

# Minimally Invasive Glaucoma Surgery: Recommendation

## FINAL RECOMMENDATION

- Health Quality Ontario, which is now the Quality business unit at Ontario Health, based on the guidance from the Ontario Health Technology Advisory Committee, recommends against publicly funding minimally invasive glaucoma surgery

## RATIONALE FOR THE RECOMMENDATION

The Ontario Health Technology Advisory Committee has reviewed and accepted the findings of the health technology assessment<sup>1</sup> undertaken by the Canadian Agency for Drugs and Technologies in Health (in collaboration with Health Quality Ontario) and the budget impact analysis and evaluation of patients' experiences, preferences, and values undertaken by Health Quality Ontario (in collaboration with the Canadian Agency for Drugs and Technologies in Health).<sup>2</sup>

Committee members felt there was too much uncertainty in the evidence with respect to both the clinical benefit and cost-effectiveness of minimally invasive glaucoma surgery. For example, committee members did not feel that the evidence provided clarity on what important outcomes minimally invasive glaucoma surgery improves compared with other readily available and widely used treatments.

The committee acknowledged the recommendations from the Health Technology Expert Review Panel of the Canadian Agency for Drugs and Technologies in Health,<sup>3</sup> which highlighted uncertainty around the comparative clinical effectiveness and thus uncertainty in the cost-effectiveness of minimally invasive glaucoma surgery.

In producing this recommendation, Ontario Health Technology Advisory Committee members took into account the lived experience of people with glaucoma, who described the social, emotional, and clinical benefits of various glaucoma treatments, including minimally invasive glaucoma surgery. Committee members were influenced most by the lack of definitive evidence, as well as the existence of alternative treatments for glaucoma. Committee members expressed interest in reviewing minimally invasive glaucoma surgery—either individual techniques or as a general topic—in the future, when more definitive evidence becomes available.

## Decision Determinants for Minimally Invasive Glaucoma Surgery

Decision Criteria	Subcriteria	Decision Determinants Considerations
<p><b>Overall clinical benefit</b></p> <p>How likely is the health technology/intervention to result in high, moderate, or low overall benefit?</p>	<p><b>Effectiveness</b></p> <p>How effective is the health technology/intervention likely to be (taking into account any variability)?</p>	<p>Based on CADTH's assessment, there is uncertainty about the comparative effectiveness of MIGS versus pharmacotherapy, laser, or filtration surgery, as well as MIGS combined with cataract surgery versus filtration surgery combined with cataract surgery. Based on moderate- to high-quality evidence, MIGS combined with cataract surgery is likely more effective in reducing intraocular pressure than cataract surgery alone.</p>
	<p><b>Safety</b></p> <p>How safe is the health technology/intervention likely to be?</p>	<p>Based on CADTH's assessment, most adverse events were minor. However, when major adverse events occurred, between-group differences between people who were treated with MIGS compared with other treatments were unclear.</p>
	<p><b>Burden of illness</b></p> <p>What is the likely size of the burden of illness pertaining to this health technology/intervention?</p>	<p>Approximately 400,000 people in Canada have glaucoma.</p>
	<p><b>Need</b></p> <p>How large is the need for this health technology/intervention?</p>	<p>MIGS comprises several different procedures that may fill a gap in the clinical treatment spectrum of glaucoma because they are less invasive than conventional filtration surgery.</p>
<p><b>Consistency with expected patient, societal, and ethical values<sup>a</sup></b></p> <p>How likely is adoption of the health technology/intervention to be congruent with patient, societal, and ethical values?</p>	<p><b>Patient values</b></p> <p>How likely is the adoption of the health technology/intervention congruent with expected patient values?</p>	<p>Participants reported they value access to effective treatments for glaucoma that may prevent potential adverse health conditions, such as blindness. Patients valued the independence and quality of life good vision provides them and valued treatments designed to preserve their vision. Trust between patient and health care provider was valuable for decision-making when choosing a specific glaucoma treatment.</p>
	<p><b>Societal values</b></p> <p>How likely is adoption of the health technology/intervention to be congruent with expected societal values?</p>	<p>Participants reported anxiety and fear about the diagnosis of glaucoma and expressed a desire for effective treatment. Participants reported feeling that MIGS procedures were generally effective at managing their glaucoma and reducing their risk of blindness, which would be consistent with societal values to prevent harm. Conversely, ensuring scarce public funds are spent on health care services and treatments that improve health outcomes may also be consistent with societal values.</p>
	<p><b>Ethical values</b></p> <p>How likely is adoption of the health technology/intervention to be congruent with expected ethical values?</p>	<p>The ethical and social issues relevant to the optimal use of MIGS in Canada are similar to issues that would be relevant to the optimal use of any new procedure where other treatment options exist, including equity of access (e.g., private vs. public payment, rural or remote areas vs. urban centres) and medical necessity.</p>

Decision Criteria	Subcriteria	Decision Determinants Considerations
<p><b>Cost-effectiveness</b></p> <p>How efficient is the health technology/intervention likely to be?</p>	<p><b>Economic evaluation</b></p> <p>How efficient is the health technology/intervention likely to be?</p>	<p>Given the uncertainty regarding the effectiveness of MIGS, it is difficult to make conclusions regarding its cost-effectiveness. Based on CADTH's assessment, it was estimated that there was a 60% probability of MIGS being cost-effective compared with pharmacotherapy, at a willingness-to-pay of \$50,000 per quality-adjusted life-year (QALY). MIGS in combination with cataract surgery may be cost-effective compared with cataract surgery alone (incremental cost-effectiveness ratio [ICER]: \$65,873/QALY, 27% and 75% probability of being cost-effective at a willingness-to-pay of \$50,000/QALY and \$100,000/QALY, respectively); however, this result varied in sensitivity analyses. It is unlikely that MIGS (with or without cataract surgery) is cost-effective compared with filtration surgery (with or without cataract surgery) or laser therapy.</p>
<p><b>Feasibility of adoption into health system</b></p> <p>How feasible is it to adopt the health technology/intervention into the Ontario health care system?</p>	<p><b>Economic feasibility</b></p> <p>How economically feasible is the health technology/intervention?</p>	<p>Funding MIGS would likely lead to additional costs in Ontario. We estimated the budget impact, given a slow uptake, would range from \$1 million (in year 1) to \$18 million (in year 5) over the next 5 years, and given a fast uptake, would range from \$6 million (in year 1) to \$70 million (in year 5). This is highly dependent upon the population in which MIGS is used, and which therapies it replaces.</p>
	<p><b>Organizational feasibility</b></p> <p>How organizationally feasible is it to implement the health technology/intervention?</p>	<p>Should new evidence become available that supports a recommendation to fund the technology, there is infrastructure in place to make implementation feasible.</p>

Abbreviations: ICER, incremental cost-effectiveness ratio; MIGS, minimally invasive glaucoma surgery; QALY, quality-adjusted life-years.

<sup>a</sup>The anticipated or assumed common patient, societal, and ethical values held in regard to the target condition, target population, and/or treatment options. Unless there is evidence from scientific sources to corroborate the true nature of the patient, societal, and ethical values, the expected values are considered.

## REFERENCES

- (1) Canadian Agency for Drugs and Technologies in Health. Optimal use of minimally invasive glaucoma surgery: a health technology assessment. Optimal use report vol. 8, no. 1b [Internet]. Ottawa (ON): The Agency; 2019 [cited 2019 Jan]. Available from: <https://www.cadth.ca/sites/default/files/pdf/op0532-migs-science-report.pdf>
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- (3) Canadian Agency for Drugs and Technologies in Health. Optimal use of minimally invasive glaucoma surgery: recommendations [Internet]. Ottawa (ON): The Agency; 2019 [cited 2019 Jun 21]. Available from: <https://www.cadth.ca/sites/default/files/ou-tr/op0532-migs-rec-report.pdf>

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