Quality Standards

Glaucoma

Care for Adults

September 2018

Health Quality Ontario

Let's make our health system healthier

Ontario
Provincial Vision
Task Force

Summary

This quality standard focuses on care for adults 18 years of age and older with primary open-angle glaucoma and those who are at risk for primary open-angle glaucoma. It focuses on the assessment, diagnosis, and management of this condition. It applies to all care settings and all eye care providers who provide glaucoma care, including optometrists and ophthalmologists (comprehensive and with subspecialty glaucoma training). This quality standard does not address care for people with acute angle-closure glaucoma (a medical emergency that requires immediate treatment to prevent vision loss).

Table of Contents

About Quality Standards **4**
How to Use Quality Standards **4**
About This Quality Standard **5**
Scope of This Quality Standard 5
Terminology Used in This Quality Standard 5
Why This Quality Standard Is Needed 6
Principles Underpinning This Quality Standard 7
How Success Can Be Measured 7
Quality Statements in Brief **9**
Quality Statement 1: Routine Eye Examination and Comprehensive Glaucoma Assessment **10**
Quality Statement 2: Monitoring **13**
Quality Statement 3: Information **16**
Quality Statement 4: Referral for Consultation **19**
Quality Statement 5: Pharmacotherapy and Laser Therapy **22**
Quality Statement 6: Incisional Surgery **25**
Acknowledgements **27**
References **29**
About Health Quality Ontario **31**
About the Provincial Vision Task Force **33**

About Quality Standards

Health Quality Ontario, in collaboration with clinical experts, patients, residents, and caregivers across the province, is developing quality standards for Ontario. Health Quality Ontario has worked in partnership with the Provincial Vision Task Force to develop this quality standard for glaucoma.

Quality standards are concise sets of statements that will:

- Help patients, residents, 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

The statements in this quality standard do not override the responsibility of health care professionals to make decisions with patients, after considering each patient's unique circumstances.

How to Use Quality Standards

Quality standards inform clinicians and organizations about what high-quality health care looks like for aspects of care that have been deemed a priority for quality improvement in the province. They are based on the best available evidence.

They also include indicators to help clinicians and organizations assess the quality of care they are delivering, and to identify gaps and areas for improvement. These indicators measure processes, structures, and outcomes.

In addition, tools and resources to support clinicians and organizations in their quality improvement efforts accompany each quality standard.

For more information on how to use quality standards, contact qualitystandards@hqontario.ca.

About This Quality Standard

Scope of This Quality Standard

This quality standard focuses on care for adults 18 years of age and older with glaucoma or who are at risk for glaucoma. It addresses primary open-angle glaucoma and focuses on the assessment, diagnosis, and management of this condition. It applies to all care settings and all eye care providers who provide glaucoma care, including optometrists and ophthalmologists (comprehensive and with subspecialty glaucoma training).

This quality standard does not address care for people with acute angle-closure glaucoma (a medical emergency that requires immediate treatment to prevent vision loss).

While the quality standard addresses care for adults with or at risk for primary open-angle glaucoma, some guidance in this quality standard may be relevant and applicable to people younger than 18 years of age or who have other forms of glaucoma, such as chronic angle-closure glaucoma and secondary open-angle glaucoma. However, eye care providers should consider that specialized skills and expertise may be required when providing treatment in these populations. If treatment is beyond an eye care provider's scope or expertise, they should consult an eye care provider with the appropriate expertise.

Terminology Used in This Quality Standard

Glaucoma

In this quality standard, "glaucoma" refers to primary open-angle glaucoma, which is the most common form of glaucoma in North America.[1] Open-angle glaucoma occurs when the system responsible for draining fluid from the eye (i.e., Schlemm's canal, including the trabecular meshwork) is anatomically open but not draining the fluid effectively, causing pressure on the optic nerve.[2] Glaucoma is classified as primary or secondary, depending on whether there is a known cause: primary glaucoma has an unknown cause, whereas secondary glaucoma develops as a result of an identifiable cause, such as an injury or disease.[1]

People at Risk for Glaucoma

In this quality standard, "people at risk for glaucoma" are those who possess risk factors or clinical findings that indicate an increased likelihood of developing glaucoma; examples of clinical findings are ocular hypertension or a suspicious appearance of the optic nerve. Not all people who are at risk will develop glaucoma. Strong risk factors for developing glaucoma include[1,3-5]:

- Elevated intraocular pressure (> 21 mm Hg in at least one eye)
- Increasing age (particularly people 50 years of age and older)
- Family history of glaucoma (in first-degree relatives)
- African or Hispanic ethnicity
- Thin central corneal thickness
- Enlargement or asymmetric cupping of the optic nerve head
- High myopia (near-sightedness)

Eye Care Providers

In this quality standard, "eye care providers" refers to optometrists and ophthalmologists (comprehensive or with subspecialty glaucoma training).

Progression

In this quality standard, the term "progression" refers to new or worsening structural or functional changes associated with glaucoma.[3] The clinical significance of progression, and the clinical actions required, are influenced by the extent of damage prior to the change and the threat of visual impairment if further progression were to occur.[3]

Why This Quality Standard Is Needed

Glaucoma can result in gradual and permanent vision loss and ultimately blindness, if not diagnosed and treated.[1,3] Globally, glaucoma is the leading cause of irreversible blindness.[6] It is estimated to affect more than 400,000 Canadians, and the direct costs of vision loss from glaucoma in Canada are estimated at $300 million annually.[7-9] Age is a strong risk factor for glaucoma; people over age 60 are six times more likely to develop glaucoma.[10] The burden of disease is growing as the Ontario population ages: between 2009/10 and 2015/16, the number of optometry and ophthalmology visits in Ontario for people with glaucoma increased by 34% and 67%, respectively (data source: IntelliHealth Ontario, Medical Services).

Although there is no cure for glaucoma, its progression can be managed, and there are significant opportunities to improve the quality of life of people with glaucoma through the delivery of high-quality care. Glaucoma develops painlessly and gradually; symptoms are often not apparent until there is substantial irreversible damage to the optic nerve fibres.[1] As a result, glaucoma often goes undetected: it is estimated that up to 50% of people with glaucoma are not aware they have the disease.[9,11,12] In a Canadian study, nearly half of people with newly diagnosed open-angle glaucoma had moderate or advanced disease at the time of diagnosis.[13,14] Early detection and treatment of glaucoma can often delay or prevent further vision loss.[11] The best way to detect glaucoma is through a routine eye examination by an eye care provider.[15,16]

In Ontario, there are inequities in access to care for some populations that are at risk for glaucoma. Lower socioeconomic status and older age are associated with a greater severity of glaucoma at the time of initial diagnosis.[12-14] People aged 20 to 64 years old with a specific medical condition affecting the eye (including glaucoma, diabetes mellitus, cataract, retinal disease, amblyopia, visual field defects, corneal disease, strabismus, recurrent uveitis, and optic pathway disease) are eligible to receive OHIP reimbursement for a routine eye examination once every 12 months and any follow-up appointments related to the condition.[17] However, other people—including those at risk for glaucoma—must either pay out of pocket for the examination if performed by an optometrist or have their costs covered by private insurance (when available). The costs associated with routine eye examinations can be a barrier to access.

Administrative data reveals regional variations across Ontario, by local health integration network (LHIN) of patient residence, in the utilization of glaucoma-related services, which may be suggestive of potential inequities in access. In 2015/16, the rate of optometry visits for people with glaucoma ranged from 107 to 350 visits per 10,000 residents across Ontario's 14 LHINs (data source: IntelliHealth Ontario, Medical Services), while the rate of consultations to

an ophthalmologist (requested by an optometrist or a physician) varied across LHINs from 39 to 106 consultations per 10,000 residents (data source: IntelliHealth Ontario, Medical Services). Data also suggest there are variations in the procedures provided to people with glaucoma across regions. For example, rates of laser trabeculoplasty per 100,000 residents in 2015/16 ranged from 5.0 to 98.9 across the LHINs (data source: IntelliHealth Ontario, Medical Services).

Because administrative data currently available in Ontario has significant limitations for both identifying people with glaucoma and for capturing the utilization of certain glaucoma-related services (such as optometrist consultations that are not publicly insured), it is not known whether these regional variations in utilization may be related to regional differences in the underlying prevalence of glaucoma, differences in service patterns or true inequities in access to care.

Principles Underpinning This Quality Standard

This quality standard is underpinned by the principles of respect and equity.

People with glaucoma or at risk for glaucoma should receive services that are respectful of their rights and dignity and that promote shared decision-making and self-management.

People with glaucoma or at risk for glaucoma should be provided services that are respectful of their gender, sexual orientation, socioeconomic status, housing, age, background (including self-identified cultural, linguistic, ethnic, and religious backgrounds), and disability. Equitable access to the health system also includes access to culturally safe care. Language, a basic tool for communication, is an essential part of safe care and needs to be considered throughout a person's health care journey. For example, in predominantly English-speaking settings, services should be actively offered in French and other languages.

Care providers should be aware of the historical context of the lives of Canada's Indigenous peoples and be sensitive to the impacts of intergenerational trauma and the physical, mental, emotional, and social harms experienced by Indigenous people, families, and communities.

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

How Success Can Be Measured

The Glaucoma Quality Standard Advisory Committee identified a small number of overarching goals for this quality standard. These have been mapped to indicators that may be used to assess quality of care provincially and locally.

How Success Can Be Measured Provincially

In this section, we list indicators that can be used to monitor the overall success of the standard provincially, given currently available data. If additional data sources are developed, other indicators could be added.

Process indicators:

- Percentage of people diagnosed with glaucoma who receive at least one major eye examination annually

- Wait time between referral and incisional glaucoma surgery

How Success Can Be Measured Locally

You may want to monitor your own quality improvement efforts and assess the quality of care you provide to people with glaucoma. It may be possible to do this using your own clinical records, or you might need to collect additional data. We recommend the following indicators to measure the quality of care patients are receiving; these indicators can only be measured through local data collection:

- Percentage of people treated for glaucoma who report high satisfaction with the eye care they receive
- Percentage of people with glaucoma whose vision has worsened in the past year

In addition to the overall measures of success, each quality statement within the standard is accompanied by one or more indicators. These indicators are intended to guide local measurement of quality improvement efforts related to the implementation of the statement. To assess the equitable delivery of care, the statement-specific indicators and the overall indicators can be stratified by patient socioeconomic and demographic characteristics, such as income, education, language, age, sex, and gender.

Quality Statements in Brief

To come

Quality Statement 1: Routine Eye Examination and Comprehensive Glaucoma Assessment

People at risk for glaucoma receive a routine eye examination. People suspected of having glaucoma, based on findings from the routine eye examination, receive a comprehensive glaucoma assessment.

Background

Glaucoma is asymptomatic in its early stages, so it is often unnoticed by people until it is advanced and they have permanent vision loss. It is estimated that up to 50% of people with glaucoma are not aware they have the disease.[9,11,12] Early detection and treatment of glaucoma can often delay or prevent further vision loss.[11] A routine eye examination evaluates people's vision and eye health and can help detect eye diseases, such as glaucoma, cataracts, diabetic retinopathy, and macular degeneration. Primary care providers play a key role in identifying and referring people who are at risk for glaucoma (see the Definitions section) to an eye care provider for evaluation.[5,18]

If glaucoma is suspected (based on risk factors or clinical findings), a comprehensive glaucoma assessment should be initiated to[1,18]:

- Investigate the presence of the disease and establish the classification and subtype of glaucoma
- Gather baseline information
- Establish disease severity

Whenever possible, the comprehensive glaucoma assessment should occur in conjunction with the routine eye examination. If any tests are unavailable, people requiring these tests should be referred to eye care providers or settings where such tests can be obtained. The assessment findings should inform people's individualized treatment plans and the frequency of ongoing monitoring (see Quality Statement 2).

Sources: American Academy of Ophthalmology, 2015[18]| Canadian Association of Optometrists, 2017[1] | Canadian Ophthalmological Society, 2009[3] | National Health and Medical Research Council, 2010[5] | National Institute for Health and Care Excellence, 2017[19]

Definitions Used Within This Quality Statement

At risk
Strong risk factors for developing glaucoma include[1,3-5,19]:

- Elevated intraocular pressure (> 21 mm Hg in at least one eye)
- Increasing age (particularly people 50 years of age and older)
- Family history of glaucoma (in first-degree relatives)
- African or Hispanic ethnicity
- Thin central corneal thickness
- Enlargement or asymmetric cupping of the optic nerve head
- High myopia (near-sightedness)

Routine eye examination
The examination is completed by an eye care provider and includes, at a minimum, the following components[1,3]:

- History:
  - Medical history
  - Ocular history
  - Current medications and allergies
  - Family history (medical and ocular)
  - Assessment of risk factors

- Clinical examination:
  - Refraction and best corrected visual acuity
  - Pupillary function (including pupil size and reactivity)
  - Ocular motility
  - Slit-lamp examination of the anterior segment
  - Ophthalmoscopy
  - Determination of the intraocular pressure

Comprehensive glaucoma assessment
The comprehensive glaucoma assessment is performed by an eye care provider to investigate the presence of disease and develop a baseline for the assessment of progression. The assessment of structural damage and functional loss allows for the staging of disease severity; this staging informs decision-making for treatment and follow-up.

In addition to components of the routine eye examination, the comprehensive glaucoma assessment should include[1,3,5,11,18,19]:

- Gonioscopy (evaluates how fluid drains from the eye)
- Measurement of the central corneal thickness
- Applanation tonometry (measures intraocular pressure; include time of measurement)
- Evaluation of the stereoscopic optic nerve
- Standard automated perimetry (visual field testing)
- Imaging of the optic nerve head and retinal nerve fiber layer

What This Quality Statement Means

For People With Glaucoma
Usually, glaucoma has no symptoms in its early stages. The best way to know if you have glaucoma is to get a routine eye examination by an eye care provider. Your eye care provider should ask you about your vision and your health and check for signs of glaucoma. If your eye care provider thinks you might have glaucoma, they should do additional tests.

For Clinicians
Everyone should have their eyes examined regularly. People who exhibit signs of glaucoma or have risk factors for glaucoma should have a routine eye examination and, if necessary, a comprehensive glaucoma assessment.

For Health Services
Ensure there are systems, processes, and resources in place to allow (1) primary care providers to assess for glaucoma risk factors and refer patients to an eye care provider for evaluation and (2) eye care providers to carry out investigations for people suspected to have glaucoma or at risk for glaucoma.

Quality Indicators

Process Indicators

Percentage of people at risk for developing glaucoma who have received a routine eye examination within the past 24 months

- Denominator: number of people at risk of developing glaucoma
- Numerator: number of people in the denominator who have received a routine eye examination within the past 24 months
- Data source: local data collection

Percentage of people suspected of having glaucoma who receive a comprehensive glaucoma assessment

- Denominator: number of people suspected of having glaucoma (based on findings from a routine eye examination)
- Numerator: number of people in the denominator who receive a comprehensive glaucoma assessment
- Potential stratification: age category
- Data sources: local data collection

Quality Statement 2: Monitoring

People with glaucoma or at risk for glaucoma are monitored on an appropriate reassessment schedule, according to their risk of progression to vision impairment.

Background

For people with glaucoma or at risk for glaucoma, ongoing assessment by an eye care provider is important to detect progression of structural damage (i.e., to the optic nerve and retinal nerve fibre) and functional (visual field) loss and to assess the effectiveness and side effects of treatment.[1,19] Early identification of progression allows for timelier therapeutic intervention. While some degree of progression may be unavoidable, the goals of the eye care provider are to measure and minimize the progression, while optimizing health-related quality of life, with an appropriate and individualized treatment plan that is acceptable to the patient.[18]

Based on the assessment results, the eye care provider evaluates the risk of conversion to glaucoma (in people at risk) and the risk of progressive structural damage or functional loss (in people with glaucoma). They use this evaluation to decide whether treatment or a change in treatment is indicated and to establish an appropriate monitoring schedule.

Sources: American Academy of Ophthalmology, 2015[18]| Canadian Association of Optometrists, 2017[1] | Canadian Ophthalmological Society, 2009[3] | National Health and Medical Research Council, 2010[5] | National Institute for Health and Care Excellence, 2017[19] | Scottish Intercollegiate Guidelines Network, 2015[4]

Definitions Used Within This Quality Statement

Monitored
At a minimum, each assessment should include the following:

- Questions about changes to the person's general health and medications, visual changes, and, if applicable, glaucoma medication adherence and side effects[1,3,5,18,19]
- Structural and functional tests, including[1,3,5,18,19]:
    - Measurement of intraocular pressure
    - Evaluation of the optic nerve head (e.g., using a stereo fundus lens or objective imaging)
    - Visual field testing
    - Gonioscopy when clinically indicated (e.g., a previous examination was inconclusive, there is an unexplained rise in intraocular pressure, anterior chamber angle abnormalities are present)

Appropriate reassessment schedule
While the frequency of monitoring has not been assessed in high-quality studies, current glaucoma clinical practice guidelines have provided consensus-based recommendations for follow-up intervals and testing frequencies for stable glaucoma (see below).[3] When deciding on appropriate follow-up intervals, clinical judgment is of paramount importance. It may be reasonable to adjust the follow-up intervals suggested below according to individual factors, such as risk of conversion to glaucoma, control of intraocular pressure, severity and stability of the glaucoma, risk of progression to visual impairment during the patient's lifetime, treatment nonadherence, and health-related quality of life.[3,19]

Below is consensus-based published guidance for follow-up intervals and testing frequencies for stable glaucoma, according to the stage of glaucoma.

At risk for glaucoma
Assessment interval: every 1 to 2 years[3]
Clinical features: one or more of the following[1,3]:

- Suspicious 24-2 (or similar) visual field defect
- Intraocular pressure greater than 21 mm Hg
- Suspicious disc or cup-to-disc asymmetry of greater than 0.2 in optic nerve heads of equal size

Early or mild stage glaucoma
Assessment interval: at least every 12 months[3]
Clinical features: early glaucomatous disc features (vertical cup-to-disc ratio < 0.65) and/or mild visual field defect not within 10° of fixation (e.g., mean deviation better than −6 dB on Humphrey Visual Field Analyzer 24-2)[1,3]

Moderate stage glaucoma
Assessment interval: at least every 6 months[1,3]
Clinical features: moderate glaucomatous disc features (vertical cup-to-disc ratio 0.7–0.85) and/or moderate visual field defect not within 10° of fixation (e.g., mean deviation from −6 to −12 dB on Humphrey Visual Field Analyzer 24-2) [1,3]

Advanced stage glaucoma
Assessment interval: at least every 4 months[1,3]
Clinical features: advanced glaucomatous disc features (vertical cup-to-disc ratio > 0.9) and/or advanced visual field defect within 10° of fixation (e.g., mean deviation worse than −12 dB on Humphrey Visual Field Analyzer 24-2)[1,3]

Vision impairment
This is a severe reduction in visual acuity or visual field that cannot be corrected with prescription glasses or contact lenses.[19] Vision impairment can limit a person's ability to perform activities such as reading, writing, walking, and driving and can negatively impact their quality of life.

What This Quality Statement Means

For People With Glaucoma
Your eye care provider should check your eyes on a regular basis to see if your eye condition is getting worse. If so, it should be treated promptly to slow down or prevent further vision loss.

For Clinicians
Reassess people at risk for glaucoma or diagnosed with glaucoma on a regular basis, according to their disease severity and stability and risk of progressive loss of vision.

For Health Services
Ensure there are systems, processes, and resources for eye care providers to carry out timely, ongoing eye assessments for people at risk for glaucoma or diagnosed with glaucoma.

Quality Indicators

Process Indicators

Percentage of people at risk for developing glaucoma (as defined above) who have been clinically assessed within the past 24 months for their risk of progression to vision impairment

- Denominator: number of people at risk for or suspected of developing glaucoma
- Numerator: number of people in the denominator who have been clinically assessed within the past 24 months for their risk of progression to vision impairment
- Data source: local data collection

Percentage of people with early or mild glaucoma (as defined above) who have been clinically assessed within the past 12 months for their risk of progression to vision impairment

- Denominator: number of people with early or mild glaucoma
- Numerator: number of people in the denominator who have been clinically assessed within the past 12 months for their risk of progression to vision impairment
- Data source: local data collection

Percentage of people with moderate glaucoma (as defined above) who have been clinically assessed within the past 6 months for their risk of progression to vision impairment

- Denominator: number of people with moderate glaucoma
- Numerator: number of people in the denominator who have been clinically assessed within the past 6 months for their risk of progression to vision impairment
- Data source: local data collection

Percentage of people with advanced glaucoma (as defined above) who have been clinically assessed within the past 4 months for their risk of progression to vision impairment

- Denominator: number of people with advanced glaucoma
- Numerator: number of people in the denominator who have been clinically assessed within the past 4 months for their risk of progression to vision impairment
- Data source: local data collection

Quality Statement 3: Information

Eye care providers speak with people with glaucoma or at risk for glaucoma about their diagnosis and their condition's prognosis and management, and offer them relevant and accessible information about glaucoma at initial and subsequent visits.

Background

Providing people with evidence-based information about glaucoma and engaging them in discussions can help them to make informed decisions about their care; these discussions should focus on their condition, its current status and risk of progression, treatment options (including potential benefits and harms), and the importance of ongoing monitoring.[5,18,19] Information should be provided throughout the care journey and align with the person's stage of glaucoma and their evolving needs.[4,5,19] People should have opportunities to discuss questions and concerns with their eye care provider.

Sources: American Academy of Ophthalmology, 2015[18] | Canadian Ophthalmological Society, 2009[3] | National Health and Medical Research Council, 2010[5] | National Institute for Health and Care Excellence, 2017[19] | Scottish Intercollegiate Guidelines Network, 2015[4]

Definitions Used Within This Quality Statement

Information
Information about glaucoma should be provided throughout the care continuum, verbally or in a printed or multimedia format. This information should include, at a minimum:

- The person's specific condition or type of glaucoma, its life-long implications, and the prognosis for sight retention
- Their individualized treatment plan, including aspects of care such as target intraocular pressure, reassessment intervals, and treatments, based on the person's age and stage of glaucoma
- Risk factors for glaucoma
- Signs and symptoms of glaucoma
- Treatment options (medications, laser therapy, and incisional surgery), including mode of action, frequency, side effects, potential benefits and harms, and any financial costs to the person (see Quality Statements 5 and 6)
- The importance of the person's role in their own treatment
- The importance of taking glaucoma medications as directed by the eye care provider
- How to effectively apply eye drops and how to store them
- Methods of investigation during assessment and ongoing monitoring
- The need for regular monitoring and follow-up with the eye care provider
- The fact that glaucoma can run in families, so family members may wish to be tested for the condition
- The message that once sight is lost, it cannot be recovered
- Available social and community supports (e.g., formal support groups), both locally and online
- Visual aids and other adaptive technologies (e.g., magnifying lenses, talking clocks, large-print books or labels)

What This Quality Statement Means

For People With Glaucoma or at Risk for Glaucoma
Your eye care provider should give you information about glaucoma. They should tell you about how the disease is likely to progress, what you can do to help manage it, how often to get your eyes tested, and your treatment options. This information should be available for you in a variety of ways, including verbally, written down, or in a video. If you give permission, your family should also be given this information.

You should be involved in all decisions made about your care and have the opportunity to discuss your condition and treatment with your eye care provider.

For Clinicians
Discuss with the person their diagnosis and their condition's prognosis and management. Provide evidence-based information about glaucoma that is tailored to meet their learning needs in a format and at times that are most appropriate for them. If the person consents, include family as much as possible in discussions and decision-making.

For Health Services
Ensure that appropriate educational resources about glaucoma are available for eye care providers to provide their patients. These resources should be available in written and multimedia formats and translated when necessary.

Quality Indicators

Process Indicators

Percentage of people with glaucoma or at risk for glaucoma who discussed their diagnosis and their condition's prognosis and management with their eye care provider at their last visit

- Denominator: number of people with glaucoma or at risk for glaucoma
- Numerator: number of people in the denominator who discussed their diagnosis and their condition's prognosis and management with their eye care provider at their last visit
- Data source: local data collection

Percentage of people with glaucoma or at risk for glaucoma who received relevant and accessible information about glaucoma at their last visit

- Denominator: number of people with glaucoma or at risk for glaucoma
- Numerator: number of people in the denominator who received relevant and accessible information about glaucoma at their last visit
- Data source: local data collection

Outcome Indicators

Percentage of people with glaucoma or at risk for glaucoma who report feeling confident they can apply their prescribed eye drops effectively

- Denominator: number of people with glaucoma or at risk for glaucoma who are prescribed eye drops
- Numerator: number of people in the denominator who report feeling confident they can apply their eye drops effectively
- Data source: local data collection

Percentage of people with glaucoma or at risk for glaucoma who report they are satisfied with the information received and discussed with their eye care provider about their care (including diagnosis, prognosis, management, and treatment plans)

- Denominator: number of people with glaucoma or at risk for glaucoma
- Numerator: number of people in the denominator who report they are satisfied with the information received and discussed with their eye care provider about their care
- Data source: local data collection

Quality Statement 4: Referral for Consultation

People with glaucoma are referred for consultation, when clinically indicated, to the appropriate level of eye care provider for their needs.

Background

People with glaucoma in Ontario can receive eye care from providers at several levels of glaucoma specialization. In escalating order of specialization, these are optometrists, comprehensive ophthalmologists, and ophthalmologists with subspecialty training in glaucoma. People with glaucoma may require specialized care at different points in their care journey.

A person with glaucoma should be referred to another eye care provider whenever their condition or the care they require exceeds their current provider's scope of practice or expertise. The person should be referred to the level of eye care provider that has the scope of practice and expertise to address their needs.

There will be situations where the interests of the person with glaucoma are best served by a collaborative (shared-care) relationship among providers. The Eye Health Council of Ontario provides guidance on interprofessional collaboration for the care of people with glaucoma in *Guidelines for the Care of Patients with Glaucoma*.[20]

The referral from one eye care provider to another eye care provider should include all relevant clinical information, including[3]:

- Baseline appearance and current appearance of the optic nerve
- Current and maximum intraocular pressures
- Records of serial visual field assessments indicating rates of progression
- Information about the person's individualized treatment plan
- The clinical indication for the referral

This information will help to ensure people with glaucoma are seen according to the urgency of their referral and will minimize the duplication of tests and services.

Sources: Advisory committee consensus | American Academy of Ophthalmology, 2015[18]

Definitions Used Within This Quality Statement

Clinically indicated
Clinical indications for referral include, but are not limited to:

- Uncertainty regarding diagnosis[18]
- Uncertainty regarding treatment for a patient (such as the need for treatment or the best treatment)
- Rapidly progressing glaucoma
- Intraocular pressure that cannot be reduced sufficiently to prevent the risk of progressive vision loss[19]
- The availability of specific diagnostic tests
- The ability to provide interventional care (including advanced medical management, laser therapy, and incisional surgery)

Appropriate level of eye care provider
In escalating order of specialization, these levels are:

- **Optometrist:** Optometrists are the most appropriate provider to care for many people with glaucoma or at risk for glaucoma. They can perform most initial glaucoma-related diagnostic tests and provide management, including medications. Optometrists with a specialized interest in glaucoma may provide consultation in cases when there are concerns over a patient's status, or when a person's glaucoma is refractory to treatments undertaken by the initial optometrist.
- **Comprehensive ophthalmologist:** Referral to a comprehensive ophthalmologist should be considered when there are concerns over a patient's status, when a person's glaucoma is refractory to treatments that optometrists can offer, or when laser therapy or surgery is considered.
- **Ophthalmologist with subspecialty training in glaucoma:** These providers generally practise at tertiary care hospital centres. Referral can be considered for particularly severe or rapidly progressing cases of glaucoma, or when the person's glaucoma is refractory to the routine surgical treatments offered by a comprehensive ophthalmologist.

What This Quality Statement Means

For People With Glaucoma
Your eye care provider may determine that you need to see an eye care provider who has a special interest in glaucoma care. This is usually an ophthalmologist or sometimes an optometrist with expertise in glaucoma. You may see this second eye care provider once or on an ongoing basis.

For Clinicians
Referring providers: Perform a comprehensive glaucoma assessment (see Quality Statement 1) before considering referral for consultation. Provide a detailed referral, including the clinical indication for referral, history, intraocular pressure, optic nerve appearance, visual fields, imaging (if possible), and details of current and previous glaucoma medications and interventions (laser and surgery).

Consulting providers: Communicate with the referring provider to inform them of the timing of the referral response. After the appointment, inform them of any findings, treatment changes, and next steps.

For Health Services
Ensure systems, processes, and resources are in place so that people with glaucoma have timely access to secondary and tertiary consultations upon referral from their eye care provider.

Quality Indicators

Process Indicators

Percentage of people with glaucoma who are referred for further consultation when clinically indicated

- Denominator: number of people with glaucoma with a clinical indication for referral
- Numerator: number of people in the denominator who are referred for further consultation
- Data source: local data collection

Wait time between the referral and the consultation for people with glaucoma

- Description: mean and median number of days between the date of referral for consultation and the date of consultation
- Data source: local data collection

Quality Statement 5: Pharmacotherapy and Laser Therapy

People with glaucoma or at risk for glaucoma are offered pharmacotherapy or laser therapy when clinically indicated.

Background

There is no cure for glaucoma, but it is treatable. The goals of glaucoma treatment are to preserve visual function by slowing or stopping structural damage and functional loss by lowering intraocular pressure (the only known modifiable risk factor), while optimizing health-related quality of life.[3,8] Eye care providers should set a target intraocular pressure range that is expected to prevent further damage to the optic nerve.[18] This target range is a dynamic concept, and it should be individualized and continually re-evaluated, taking into consideration the person's stage of disease, pretreatment intraocular pressure, risk factors, needs and preferences, social circumstances, and life expectancy.[8] A combination of medications, laser therapy, and/or incisional surgery (see Quality Statement 6) may be needed to achieve this target range.

Pharmacotherapy remains the most common initial treatment for lowering intraocular pressure and usually involves topical agents delivered as eye drops.[8] Topical prostaglandin analogues should be considered first-line treatments because of their favourable efficacy and safety profiles.[5,18,19] To maximize people's health-related quality of life and adherence to the treatment regimen, the eye care provider should prescribe the minimum number of medications with the minimum dosing frequency to achieve the target intraocular pressure range.[3]

Laser trabeculoplasty should be considered either as an adjunct to topical medications or as an initial treatment before pharmacotherapy in select populations with glaucoma, such as those at high risk for nonadherence to medication or those who cannot tolerate medication.[1,18]

The use of medications or laser therapy should be discussed with the patient, including risks and benefits, side effects, and out-of-pocket costs (if any). Whenever possible, family members should be included in these discussions. A person's medications and dosage should be reviewed regularly, including their response, observed benefits, side effects, and adherence to treatment.

Sources: American Academy of Ophthalmology, 2015[18]| Canadian Association of Optometrists, 2017[1] | Canadian Ophthalmological Society, 2009[3] | National Health and Medical Research Council, 2010[5] | National Institute for Health and Care Excellence, 2017[19] | Scottish Intercollegiate Guidelines Network, 2015[4]

Definitions Used Within This Quality Statement

Pharmacotherapy
People with glaucoma or at high risk for glaucoma, who are at risk of visual impairment within their lifetime, should be offered prostaglandin analogue eye drops.[19] If progression is suspected, intraocular pressure targets are not achieved, or adverse effects are encountered, people should be switched to another drug in the prostaglandin analogue class. If treatment is still unsuccessful, people should be offered a drug from a different therapeutic class (a beta-blocker, carbonic anhydrase inhibitor, or sympathomimetic).[18,19] Topical drugs from more than one therapeutic class may be needed at the same time.[19]

Laser therapy
Options are laser trabeculoplasty[1,3,5,18,19] and cyclodiode laser treatment.[19]

Clinically indicated
Treatment for glaucoma is indicated when there is a threat to a person's visual function, such as[1]:

- When there is structural damage to the optic nerve or functional loss of the visual field
- In people with a high-risk profile for the development of glaucoma

What This Quality Statement Means

For People With Glaucoma
There is no cure for glaucoma. But through medications, laser therapy, or surgical treatment (see Quality Statement 6), most people with glaucoma can preserve their eyesight. Your eye care provider should discuss with you the potential benefits and harms, side effects, and out-of-pocket costs (if any) of the available treatment options so that you can make informed decisions about your care together. If you want to, include family members in these discussions.

Medications are an important part of managing glaucoma. Eye drops are common medications used to lower the pressure in your eye caused by glaucoma. It is important to use these drops as prescribed by your eye care provider. Your eye care provider should explain how and when to take your medications and should ask you to show them how you administer your eye drops. This way, you can both be sure you are confident administering the drops.

Your eye care provider may recommend laser therapy to help open your eye's natural drainage system; this reduces the pressure in your eye. Laser therapy may be used as an initial treatment or in addition to eye drops.

For Clinicians
People with glaucoma or at high risk for glaucoma should usually be prescribed glaucoma medication. Regularly monitor and document their response, side effects, and disease progression. Provide clear instructions about when and how to use the medication. Ask people to demonstrate how they administer their eye drops to ensure proper technique. Offer people laser therapy if they are likely to benefit from it, either as an initial treatment or an adjunct to glaucoma medications.

For Health Services
Ensure that systems, processes, education, and resources are in place for eye care providers to appropriately prescribe glaucoma medications and monitor people's response to treatment, and to perform or refer people for laser therapy.

Quality Indicators

Process Indicators

Percentage of people with glaucoma or at high risk for glaucoma who receive pharmacotherapy or laser therapy

- Denominator: number of people with glaucoma or at high risk for glaucoma
- Numerator: number of people in the denominator who receive pharmacotherapy or laser therapy
- Data source: local data collection

Percentage of people with glaucoma who receive pharmacotherapy or laser therapy that felt involved in discussions about the benefits, risks and side effects

- Denominator: number of people with glaucoma who receive pharmacotherapy or laser therapy
- Numerator: number of people in the denominator that felt involved in discussions about the benefits, risks and side effects
- Data source: local data collection

Quality Statement 6: Incisional Surgery

People with glaucoma who are at risk of progressing to sight loss despite maximum tolerated medical therapy are offered incisional surgery, as appropriate.

Background

Eye care providers should offer incisional surgery when glaucoma medications and laser therapy (see Quality Statement 5) do not sufficiently lower a person's intraocular pressure and the person is at risk of losing visual function.

The eye care provider should discuss surgical options with the person, including an explanation of the procedure, side effects, potential risks and benefits, and recovery time. Whenever possible, family members should be included in these discussions. Any treatment decisions should be made in collaboration with the person and be based on their individual needs and preferences.

The person should be informed that surgery will lower the intraocular pressure, and this may preserve visual function; however, surgery will not cure the disease or restore vision already lost.[3]

People with glaucoma who prefer not to have surgery or for whom surgery is not suitable should be offered pharmacotherapy or laser therapy (see Quality Statement 5).[19]

Newer surgical procedures, including a group of procedures commonly called microinvasive or minimally invasive glaucoma surgery (MIGS), comprise a growing and diverse set of interventions with a range of indications. These procedures are often used in early- to moderate-stage glaucoma but may, in some circumstances, be an alternative to traditional incisional surgery for people with uncontrolled moderate to severe glaucoma.

Sources: American Academy of Ophthalmology, 2015[18] | Canadian Association of Optometrists, 2017[1] | Canadian Ophthalmological Society, 2009[3] | National Health and Medical Research Council, 2010[5] | National Institute for Health and Care Excellence, 2017[19]

Definitions Used Within This Quality Statement

Maximum tolerated medical therapy
Maximum tolerated medical therapy refers to the largest number of medications the person with glaucoma can tolerate and consistently administer to attain the greatest possible reduction in intraocular pressure.[1,8]

Incisional surgery
These surgeries include:

- The insertion of glaucoma drainage devices (tube shunts)[3,5,18]
- Minimally invasive glaucoma surgical procedures [18]
- Trabeculectomy and other bleb-forming procedures[3,5,18,19]

What This Quality Statement Means

For People With Glaucoma
If medications and laser therapy do not adequately lower your eye pressure, or if you cannot tolerate the side effects of the medication, your eye care provider may recommend surgery. Surgery is done to preserve your vision; it doesn't cure glaucoma, and you won't regain the vision you have already lost.

Your eye surgeon should discuss surgery options with you, including potential risks and benefits, side effects, and recovery time, so that you can make informed decisions about your care together. If you have family or others involved in your care, they should also receive this information.

For Clinicians
Offer (or refer) people with glaucoma incisional surgery if they are at risk of progressing to vision loss despite medical or laser therapy.

For Health Services
Ensure that systems, processes, education, and resources are in place for eye care providers to appropriately perform glaucoma surgery or to refer people with glaucoma for surgical consultation.

Quality Indicators

Process Indicators

Percentage of people with glaucoma who are at risk of progressing to sight loss despite maximum tolerated medical therapy who receive incisional surgery

- Denominator: number of people with glaucoma who are at risk of progressing to sight loss despite maximum tolerated medical therapy
- Numerator: number of people in the denominator who receive incisional surgery
- Data sources: local data collection, OHIP Claims Database

Wait time between referral and first surgeon visit for people with glaucoma who are at risk of progressing to sight loss despite maximum tolerated medical therapy

- Description: average number of days between referral and date of first surgeon visit
- Data source: Wait Time Information System

Wait time between decision to treat and incisional surgery for people with glaucoma who are at risk of progressing to sight loss despite maximum tolerated medical therapy

- Description: average number of days between decision to treat and date of incisional surgery
- Data source: Wait Time Information System

Percentage of people with glaucoma who undergo incisional surgery who receive information on the risks and benefits associated with the surgery

- Denominator: number of people with glaucoma who undergo incisional surgery
- Numerator: number of people in the denominator who receive information on the risks and benefits associated with the surgery
- Data source: local data collection

Acknowledgements

Advisory Committee

Health Quality Ontario and the Provincial Vision Task Force thank the following individuals for their generous, voluntary contributions of time and expertise to help create this quality standard:

Robert Campbell (co-chair)
Ophthalmologist, Glaucoma Specialist, Kingston Health Sciences Centre, Hotel Dieu site
Professor, Deputy Chair and Director of Research, Department of Ophthalmology, Queen's University

Thomas-A Noël (co-chair)
Optometrist, Private Practice
Vice-President, Ontario Association of Optometrists

Ike Ahmed
Ophthalmologist, Glaucoma Specialist, Director of Research, Kensington Eye Institute
Division Head, Ophthalmology, Trillium Health Partners
Assistant Professor, Department of Ophthalmology and Vision Sciences, University of Toronto

Robert Chevrier
Ophthalmologist, Glaucoma Specialist, The Ottawa Hospital
Chief of Ophthalmology, Hôpital Montfort
Assistant Professor, Department of Ophthalmology, University of Ottawa

Jessica Curtis
Senior Corporate Planner, University Health Network
Project Lead, Provincial Vision Task Force

Sherif El-Defrawy
Ophthalmologist, Chair, and Professor, Department of Ophthalmology and Vision Sciences, University of Toronto
Medical Director, Kensington Eye Institute

Jennifer Everson
Family Physician, Stonechurch Family Health Team
Vice-President, Clinical, Hamilton Niagara Haldimand Brant LHIN
Clinical Quality Lead, Hamilton Niagara Haldimand Brant LHIN, Health Quality Ontario

Phil Hooper
Ophthalmologist, Ivey Eye Institute, St. Joseph's Hospital
Associate Professor, Department pf Ophthalmology, University of Western Ontario
Co-chair, Provincial Vision Task Force

Cindy Hutnik
Ophthalmologist, Ivey Eye Institute, St. Joseph's Hospital
Associate Professor, Department of Ophthalmology, University of Western Ontario

Derek MacDonald
Optometrist, Private Practice
Executive Committee Member, Optometric Glaucoma Society

Marnie Weber
Executive Director, Strategic Developments, University Health Network

William Ulakovic
Optometrist, Private Practice
Clinical Instructor and Lecturer, Northern Ontario School of Medicine

References

(1) MacIver S, MacDonald D, Prokopich CL. Screening, diagnosis, and management of open angle glaucoma: an evidence-based guideline for Canadian optometrists. Can J Optometry. 2017;79(Supp 1).

(2) Canadian Agency for Drugs and Technologies in Health. Optimal use of minimally invasive glaucoma surgery: a health technology assessment—project protocol [Internet]. Ottawa (ON): The Agency; 2017 [cited 2018 May]. Available from: https://www.cadth.ca/sites/default/files/pdf/OP0532_MIGS_Protocol.pdf

(3) Canadian Ophthalmological Society Glaucoma Clinical Practice Guideline Expert Committee. Canadian Ophthalmological Society evidence-based clinical practice guidelines for the management of glaucoma in the adult eye. Can J Ophthalmol. 2009;44 Suppl 1:S7-93.

(4) Scottish Intercollegiate Guidelines Network. Glaucoma referral and safe discharge. SIGN publication no. 144. [Internet]. Edinburgh Scottish Intercollegiate Guidelines Network; 2015 [cited 2018 Jan 4]. Available from: http://www.sign.ac.uk/assets/sign144.pdf

(5) National Health and Medical Research Council. Guidelines for the screening, prognosis, diagnosis, management and prevention of glaucoma [Internet]. Canberra (AU): The Council; 2010 [cited 2018 Jan 4]. Available from: https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/cp113_glaucoma_120404.pdf

(6) Resnikoff S, Pascolini D, Etya'ale D, Kocur I, Pararajasegaram R, Pokharel GP, et al. Global data on visual impairment in the year 2002. Bull World Health Organ. 2004;82(11):844-51.

(7) Cruess AF, Gordon KD, Bellan L, Mitchell S, Pezzullo ML. The cost of vision loss in Canada. 2. Results. Can J Ophthalmol. 2011;46(4):315-8.

(8) Harasymowycz P, Birt C, Gooi P, Heckler L, Hutnik C, Jinapriya D, et al. Medical management of glaucoma in the 21st century from a Canadian perspective. J Ophthalmol. 2016;2016:6509809.

(9) Perruccio AV, Badley EM, Trope GE. Self-reported glaucoma in Canada: findings from population-based surveys, 1994-2003. Can J Ophthalmol. 2007;42(2):219-26.

(10) Glaucoma Research Foundation. Are you at risk for glaucoma? [Internet]. San Francisco (CA): The Foundation; 2017 [cited 2018 Jun 26]. Available from: https://www.glaucoma.org/glaucoma/are-you-at-risk-for-glaucoma.php

(11) Canadian Association of Optometrists. Glaucoma [Internet]. Ottawa (ON): The Association; 2017 [cited 2018 Jan 4]. Available from: https://opto.ca/health-library/about-glaucoma

(12) Buys YM, Jin YP. Socioeconomic status as a risk factor for late presentation of glaucoma in Canada. Can J Ophthalmol. 2013;48(2):83-7.

(13) Buys YM, Harasymowycz P, Gaspo R, Kwok K, Hutnik CM, Blondeau P, et al. Comparison of newly diagnosed ocular hypertension and open-angle glaucoma: ocular variables, risk factors, and disease severity. J Ophthalmol. 2012;2012:757106.

(14) Buys YM, Gaspo R, Kwok K. Referral source, symptoms, and severity at diagnosis of ocular hypertension or open-angle glaucoma in various practices. Can J Ophthalmol. 2012;47(3):217-22.

(15) Canadian Association of Optometrists. Frequency of eye examinations [Internet]. Ottawa (ON): The Association; 2013 [cited 2018 Mar 19]. Available from: https://opto.ca/sites/default/files/cao_position_statement_-_frequency_of_eye_examinations.pdf

(16) Canadian Ophthalmological Society Clinical Practice Guideline Expert Committee. Canadian Ophthalmological Society evidence-based clinical practice guidelines for the periodic eye examination in adults in Canada. Can J Ophthalmol. 2007;42(1):39-45, 158-63.
(17) Ontario Ministry of Health and Long-Term Care. OHIP coverage for eye care services [Internet]. Toronto (ON): Queen's Printer for Ontario; 2013 [cited 2018 Feb 21]. Available from: http://www.health.gov.on.ca/en/public/publications/ohip/docs/eyecare_fs_en.pdf
(18) American Academy of Ophthalmology. Primary open-angle glaucoma [Internet]. San Francisco: The Academy; 2015 [cited 2018 Jan 4]. Available from: http://www.aaojournal.org/article/S0161-6420(15)01276-2/fulltext
(19) National Institute for Health and Care Excellence. Glaucoma: diagnosis and management [Internet]. London (UK): The Institute; 2017 [cited 2018 Jan 4]. Available from: https://www.nice.org.uk/guidance/ng81
(20) Eye Health Council of Ontario. Eye Health Council of Ontario guidelines for the care of patients with glaucoma. Can J Optometry. 2013;75(2):35-40.

About Health Quality Ontario

Health Quality Ontario is the provincial advisor on the quality of health care, providing advice to specific health sectors, the system at large, and the Minister of Health and Long-Term Care on **how to make health care better for patients and health care providers.**

Health Quality Ontario has a legislative mandate to:

- Report to the public on how the health care system is performing,
- Find the best evidence of what works,
- Translate this evidence into concrete standards and tools that health care providers and organizations can put into practice to support ongoing quality improvement.

Health Quality Ontario is governed by its own 12-member Board of Directors with representation from the medical and nursing professions, patients, and other segments of health care. It is committed to supporting the development of a quality health care system based on six fundamental dimensions: efficiency, timeliness, safety, effectiveness, patient-centredness and equity.

In everything it does, Health Quality Ontario works with doctors, nurses, other health care providers, patients and families to support higher quality care across the system. Health Quality Ontario also works with partner organizations across the province to encourage the spread of innovative and proven programs to save money, eliminate redundancy and improve care.

Ways Health Quality Ontario improves health care quality include:

- The spread of practical tools for doctors, nurses, other health care providers and patients to improve care at the front lines.
- Tools for patients that help them manage their care, such as an initiative to help patients after leaving hospital.
- Rapid access to addiction medicine clinics in communities across Ontario.
- Confidential, voluntary information for family physicians about their practice, along with concrete suggestions on how to improve the care they provide.
- Innovative quality improvement programs across health sectors – including hospitals, primary care, long-term care and mental health and addictions – that spread proven programs that save money, eliminate redundancy and improve care.
- Easily accessible and understandable information for patients and health care providers about wait times for tests, specialists and surgical care.
- A yearly report tabled in the legislature on the health of Ontario's health system, shining a light on what is working and where the system must improve.
- Health technology assessments which include recommendations for or against public funding of health care technologies or services, and by an independent group of patients, health care providers and other experts. These are rigorous reviews that analyze the evidence and look at benefits, harms, value for money, and affordability.
- Helping hospitals, long-term care homes, primary care and home care organizations establish and meet their quality improvement goals through their annual quality improvement plans.
- Using the power of innovative digital tools to improve care at the front lines.

- Quality standards that set out for clinicians and patients what the evidence defines as quality care for important health conditions such as opioid use and dementia, and for which are unwarranted variations in care.
- Actively—involving patients and families who are users of the health care system—bringing their perspective into the work that we do and providing tools for health care providers and patients to effectively partner to improve health care quality.

The intent at Health Quality Ontario is to harness the energy and attention of the health care system by focusing on changes needed to make things better for patients and health care providers, and on pragmatic solutions based on the evidence. The organization's mandate is to continuously improve the quality of health care in Ontario while always listening to the voices of physicians, nurses, other health care providers, and patients themselves—to fuel confidence, transparency, and accountability.

For more information about Health Quality Ontario: www.hqontario.ca

About the Provincial Vision Task Force

The Provincial Vision Task Force was established by the Ministry of Health and Long-Term Care in September 2012. The purpose of the Task Force was to develop a Provincial Vision Strategy to improve quality, access, and system integration of ophthalmology services for the people of Ontario, adult and children.

The Ontario Vision Strategy was submitted to the Ministry in May 2013. It consisted of a thorough, evidence-based review of the current state of ophthalmology services in Ontario along with an evaluation of the province's future patient needs. Through this analysis, a comprehensive, well-informed set of strategic recommendations were developed. These recommendations reflect a patient-centered focus to creating a system of ophthalmology in Ontario that delivers the highest possible quality and value to Ontarians.

Once the strategy was released, the Task Force was asked to focus on implementing the specific elements of the report. There is currently a strong focus on supporting the adoption of clinical best practices for Quality-Based Procedures (QBPs), clinical handbooks, quality standards and other tools to measure and improve quality and patient satisfaction. The Task Force also supports the Local Health Integration Networks (LHINs) to provide better vision care in their communities, resulting in improved delivery of patient services and quality and health system efficiency.

Following its initial report, the Provincial Vision Task Force expanded its mandate to incorporate the entire eye care system in a more holistic manner. It identified the need to increase accessibility and improve the quality of care provided to people with or at risk for glaucoma, and it recommended the development of a clinical quality standard. An inter-professional Clinical Expert Panel was formed with clinician experts, including ophthalmologists with subspecialty training in glaucoma, general ophthalmologists, optometrists, family physicians, researchers/academic hospital administrators, Health Quality Ontario (HQO) and Ministry of Health and Long-Term Care representatives.

Looking for more information?

Visit our website at **hqontario.ca** and contact us at **qualitystandards@hqontario.ca** if you have any questions or feedback about this guide.

Health Quality Ontario
130 Bloor Street West, 10th Floor
Toronto, Ontario
M5S 1N5

Tel: 416-323-6868
Toll Free: 1-866-623-6868
Fax: 416-323-9261
Email: QualityStandards@hqontario.ca
Website: hqontario.ca

ISBN TBA (Print)
ISBN TBA (PDF)

Ontario
Health Quality Ontario