QUALITY STANDARDS

Hypertension

Technical Specifications

2024

Ontario Health

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How to Use the Technical Specifications

This document provides technical specifications to support the implementation of the *Hypertension* quality standard. Care for people with hypertension is a critical issue, and there are significant gaps and variations in the quality of care that people with hypertension 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 *Hypertension* quality standard, including clinicians working in regional or local roles.

This document has dedicated sections to describe the following:

- Indicators that can be used to measure progress toward the overarching goals of the quality standard as a whole
- Statement-specific indicators that can be used to measure improvement for each quality statement within the quality standard

Indicators may be provincially or locally measurable:

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

The following tools and resources are provided as suggestions to assist in the implementation of the *Hypertension* quality standard:

- The Getting Started Guide outlines the process for using quality standards as a resource to deliver high-quality care; it contains evidence-based approaches, as well as useful tools and templates to implement change ideas at the practice level
- Our Spotlight Report highlights examples from the field to help you understand what successful quality standard implementation looks like

Measurement to Support Improvement

This document accompanies Ontario Health's *Hypertension* quality standard. The Hypertension Quality Standard Advisory Committee identified 5 overarching indicators to monitor the progress being made to improve care for adults with hypertension in Ontario. Four overarching indicators are provincially measurable (well defined or validated data sources are available), and 1 is locally measurable (data sources do not currently exist to measure this indicator consistently across health care teams and at the system level).

The *Hypertension* quality standard also includes numerous statement-specific indicators that can be used to measure improvement for each quality statement in the quality standard.

Additional information on measuring indicators can be found in the *Quality Standards Measurement Guide*. The measurement guide also includes descriptions for data sources that can be used to support quality standard indicators that are measured consistently across health care teams, health care sectors, and the province.

Equity Considerations

Ontario Health is committed to promoting health equity and reducing disparities, and encourages 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, income, region or geography, education, language, race and ethnicity, gender, and sex. Please refer to Appendix 3, Values and Guiding Principles, in the quality standard for additional equity considerations.

Quality Standard Scope

This quality standard addresses care for adults aged 18 years and older who have been diagnosed with hypertension or who are at risk of developing hypertension. The quality standard focuses on the prevention, screening, assessment, diagnosis, and management of hypertension in primary care, and in long-term care and other home and community care settings. Quality statements may also be applicable to specialist care settings, where appropriate. Quality statements may apply in pregnancy; however, this quality standard does not directly address or include special considerations for the diagnosis and management of hypertension during pregnancy or postpartum.

The quality standard includes 7 quality statements. They address areas identified by the Hypertension Quality Standard Advisory Committee as having high potential for improving the quality of care in Ontario for people with hypertension.

Cohort Identification

For measurement at the provincial level, people with hypertension can be identified using administrative data. For local measurement, people with hypertension 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 hypertension for the provincially measurable indicators in this quality standard, the Discharge Abstract Database, the National Ambulatory Care Reporting System, the Ontario Health Insurance Plan (OHIP) Claims Database, the Ontario Drug Benefit (ODB) Database, and the Registered Persons Database can be used. Please refer to the measurement guide for more information on these databases.

Diagnosis Codes

To identify people who had a diagnosis of hypertension in an inpatient setting, records from the Discharge Abstract Database 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):

- I10: Essential (primary) hypertension
- I11: Hypertensive heart disease
- I12: Hypertensive chronic kidney disease
- I13: Hypertensive heart and chronic kidney disease
- I15: Secondary hypertension

Records in the Discharge Abstract Database with the following ICD-10-CA codes for gestational hypertension should be **excluded** from this cohort, because they are outside the scope of this quality standard:

- O10: Pre-existing hypertension complicating pregnancy, childbirth, and puerperium
- O11: Pre-existing hypertension with pre-eclampsia
- O12: Gestational edema and proteinuria without hypertension
- O13: Gestational hypertension without significant proteinuria
- O14: Pre-eclampsia
- O15: Eclampsia
- O16: Unspecified maternal hypertension

To identify people who received a diagnosis of hypertension during a primary care visit, records from the OHIP Claims Database can be used. The following are the inclusions from the *International Statistical Classification of Diseases, Injuries, and Causes of Death, Ninth Revision*:

- 401: Essential hypertension
- 402: Hypertensive heart disease
- 403: Hypertensive chronic kidney disease
- 404: Hypertensive heart and chronic kidney disease
- 405: Secondary hypertension

Inclusion Criteria

The hypertension cohort includes patients diagnosed in both primary care and inpatient care settings, as adapted from the criteria described by Tu et al and confirmed by the Hypertension Quality Standard Advisory Committee. A person is included in the hypertension cohort if they had:

- At least 1 hospitalization with hypertension identified in any diagnosis field, excluding gestational hypertension diagnoses, or
- Two or more primary care visits with a hypertension diagnosis within 2 years

The date of diagnosis is the date of first hospitalization or first primary care visit in which hypertension is documented, whichever occurs earlier. Once a person has been identified as having hypertension according to either of the case definitions above, they are considered prevalent until death or emigration from Ontario, whichever comes first.

Age Range

The cohort includes people aged 18 years and older, in alignment with the scope of the *Hypertension* quality standard.

Overarching Indicators That Can Be Measured Using Provincial Data

Indicator 1: Percentage of people diagnosed with hypertension for at least 1 year who experience 1 or more stroke events in a given year

Description

Indicator name: Percentage of people diagnosed with hypertension for at least 1 year who experience 1 or more stroke events in a given year

Directionality: Lower is better

Measurability: Measurable at the provincial level

Dimensions of quality: effective, efficient, equitable

Quality statement alignment:

- All quality statements

Calculation

Denominator

Total number of adults prevalent in the hypertension cohort in the year of interest
(see Cohort Identification)

Inclusions

- People aged ≥ 18 years and ≤ 105 years
- People diagnosed with hypertension for at least 1 year

Exclusions

- Records without a valid health insurance number
- Records with an invalid date of birth or invalid age
- Records without an Ontario residence
- Records for which the date of hypertension diagnosis cannot be determined because of invalid admission dates in the Discharge Abstract Database or invalid OHIP service dates
- Records with a date of hypertension diagnosis that occurs less than 1 year before the start of the year of interest

Numerator

Number of people in the denominator who experience 1 or more stroke events in the year of interest

Inclusions

At least 1 hospitalization record in the Discharge Abstract Database or 1 visit record in the National Ambulatory Care Reporting System with any of the following ICD-10-CA diagnosis codes in any diagnosis field: G08.X, G45.X, I60.X, I61.X, I63.X, I64.X

Exclusions

All records with the diagnosis code G45.4 in any diagnosis field

Method

Numerator ÷ Denominator × 100%

Data Sources

Discharge Abstract Database, National Ambulatory Care Reporting System, OHIP Claims Database, Registered Persons Database

Limitations

- Does not account for a person's history of stroke
- Does not account for the severity or type of stroke

Comments

- Includes planned and unplanned emergency department visits and hospitalizations
- Inclusion criteria focus on people who have had hypertension for an extended period (i.e., prevalent in the hypertension cohort for 1 year or longer)

Indicator 2: Percentage of people diagnosed with hypertension for at least 1 year who experience 1 or more cardiovascular disease events in a given year

Description

Indicator name: Percentage of people diagnosed with hypertension for at least 1 year who experience 1 or more cardiovascular disease events in a given year

Directionality: Lower is better

Measurability: Measurable at the provincial level

Dimensions of quality: effective, efficient, equitable

Quality statement alignment:

- All quality statements

Calculation

Denominator

Total number of adults prevalent in the hypertension cohort in the year of interest
(see Cohort Identification)

Inclusions

- People aged ≥ 18 years and ≤ 105 years
- People diagnosed with hypertension for at least 1 year

Exclusions

- Records without a valid health insurance number
- Records with an invalid date of birth or invalid age
- Records without an Ontario residence
- Records for which the date of hypertension diagnosis cannot be determined because of invalid admission dates in the Discharge Abstract Database or invalid OHIP service dates

Numerator

Number of people in the denominator who experience 1 or more cardiovascular disease events in the year of interest. Stratify by:

- Cardiac disease events
- All cardiovascular disease events (except hypertension itself)

Inclusions

At least 1 hospitalization record in the Discharge Abstract Database or 1 visit record in the National Ambulatory Care Reporting System with any of the following ICD-10-CA diagnosis codes:

- Cardiac diseases
  - Ischemic heart disease (including acute myocardial infarction): I20.X, I21.X, I22.X, I23.X, I24.X, or I25.X in any diagnosis field
  - Heart failure: I50.X in any diagnosis field; I40.X, I41.X, I42.X, or I43.X in the main diagnosis field
- Other cardiovascular diseases (excluding hypertension): I00 to I99 (excluding I10 to I15) in any diagnosis field

Method

Numerator ÷ Denominator × 100%

Data Sources

Discharge Abstract Database, National Ambulatory Care Reporting System, OHIP Claims Database, Registered Persons Database

Limitations

- Does not account for a person's history of cardiovascular disease
- Does not account for the severity of the cardiovascular disease

Comments

- Inclusion criteria focus on patients who have had hypertension for an extended period (i.e., prevalent in the hypertension cohort for 1 year or longer)
- The diagnosis codes for heart failure were adapted from those used in the *Quality-Based Procedures: Clinical Handbook For Heart Failure (Acute and Postacute)*

Indicator 3: Percentage of people with hypertension who have 1 or more unplanned acute care visits for hypertension in the past year

Description

Indicator name: Percentage of people with hypertension who have 1 or more unplanned acute care visits for hypertension in the past year

Directionality: Lower is better

Measurability: Measurable at the provincial level

Dimensions of quality: effective, efficient, timely, patient-centred

Quality statement alignment:

- All quality statements

Calculation

Denominator

Total number of adults prevalent in the hypertension cohort in the year of interest
(see Cohort Identification)

Inclusions

- People aged ≥ 18 years and ≤ 105 years

Exclusions

- Records without a valid health insurance number
- Records with an invalid date of birth or invalid age
- Records without an Ontario residence
- Records for which the date of hypertension diagnosis cannot be determined because of invalid admission dates in the Discharge Abstract Database or invalid OHIP service dates

Numerator

Number of people in the denominator who have 1 or more unplanned acute care visits for hypertension in the year of interest. Stratify by:

- Unplanned emergency department visits
- Nonelective hospitalizations

Inclusions

- Unscheduled emergency department visits (National Ambulatory Care Reporting System records with unplanned emergency flag = 1)
- Nonelective hospitalizations (Discharge Abstract Database records with admit type = U)

- At least 1 hospitalization record in the Discharge Abstract Database or 1 visit record in the National Ambulatory Care Reporting System with any of the following ICD-10-CA diagnosis codes in any diagnosis field: I10 to I15

Method

Numerator ÷ Denominator × 100%

Data Sources

Discharge Abstract Database, National Ambulatory Care Reporting System, OHIP Claims Database, Registered Persons Database

Comments

Inclusion of any diagnosis type may result in the inclusion of emergency department visits or hospitalizations that are indirectly related to a hypertension diagnosis. To focus on acute care visits directly related to hypertension, include only visits for which hypertension was the main diagnosis.

Indicator 4: Percentage of people with hypertension who are persistent in taking their blood pressure medications

Description

Indicator name: Percentage of people with hypertension who are persistent in taking their blood pressure medications (measurable only for people aged 65 years and older)

Directionality: Higher is better

Measurability: Measurable at the provincial level

Dimensions of quality: effective, efficient, patient-centered

Quality statement alignment:

- Quality Statement 6: Monitoring and Follow-up After a Confirmed Diagnosis
- Quality Statement 7: Improving Adherence to Medications

Calculation

Denominator

Total number of adults aged 65 years and older prevalent in the hypertension cohort in the year of interest (most adults in that age group are eligible for the Ontario Drug Benefit Program)

Inclusions

- People aged ≥ 65 years and ≤ 105 years
- Records with at least 1 ODB claim for blood pressure medication (as described in Hypertension Canada's 2020 Comprehensive Guidelines for the Prevention, Diagnosis, Risk Assessment, and Treatment of Hypertension in Adults and Children) in the year of interest, including a 90-day look-back period before the start of the year

Exclusions

- Records without a valid health insurance number
- Records with an invalid date of birth or invalid age
- Records without an Ontario residence
- Records with no ODB claims for blood pressure medication in the year of interest and 90 days before the start of the year

Numerator

Number of people in the denominator who have blood pressure medication claims covering 80% or more of the year of interest (i.e., 292 days or more)

Inclusions

- Records with ODB claims for blood pressure medication covering 80% of more of the year of interest

Method

Numerator ÷ Denominator × 100%

Data Sources

Discharge Abstract Database, National Ambulatory Care Reporting System, ODB Database, OHIP Claims Database, Registered Persons Database

Limitations

- The ODB Database is limited mostly to people aged 65 years and older. The list of Drug Identification Numbers for blood pressure medication might not be fully comprehensive
- The denominator is limited to people aged 65 years and older with hypertension and any blood pressure medication claims through the ODB Program; it assumes that those excluded from the denominator did not initiate or were not prescribed blood pressure medication. Those who do not appear to be persistent in taking their blood pressure medication based on ODB claims could be obtaining prescriptions elsewhere. Other sources of prescriptions for blood pressure medication (including administrative data sources, medical records, and local pharmacy data) are needed for a complete review of a person's medication history
- This measure is an overall summary of a person's claims for blood pressure medication in a given year and does not distinguish by individual medication or account for the prescribed dosage and regimen

Comments

The blood pressure medication Drug Identification Number list is adapted from the *2019 AHFS Pharmacologic-Therapeutic Classification System*, section 24:00, Cardiovascular Drugs, as well as the Ontario Drug Benefit Formulary/Comparative Drug Index from the Ministry of Health.

Overarching Indicators That Can Be Measured Using Only Local Data

You might want to assess the quality of care you provide to your patients with hypertension. 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 indicator, which cannot be measured provincially using currently available data:

- Percentage of people with hypertension who report that their blood pressure has been within their target range for the past month

Potential data source(s): patient surveys collected during clinician visits or via electronic communication; local data collection using self-reported data sources

Statement-Specific Indicators

The *Hypertension* quality standard includes statement-specific indicators that 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 1 or more of the associated indicators to guide and evaluate your quality improvement efforts.

Quality Statement 1: Culturally Responsive Care

Percentage of people with hypertension who report receiving health care that is culturally responsive and free from racism and discrimination

- Denominator: total number of people with hypertension
- Numerator: number of people in the denominator who report receiving health care that is culturally responsive and free from racism and discrimination
- Data source: local data collection

Local availability of resources and training in culturally responsive care for all members of the health care team

- Description: availability of resources and training in culturally responsive care for all members of the health care team in the health facility, region, or other setting of interest
- Data source: local data collection

Quality Statement 2: Accurate Measurement of Blood Pressure

Percentage of people who receive automated office blood pressure measurement when in-office blood pressure measurement is performed

- Denominator: total number of people who receive in-office blood pressure measurement
- Numerator: number of people in the denominator who receive automated office blood pressure measurement
- Data source: local data collection

Quality Statement 3: Out-of-Office Assessment to Confirm a Diagnosis

Percentage of people with a high in-office blood pressure measurement who receive out-of-office blood pressure monitoring (ambulatory blood pressure monitoring or home blood pressure monitoring) to confirm a diagnosis of hypertension

- Denominator: total number of people with a high in-office blood pressure measurement
  - Using automated office blood pressure measurement, the person's mean systolic blood pressure is 135 to 179 mm Hg and their mean diastolic blood pressure is 85 to 109 mm Hg
  - Using non–automated office blood pressure measurement, the person's mean systolic blood pressure is 140 to 179 mm Hg and their mean diastolic blood pressure is 90 to 109 mm Hg

- Numerator: number of people in the denominator who receive out-of-office blood pressure monitoring (ambulatory blood pressure monitoring or home blood pressure monitoring) to confirm a diagnosis of hypertension
- Data source: local data collection

Local availability of ambulatory blood pressure monitoring or home blood pressure monitoring

- Description: availability of ambulatory blood pressure monitoring or home blood pressure monitoring in the health facility, region, or other setting of interest
- Data source: local data collection

Quality Statement 4: Health Behaviour Changes

Percentage of people with hypertension or at risk for hypertension who report receiving information and supports for health behaviour changes that can reduce their blood pressure and risk of cardiovascular disease

- Denominator: total number of people with hypertension or at risk for hypertension
- Numerator: number of people in the denominator who report receiving information and supports for health behaviour changes that can reduce their blood pressure and risk of cardiovascular disease
- Data source: local data collection

Local availability of culturally appropriate programs and services that support health behaviour changes for hypertension (including exercise programs, smoking-cessation programs, and access to a registered dietitian)

- Description: availability of culturally appropriate programs and services that support health behaviour changes for hypertension (including exercise programs, smoking-cessation programs, and access to a registered dietitian) in the health facility, region, or other setting of interest
- Data source: local data collection

Quality Statement 5: Care Planning and Self-Management

Percentage of people with hypertension who have a written care plan

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

Percentage of people with hypertension who report that their care plan is reviewed as needed

- Denominator: total number of people with hypertension who have a care plan
- Numerator: number of people in the denominator who report that their care plan is reviewed as needed
- Data source: local data collection

Percentage of people with hypertension who report that their clinician always or often involves them in decisions about their care

- Denominator: total number of people with hypertension
- Numerator: number of people in the denominator who report that their clinician always or often involves them in decisions about their care
- Note: An example of a validated survey question that is similar to this indicator can be found in the Patient Experience Survey: "When you see your doctor or nurse practitioner, how often do they or someone else in the office involve you as much as you want to be in decisions about your care and treatment?"
- Data source: local data collection

Percentage of people with hypertension and language barriers who report receiving support for their language needs during the care-planning process

- Denominator: total number of people with hypertension who have language barriers that affect their ability to communicate with their health care team
- Numerator: number of people in the denominator who report receiving support for their language needs during the care-planning process
- Data source: local data collection

Quality Statement 6: Monitoring and Follow-Up After a Confirmed Diagnosis

Percentage of people with hypertension and blood pressure within target range who have a follow-up visit with their clinician at least once every 6 months

- Denominator: total number of people with hypertension and blood pressure within target range
- Numerator: number of people in the denominator who have a follow-up visit with their clinician (e.g., primary care physician, nurse practitioner, pharmacist, physician specialist) at least once every 6 months
- Data source: local data collection

Percentage of people with hypertension and blood pressure higher than target range who have a follow-up visit with their clinician every 1 to 2 months

- Denominator: total number of people with hypertension and blood pressure higher than target range
- Numerator: number of people in the denominator who have a follow-up visit with their clinician (e.g., primary care physician, nurse practitioner, pharmacist, physician specialist) every 1 to 2 months
- Data source: local data collection

Quality Statement 7: Improving Adherence to Medications

Percentage of people with hypertension and a prescription for blood pressure medication who feel involved in discussions about their medication, including its use, possible side effects, and barriers to taking it

- Denominator: total number of people with hypertension and a prescription for blood pressure medication
- Numerator: number of people in the denominator who feel involved in discussions about their medication, including its use, possible side effects, and barriers to taking it
- Data source: local data collection

Percentage of people with hypertension who report taking their blood pressure medication as prescribed

- Denominator: total number of people with hypertension and a prescription for blood pressure medication
- Numerator: number of people in the denominator who report taking their blood pressure medication as prescribed
- Data source: local data collection

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.

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