Denominator × 100% **Data sources** CCHS, Statistics Canada
Additional Information	
Limitations	Because of substantial changes to its survey methodology, Statistics Canada does not recommend making comparisons of the redesigned 2015 cycle of the CCHS with previous cycles. Because this indicator relies on self-reported data, the true rate might be higher or lower. The 2023 CCHS covers the population aged 18 years and older living in Canada. Excluded from coverage are the following: persons living on reserves and other Aboriginal settlements in the provinces; full-time members of the Canadian Forces; the institutionalized population; and persons living in the Quebec health regions of Région du Nunavik and Région des

Terres-Cries-de-la-Baie-James. The exclusions represent less than 3% of the Canadian population aged 18 years and older.

Abbreviations: CCHS, Canadian Community Health Survey; COPD, chronic obstructive pulmonary disease.

Indicators That Can Be Measured Using Only Local Data

You might want to assess the quality of care you provide to your patients with COPD. You might also want to monitor your own quality improvement efforts. It could be possible to do this using your own clinical records, or you might need to collect additional data. We recommend the following potential indicators, some of which cannot be measured provincially using currently available 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

Potential data source(s): patient surveys collected in electronic medical records; COPD Assessment Test (CAT) where applicable

- Percentage of people with moderate to severe COPD who have access to a pulmonary rehabilitation program. Stratify by:
  - Community-based rehabilitation
  - Inpatient rehabilitation

Potential data source(s): physician reports (based on their knowledge of services available); patient surveys collected in electronic medical records

Looking for More Information?

Visit hqontario.ca or contact us at QualityStandards@OntarioHealth.ca if you have any questions or feedback about this quality standard.

Ontario Health
500–525 University Avenue
Toronto, Ontario
M5G 2L3

Toll Free: 1-877-280-8538
TTY: 1-800-855-0511
Email: QualityStandards@OntarioHealth.ca
Website: hqontario.ca

ISBN 978-1-4868-7315-9 (PDF)