

Cyflwynwyd yr ymateb i ymgynghoriad y [Pwyllgor Iechyd a Gofal Cymdeithasol](#) ar [Gwasanaethau offthalmoleg yng Nghymru](#)

This response was submitted to the [Health and Social Care Committee](#) consultation on [Ophthalmology Services in Wales](#)

OP07 : Ymateb gan: | Response from: Glaukos

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## **Inquiry into ophthalmology services in Wales**

**March 2025**

Glaucoma is the leading cause of irreversible blindness worldwide, and an estimated 500,000 people in the UK suffer with glaucoma. Around 15% of cataract patients also have developing glaucoma but, at present, the two are normally treated separately.

Cataract surgery is the most common elective procedure performed in NHS Wales, with 16,500 surgeries performed in 2023/24. According to our estimates, around 2,000 combined cataract and glaucoma procedures could be carried out annually for a moderate extra acquisition cost for the medical technology, very minor extra patient risk, and no pathway changes.

Our response to this inquiry highlights the need to make better use of the opportunity cataract survey provides. This proactive approach to glaucoma management in Wales has the potential to delay disease progression, prevent irreversible blindness and ultimately help ophthalmic services cope with an increasing number of glaucoma patients.

### **The challenges with glaucoma care**

#### **1. Demand on Services**

The follow up burden in ophthalmology generally is more than in non-ophthalmic specialties, but in glaucoma even more so; once diagnosed, a glaucoma patient may need up to 40 follow up visits<sup>1</sup>. Each visit requires a multi-disciplinary team to perform different tests and investigations alongside the ophthalmologist to provide a full clinical picture and so treatment can be decided appropriately. This list is non-exhaustive, but includes ophthalmoscopy, gonioscopy, tonometry, pachymetry, perimetry and optical coherence tomography (OCT). The resource intensive nature of glaucoma management means that often, even when good clinical evidence exists, procedural interventions are under-utilised; the LIGHT trial<sup>2</sup> has clearly shown the benefits of primary selective laser trabeculoplasty (SLT), however capacity limitations and service availability mean that topical medication still makes up the primary therapy in many cases.

#### **2. Asymptomatic nature of the disease**

From a patient's perspective, the disease is often symptomless<sup>3</sup>. This means that, particularly in the early stages of disease, because the brain is so good at covering gaps in vision, there is generally no immediate feedback or obvious sign of worsening disease if visits or treatments are delayed or missed. This is especially relevant because so many glaucoma patients are still treated with topical medication that relies on patient adherence for treatment success.

#### **3. Low compliance and adherence to treatment**

90% patients don't fully adhere to their medication regimen, with 50% in some studies purposely discontinuing within 6 months<sup>4</sup>. The reasons for non-adherence are well understood, and include forgetfulness, dispensing challenges, difficulty in installation, side effects and more<sup>5</sup>. Non-adherence to eye drops is a major reason for disease progression in glaucoma. Several studies have shown that patients still progress to advanced disease and vision loss while under treatment with topical medications<sup>6,7</sup>.

#### **4. Side effects of topical medication**

It is well established that the preservatives in topical ocular medication can cause symptoms of dry-eye<sup>8</sup>, and this is further linked to low compliance rates<sup>9</sup>. Furthermore, the ocular surface damage caused by long-term exposure to the preservatives in topical eyedrops has been shown to impede the chance of success of future filtering procedures<sup>10</sup>.

## **Addressing the challenge: recommendations to improve glaucoma care**

### **1. Place greater focus on early intervention to delay disease progression**

Early glaucoma can be managed relatively easily in low-risk settings such as asynchronous assessment clinics, but advanced glaucoma needs more resources.

As patients progress to advanced disease they need to be seen more frequently in clinics, are much more likely to require specialist-led care and are more likely to need higher risk interventions such as trabeculectomy. These filtering procedures are invasive, time-consuming and create blebs that require significant follow up. As the disease progresses, we must also consider non-ophthalmic healthcare factors such as trips and falls where glaucoma is a contributing factor. The cost of social care and blindness due to glaucoma progression presents service challenges which may be avoidable by focussing on earlier intervention.

Given that treatment costs are directly correlated with disease progression<sup>11</sup>, and the relationship between non-adherence and disease progression, it should be a priority for providers to take every opportunity to take compliance out of the patients' hands.

### **2. Take a patient-centred approach**

The problem of non-adherence leading to disease progression is especially problematic since ophthalmologists often do not have the time to be able to fully explain to patients the potential pathway their disease can take if it progresses.

This means that the treatment pathway is revealed to the patient one step at a time – only when the next treatment change is required.

If patients were able to understand the full-life journey of glaucoma disease at diagnosis, they may be more likely to comply with their treatment. Furthermore, it is possible many patients, if given all the information, would choose to avoid eye drops altogether and look at alternative treatment options.

### **3. Utilise low risk surgical options**

The opportunity exists to intervene in comorbid cataract and glaucoma patients in a surgically safe way, at the time the eye is open for the elective cataract procedure. Although combined procedures add to the time it takes for a regular cataract procedure, this difference is only five minutes, and effectively saves time in reducing backlogs, waiting times, and enhancing overall operational efficiency.

A randomised controlled trial from 2019 showed that the risk profile of cataract surgery plus iStent inject, a small stent used to bypass the blockage at the trabecular meshwork to re-establish the physiological outflow of aqueous humour, was similar to cataract surgery alone.

The NICE interventional procedures guidance (IPG) (575, April 2017) showed that the evidence on the efficacy and safety of trabecular micro-bypass was adequate in quality and quantity, and said the procedure could be performed with just standard measures for consent, governance and audit. This equates to the most positive level of procedural guidance that NICE awards.

Over 1.1 million iStents have now been implanted worldwide, with over 35,000 in the UK with no major safety concerns, and because of the low level of intraoperative and post-operative adverse events, this has had little negative impact on the ophthalmic services.

The extremely low risk profile of combined procedures<sup>12</sup> should mean the bar for surgical intervention is lowered. Whenever cataract surgery is being performed in a glaucoma patient the default option should be to combine with trabecular micro-bypass unless there is a reason not to. In these circumstances, no compromise should be made on patient safety, and this should be reflected in the choice of device and procedure. This means seeking out a device with extremely low levels of intra-operative and post-operative adverse events, long history of safety, substantial clinical evidence base, and low risk of long-term complications such as endothelial cell loss.

## **Intervention with stent technologies: the solution**

### **1. Intraocular pressure (IOP) & medication reductions**

A randomised controlled study showed in 2019 that cataract surgery + iStent inject lowers IOP more effectively than cataract surgery alone<sup>12</sup>. The IOP lowering effect of iStent technologies have been confirmed in 320+ published studies. Repeated studies have shown that when iStent is implanted at the time of cataract surgery patients see a significant long-term reduction in both IOP and the need for topical medications<sup>13-15</sup>.

### **2. Impact on structural and functional progression**

Studies that have measured objective structural disease markers such as retinal nerve fibre layer and cup:disc ratio have also shown stability over time<sup>14,16</sup>. According to a meta-analysis by Gillmann et al.<sup>17</sup>, patients who received iStent technologies showed visual field stability comparable to non-glaucomatous eyes. Over a mean follow-up period of 37.9 months, the study revealed a minimal rate of visual field deterioration, with a mean progression rate of only  $-0.024$  dB/year. This rate is considerably slower than what is typically seen in medically treated glaucoma patients.

Intervening in glaucoma with trabecular bypass at the same time as cataract surgery delays disease progression, helping ophthalmic services cope with increasing populations of glaucoma patients.

### **3. The value proposition**

Health Technology Assessments in several countries, including European markets such as Italy, France and Spain, have concluded that iStent technologies are cost-effective or cost-saving compared to cataract surgery alone for patients with mild to moderate open angle glaucoma (OAG).

## **The missed opportunity in Wales**

NHS Wales performed over 16,500 cataract procedures in 2023/24. Given we estimate between 10-15% of patients to be co-morbid with glaucoma at the time of cataract surgery, that would be between 1,650 and 2,475 annual opportunities to intervene in glaucoma at the time of cataract surgery. Currently NHS Wales is missing the majority of those opportunities to delay glaucoma disease progression.

Reasons for missing these opportunities include:

- Understanding in primary care of surgical options for glaucoma at the time of cataract surgery is low.

- Glaucoma is often not considered at the time of cataract referral.
- Many Health Boards have not approved trabecular micro-bypass, despite the NICE IPG and the devices being available on the All Wales Contract for procurement.
- Early glaucoma is still managed by general ophthalmologists in many cases, who may not perform trabecular micro-bypass.
- Patients at the earliest stages of the disease may not be considered in need of trabecular micro-bypass at the time of cataract surgery, but this often neglects the benefits of preventing progression linked to potential future non-adherence, side effects or preservatives.

## **Our recommendations for Government and the NHS**

1. Ensure all NHS providers are capable of offering combined cataract surgery and trabecular bypass, where appropriate, to intervene early in glaucoma and reduce the need for topical medications thereby limiting disease progression due to non-adherence.
2. Modify the pathway to make it the default position that there will be a combined cataract and glaucoma procedure co-morbid patients being listed for cataract surgery, unless there is a clinical reason not to. Making use of the opportunity to intervene in glaucoma can lead to major cost avoidance downstream by preventing disease progression.
3. Ensure that optometrists are better educated on the benefits of combined procedures, moving towards a position where co-morbid patients are informed that there are options to intervene in glaucoma at the time of cataract surgery.

## References

1. Royal College of Ophthalmology Glaucoma Commissioning Guide 2016, page 5. Available: <https://www.rcophth.ac.uk/wp-content/uploads/2020/08/Glaucoma-Commissioning-Guide-Long-June-2016-Final.pdf>
2. Gazzard G, Konstantakopoulou E, Garway-Heath D, Garg A, Vickerstaff V, Hunter R, Ambler G, Bunce C, Wormald R, Nathwani N, Barton K. Selective laser trabeculoplasty versus eye drops for first-line treatment of ocular hypertension and glaucoma (LiGHT): a multicentre randomised controlled trial. *The Lancet*. 2019 Apr 13;393(10180):1505-16.
3. Stein JD, Khawaja AP, Weizer JS. Glaucoma in adults—screening, diagnosis, and management: a review. *Jama*. 2021 Jan 12;325(2):164-74.
4. Nordstrom BL, Friedman DS, Mozaffari E, Quigley HA, Walker AM. Persistence and adherence with topical glaucoma therapy. *American journal of ophthalmology*. 2005 Oct 1;140(4):598-e1.
5. Tsai JC, McClure CA, Ramos SE, Schlundt DG, Pichert JW. Compliance barriers in glaucoma: a systematic classification. *Journal of glaucoma*. 2003 Oct 1;12(5):393-8.
6. Malihi M, Moura Filho ER, Hodge DO, Sit AJ. Long-term trends in glaucoma-related blindness in Olmsted County, Minnesota. *Ophthalmology*. 2014 Jan 1;121(1):134-41.
7. Peters D, Bengtsson B, Heijl A. Lifetime risk of blindness in open-angle glaucoma. *American journal of ophthalmology*. 2013 Oct 1;156(4):724-30.]
8. Baudouin C, Labbé A, Liang H, Pauly A, Brignole-Baudouin F. Preservatives in eyedrops: the good, the bad and the ugly. *Progress in retinal and eye research*. 2010 Jul 1;29(4):312-34.
9. Zhang X, Vadoothker S, Munir WM, Saeedi O. Ocular surface disease and glaucoma medications: a clinical approach. *Eye & contact lens*. 2019 Jan 1;45(1):11-8.
10. Broadway DC, Grierson I, O'Brien C, Hitchings RA. Adverse effects of topical antiglaucoma medication: II. The outcome of filtration surgery. *Archives of ophthalmology*. 1994 Nov 1;112(11):1446-54.
11. Traverso CE, Walt JG, Kelly SP, Hommer AH, Bron AM, Denis P, Nordmann JP, Renard JP, Bayer A, Grehn F, Pfeiffer N. Direct costs of glaucoma and severity of the disease: a multinational long term study of resource utilisation in Europe. *British journal of ophthalmology*. 2005 Oct 1;89(10):1245-9.
12. Samuelson TW, Sarkisian Jr SR, Lubeck DM, Stiles MC, Duh YJ, Romo EA, Giamporcaro JE, Hornbeak DM, Katz LJ, Bartlett W, Buznego C. Prospective, randomized, controlled pivotal trial of an ab interno implanted trabecular micro-bypass in primary open-angle glaucoma and cataract: two-year results. *Ophthalmology*. 2019 Jun 1;126(6):811-21.
13. Healey PR, Clement CI, Kerr NM, Tilden D, Aghajanian L. Standalone iStent trabecular micro-bypass glaucoma surgery: a systematic review and meta-analysis. *Journal of glaucoma*. 2021 Jul 1;30(7):606-20.
14. Hengerer FH, Auffarth GU, Conrad-Hengerer I. 7-Year efficacy and safety of iStent inject trabecular micro-bypass in combined and standalone usage. *Advances in Therapy*. 2024 Apr;41(4):1481-95.

15. Neuhann TH, Neuhann RT, Hornbeak DM. Ten-year effectiveness and safety of trabecular micro-bypass stent implantation with cataract surgery in patients with glaucoma or ocular hypertension. *Ophthalmology and Therapy*. 2024 Aug;13(8):2243-54.
16. Ziaei H, Au L. Manchester iStent study: long-term 7-year outcomes. *Eye*. 2021 Aug;35(8):2277-82.
17. Gillmann K, Hornbeak DM. Rates of visual field change and functional progression in glaucoma following trabecular microbypass implantation of iStent technologies: a meta-analysis. *BMJ Open Ophthalmology*. 2024 Feb 15;9(1).
18. Heijl A, Leske MC, Bengtsson B, Hyman L, Bengtsson B, Hussein M, Early Manifest Glaucoma Trial Group. Reduction of intraocular pressure and glaucoma progression: results from the Early Manifest Glaucoma Trial. *Archives of ophthalmology*. 2002 Oct 1;120(10):1268-79.